

BEDEN EĞİTİMİ VE SPOR ÖĞRETMENLİĞİ BÖLÜMÜ ÖĞRENCİLERİNİN ELEŞTİREL DÜŞÜNME EĞİLİMLERİNİN İNCELENMESİ

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ÖZET

Araştırma, beden eğitimi ve spor öğretmenliği bölümü öğrencilerinin eleştirel düşünme eğilimlerinin incelenmesi amacıyla yapılmıştır. Araştırmanın grubunu, Kocaeli Üniversitesi Beden Eğitimi ve Spor Yüksekokulu Beden Eğitimi ve Spor Öğretmenliği Bölümü'nde 2013-2014 eğitim- öğretim yılında eğitim 118 kız ve 114 erkek olmak üzere toplam 232 öğrenci oluşturmaktadır. Araştırmada veriler öğrencilerin kişisel bilgilerini belirlemek amacıyla "Kişisel Bilgi Formu" ve eleştirel düşünme eğilimlerini ölçmek amacıyla "California Eleştirel Düşünme Eğilimleri Ölçeği (CCTDI)" kullanılarak toplanmıştır. Elde edilen veriler normal dağılım gösterdiği için parametrik testlerden Independent Samples T Testi ve One Way Anova Testi kullanılmıştır. Anlam düzeyi 0.05 olarak alınmıştır.

Araştırma sonucunda araştırma kapsamına alınan öğrencilerin "California Eleştirel Düşünme Eğilimleri Ölçeği (CCTDI)" puan ortalamasının düşük (218,40±20,18) olduğu belirlenmiştir. California Eleştirel Düşünme Eğilimleri cinsiyet değişkenine göre karşılaştırıldığında alt boyutlardan olan Doğruyu Arama alt boyutunda istatistiksel olarak anlamlı farklılık bulunmuştur. Sınıf değişkenine göre karşılaştırıldığında ise 1.sınıf ile 2.sınıf ve 1.sınıf ile 3.sınıf arasında sistematik alt boyutunda istatistiksel olarak anlamlı farklılık bulunmuştur. Bu doğrultuda, Beden eğitimi ve spor öğretmenliği bölümü öğrencilerine eğitimleri süresince eleştirel düşünme becerilerini geliştirecek öğretim yöntem ve stratejilerinin kullanılması ve sosyal etkinlikler için fırsat yaratılması önerilebilir.

Anahtar kelimeler: Üniversite öğrencisi, eğilim, eleştirel düşünme

THE INVESTIGATION OF CRITICAL THINKING DISPOSITIONS OF THE STUDENTS AT PHYSICAL EDUCATION AND SPORTS TEACHING DEPARTMENT

ABSTRACT

In this study, the purpose of the research is to investigate critical thinking dispositions of the students at physical education and sports teaching department at Kocaeli University. The research group is composed of 232 students studying at Kocaeli University Physical Education and Sports Teaching department during 2013-2014 Academic year. The "California Critical Thinking Disposition Inventory" was used as data collection tool. The data was analyzed through Independent Samples Test and Anova Test with a significance level of 0.05 (p<0.05).

As a result of this study, the students' average score of "California Critical Thinking Disposition Inventory" was found low (218,40±20,18). When California Critical Thinking Disposition Inventory scores were compared according to gender, a statistically significant difference was found in the subdimension of "Truth Seeking". The comparison according to class revealed that there was a statistically significant difference between 1st class and 2nd class and between 1st class and 3rd class in the subdimension "Systematicity". Finally, it is suggested that the students should use the teaching methods and strategies to develop critical thinking skills and be provided with the opportunities for social activities through the education years.

Key words: College students, disposition, critical thinking

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INTRODUCTION

One of the most criticised aspect of education in general is that it impels students to memorise with a traditional understanding rather than make them think and, as a result of this students are unable to acquire a critical point of view. Critical thinking is currently a popular notion since in this information blooming age, individuals are expected to adapt themselves to changes rapidly. Individuals using information efficiently are those who are flexible, creative and questioning, who investigate, analyse, can evaluate events from multiple perspectives, decide between options, know themselves very well and so think critically. The greatest responsibility for the acquisition of these qualities is on education⁴.

Critical thinking is a process consisting of universal values based on investigation used in the difficulties encountered, intuition, logic and experience. It is grounded on the skills of being able to observe our own thoughts and give meaning to them¹⁸. Critical thinking can be defined as “an active and organized cognitive process aiming to understand ourselves and the events around by being aware of our own thinking process, taking others’ thoughts into consideration, applying what we have learned⁶. It can be concluded about critical thinking that it is a complicated and comprehensive process requiring high level of cognitive skills¹¹.

The core principle of critical thinking is based on analysis, deduction, interpretation, explanation, regulation and finally evaluation skills. Individuals who acquire critical thinking skills also have these qualities.

There exist quiet a number of scales determining critical thinking skills. One of these scales, developed by American Philosophical Association in 1990, also used in this study, is California Critical Thinking Disposition Inventory. In this

scale 7 attributes constituting critical thinking were determined. These are explained by Kokdemir in 2003 as follows:

✓ **Truth-Seeking:** In this subdimension including the disposition of evaluating options or opinions different from each other, the individual shows a tendency towards truth seeking, questioning skills, being objective even to the input against his own ideas.

✓ **Open-mindedness:** It describes the individual’s tolerance to different approaches and sensitivity to his own mistakes. In this subdimension, while making a decision, individual takes the views of others into consideration.

✓ **Analyticity:** This refers to the tendency to be careful in situations in which problems are likely to happen, be reasonable even in the case of difficult problems and use objective evidence.

✓ **Systematicity:** It is the inclination to investigate systematically and attentively in an organised way.

✓ **Self-confidence:** It is the confidence that a person has in his own reasoning process.

✓ **Inquisitiveness:** It is the inclination of an individual to acquire knowledge and learn new things without any expectation or self-seeking.

✓ **Maturity:** It refers to mental maturity and cognitive development.

Cüceloğlu (1995) describes three steps for an individual to develop himself and be able to reach critical thinking:

1. The person should be aware of his own thinking process: Rather than accepting thinking as a process out of human control, just existing on its own, one should be aware of his thinking process and know that it is possible to direct it consciously. This requires entrepreneurial attitude.

2. The person should be able to observe others’ thinking processes: The person who can observe others’ thinking processes will have the opportunity to compare his own thinking process and others’ thinking process. The person analysing the thinking

strategies used and the steps followed by others to achieve a certain result will get the chance to think more efficiently. This kind of approach requires the individual to be aware of his own limits and make himself open to new point of views by going beyond these limits.

3. The person should be able to implement what he has learned in his daily life: Without the implication, a habitual critical thinking can not be maintained.

Critical thinking is not an inborn ability but an ability that is acquired over time. It starts first of all with the self-confidence presented by the family and develops more throughout life cycle. At this point, teachers play a crucial role. The underlying reason behind this is that if an individual can transfer his critical thinking skills in life starting from school age, he can have a more meaningful life, question it and so find solutions in the later stages of life when he has to deal with life alone. In order to be able to achieve these aims, it of critical importance in terms of students' development that education system should be adjusted accordingly and educators should have critical thinking skills and transfer these to their students. As a consequence, life quality will improve in parallel with critical thinking skills⁸. The schools of information age are the mediums in which individuals have creative and critical thinking skills and reach the information that they need, where knowledge is actively produced and disseminated, and, information technologies are efficiently used³. Teachers play a critical role as a guide for their students in making students acquire critical thinking skills in the construction of knowledge.

In the cases where critical thinking training is a part of ongoing education students not only become successful in academical surrounding but also they become more positive and more helpful socially and drug addiction rates

decrease¹⁸. Due to these kinds of benefits, in order for critical thinking skills to be taught in every stage of education, lessons and contents should revised and redesigned, students should be given the chances to apply problem solving and critical thinking practices. For instance, problem solving and critical thinking skills lessons and courses at university level aim to develop students from three aspects¹⁶. These aims are discussion skills, understanding cognitive process and intellectual progress.

The study aims to investigate critical thinking disposition of physical training and sports teaching department students and find answers to the following questions:

- Is there a significant difference according to the gender of the students at teaching department?
- Is there a significant difference according to the class variable for the students at teaching department?
- What is the average score of critical thinking disposition of the students at teaching department?

MATERIAL and METHOD

Design of the Study

The study was designed according to a descriptive design model and the data of the study was collected through questionnaire. The students participating in the study were given information on the content and the aim of the study and then the data was gathered. In order to obtain data on personal information, the students were given "Personal Information Form" and with the aim of measuring their critical thinking skills, California Critical Thinking Disposition Inventory was used. The statistics of data gathered through CCTDI was analysed using SPSS 17.0 program. In the analysis of the data, Independent Samples T Test and One Way Anova Test were used and significance level was determined as 0,05.

Participants of the Study

The sample of the study comprised of a total of 232 students consisting of 118

female and 114 male students studying at physical training and sports teaching department of School of Physical Education and Sports, at Kocaeli University during 2013-2014 academic year.

Data Collection Tool

California Critical Thinking Disposition Inventory (CCTDI) was used as the data collection tool. This inventory was developed in the Delphi project carried out by the American Philosophical Association in 1990. It was developed by Facione and Giancarlo (1992) and adapted into Turkish by Kökdemir (2003). The inventory has 7 subscales that were theoretically designed and psychometrically tested. However, a grading system that consists of the sum of these scales is used in order to determine the critical thinking disposition.

In other words, the critical thinking disposition is calculated as a sum grade. The original scale consists of 75 items and 7 sub dimensions. The original sub dimensions of the scale are: truth seeking, open-mindedness, analyticity, systematicity, confidence in reasoning, inquisitiveness, and maturity¹⁸.

As a result of the studies done, the new CCTDI scale's internal consistency reliability (alpha) is 0.88, and the total variances it describes are found out as 36.13%. The new scale consists of 51 items and 6 subdimensions. Moreover, it is seen that two subdimensions (open-mindedness and maturity) have merged. Thus, the new subdimensions are: analyticity, open-mindedness, inquisitiveness, self-confidence, truth-seeking, and systematicity¹⁸.

FINDINGS

Table 1. Independent Samples T Test Results of California Critical Thinking Disposition according to the Gender Variable

SUBDIMENSIONS	GENDER	N	\bar{X}	SS	T	P
TRUTH-SEEKING	Female	118	25.51	5.03	1.99	.047*
	Male	114	24.17	5.18	1.99	
OPEN-MINDEDNESS	Female	118	50.35	7.03	-.53	.593
	Male	114	50.85	7.30	-.53	
ANALYTICITY	Female	118	53.50	6.29	1.02	.308
	Male	114	52.64	6.51	1.02	
SYSTEMATICITY	Female	118	26.79	4.16	-1.02	.308
	Male	114	27.35	4.09	-1.02	
SELF-CONFIDENCE	Female	118	28.27	4.75	.35	.720
	Male	114	28.02	5.62	.35	
INQUISITIVENESS	Female	118	34.52	5.40	-.32	.742
	Male	114	34.77	5.99	-.32	

p<0,05

As it is seen on Table 1, when the California Critical Thinking Dispositions are compared according to the gender variable, it was found that the truth-

seeking subdimension has a statistically meaningful difference (p<0,05). It is seen that females have more truth-seeking disposition.

Table 2. Anova and Post-Hoc test Results of California Critical Thinking Disposition according to the Class Variable

POST-HOC TEST					ANOVA					
SUB DIMENSIONS	CLA	SS	P		Sum of Squares	df	Mean of Squares	F	P	
TRUTH-SEEKING	1	2	.94	.53	Between Groups	99.87	4	24.96	.943	.440
		3	.91	.71	In Group	6012.43	227	26.48		
		4	.97	1.00	Total	6112.30	231			
		5	2.03	.99						
OPEN-MINDEDNESS	1	2	1.29	.525	Between Groups	410.76	4	102.69	2.039	.090
		3	1.25	.084	In Group	11430.75	227	50.35		
		4	1.34	1.000	Total	11841.51	231			
		5	2.80	.922						
ANALYTICITY SYSTEMATICITY	1	2	1.16	.862	Between Groups	326.42	4	81.60	2.024	.092
		3	1.12	.441	In Group	9152.17	227	40.31		
		4	1.20	.911	Total	9478.60	231			
		5	2.51	.832						
SELF-CONFIDENCE INQUISITIVENESS	1	2	.73	.041*	Between Groups	242.41	4	60.60	3.718	.006*
		3	.71	.044*	In Group	3700.48	227	16.30		
		4	.76	.830	Total	3942.89	231			
		5	1.59	.816						
ANALYTICITY SYSTEMATICITY	1	2	.95	.992	Between Groups	81.48	4	20.37	.754	.557
		3	.92	.939	In Group	6136.23	227	27.03		
		4	.98	.999	Total	6217.72	231			
		5	2.05	.664						
SELF-CONFIDENCE	1	2	1.04	.926	Between Groups	52.50	4	13.12	.401	.808
		3	1.01	.964	In Group	7436.50	227	32.76		
		4	1.08	.996	Total	7489.01	231			
		5	2.26	1.00						

p<0,05

As it is seen in Table 2, when the California Critical Thinking Dispositions are compared according to the class variable, it was found that there is a

statistically significant difference between the 1st and 2nd classes, and 1st and 3rd classes concerning the systematicity subdimension(p<0,05).

Table 3. The Total Score of Critical Thinking Level of the Study Group

CRITICAL THINKING LEVEL	N	%	X̄	SS
LOW	201	86.6	218.40	20.18
MEDIUM	31	13.4		
Total	232	100		

According to Table 3, when the total scores of critical thinking levels of the students that were within the scope of the study are analyzed, it is seen that 201 (86.6%) of them have low and 31 (13.4

%) of them have medium critical thinking levels. The average CEDEO score of the students in the study was measured as low (218,40±20,18).

DISCUSSION

The present study was carried out to analyze the critical thinking disposition of the physical training and sports teaching department students. As a result of the study, when it was analyzed through the gender variable, it was found out that the female students had higher critical thinking disposition when compared to the male students ($p < 0.05$). Furthermore, when it was compared according to the class variable, it was found out that there was a statistically meaningful difference between the 1st and the 2nd, and 1st and the 3rd classes ($p < 0.05$).

In the study Dutoğlu and Tuncel (2008) conducted with 374 pre-service teachers to find out the relationship between pre-service teachers' critical thinking dispositions and their emotional intelligence, they found out that there is a meaningful difference between the subscales of critical thinking dispositions and the sub dimensions of emotional intelligence. However, this relationship was found to be positive and at low and medium level. Moreover, it was revealed that there is a significant positive relationship at medium level between the total scores of pre-service teachers' critical thinking scale and emotional intelligence.

In the study carried out by Korkmaz (2009) to find out the critical thinking dispositions and levels of the 110 participant teachers working at elementary, secondary and higher education, the results showed that the teaching grade, educational level, branch, teaching experience, gender and department variables were not effective on the critical thinking dispositions and levels of the teachers.

Korkmaz (2009) studied with 480 students to decide on the critical thinking dispositions and levels of the students studying at the faculty of education and got the result that the critical thinking dispositions of the students were at a medium level and that the critical thinking

dispositions did not change according to gender or department variables.

Kayağıl and Erdoğan (2011) studied on how much the success in maths, age, gender and socio-economical level variables predict the 7th grade students' critical thinking skill levels with the participation of 360 students. As a result of the study, it was found out that the critical thinking skill level was insufficient and the success in maths, age, and being the hirer or the owner of a house variables are the predictors on finding out the critical thinking skills level.

Yıldırım and Şensoy (2011) studied with 60 (29 control group and 31 experimental group) 7th grade students to find out the effect of science teaching based on critical thinking skills on students' critical thinking disposition. It was seen that the education given in the experimental group that is taught science based on the critical thinking skills was more effective on increasing the critical thinking disposition levels of the students when compared with the control group. Furthermore, it was found out that science class based on the critical thinking skills was effective on developing the critical thinking disposition level, and the teaching applied in the control group was not effective on it.

In the study Aybek (2006) carried out, it was tried to analyze the effect of teaching topic and skills based critical thinking on the pre-service teachers' critical thinking dispositions. As a result of the study, it was found out that the students have positive feelings on the critical thinking activities in the classroom in general, that the students agree on the fact that the critical thinking skills that were tried to be taught in the course should be taught to all teachers, and that these skills are also important in daily life.

Çetinkaya (2011) carried out a study with the participation of 195 students to find out the pre-service Turkish Teachers' views on critical thinking dispositions. The pre-

service Turkish teachers' critical thinking dispositions were found out to be at a low level. There was not a meaningful difference according to the school graduated while there was meaningful difference according to gender and class variables.

Ricketts and Ruud (2004) stated that the university students studying at different departments have different levels of critical thinking skills according to their departments.

Walsh and Hardy (1999) compared the students' departments and their gender with Critical Thinking Disposition scores and found out that the English Language department students had the highest grade and that the Psychology, Nursing, History, Education and the Business department students followed them.

In order to find out the relationship between the university students' attitude towards critical thinking and research anxieties, Bökeoğlu and Yılmaz (2005) conducted a study with 128 university students. The results of the study showed that the analyticity, open-mindedness and CCTDI total scores of the students showed meaningful differences according to their gender while whether they had participated in a research activity did not cause a meaningful difference on the self-confidence subscale. The comparisons done on the students' ages show that there are meaningful differences concerning their research anxiety, analyticity, inquisitiveness, self-confidence and CCTDI total scores.

Gök and Erdoğan (2011) carried out a study with 103 first grade students studying to be classroom teachers in order to analyze the students' creative thinking levels and critical thinking dispositions in terms of different variables and to find out whether there is a relationship between the students' creative thinking levels and their critical thinking dispositions. The study shows that creative thinking is affected by gender, academic success, mother's

educational background variables, and that it is not affected by the type of high school and father's educational background. Critical thinking was found out not to be affected by any of the variables covered in the study. Moreover, the fact that critical and creative thinking are two upper level thinking skill that are related to each other was supported by the results of the study.

Another study was conducted by Certel et. al. (2011) with 98 students (40 female 58 male) in order to find out the relationship between their emotional intelligence (EQ) and critical thinking (CT) dispositions. As a result of the study, in terms of EQ levels, the female students were found out to have higher score means in the interpersonal subscale and they were more successful than the male students on stress management. The critical thinking dispositions of the students did not differ in terms of open-mindedness, analyticity, self-confidence, systematicity, and inquisitiveness subdimensions and CCTDI total score according to the gender variable, while truth seeking had a meaningful difference on behalf of the females. There was a positive meaningful relationship between the EQ levels and CT dispositions of the pre-teachers.

As a result, when the evaluation results of the study are analyzed, it is found out that the CEDEO score means of the students that participated in the study are low ($218,40 \pm 20,18$). The reasons behind this are that the students studying at the School of Physical Education and Sports have low interest levels on the theoretical classes, they are able to pass the classes easily because of the system, and they do not try enough to develop their cognitive levels. Since the students do not have a perspective of life and they do not follow an ideal, and since they think that they can graduate only with their physical capability, it may be possible for them to have low levels of critical thinking disposition.

When the California Critical Thinking Dispositions are compared according to

the gender variable, a statistically meaningful difference was found out in the truth seeking sub dimension ($p<0,05$). Humankind is always in the struggle to find the truth by following the ideal and to turn the unknown into known as it is in their nature. Within this context, the students developed alternative ways to help them reach the truth through the difficulties and problems they face or to get to the source of the problem through a different perspective. In addition, the self-confidence that the students get from the culture of sports and their being forced to think and decide fast and reach the result during the complex situations in the sportive activities might be the reason behind this meaningful difference. When the California Critical Thinking Dispositions are compared according to the classes, it was found out that there was

a significant difference between the 1st and the 2nd, and the 1st and the 3rd grades in the systematicity sub-scale ($p<0,05$). The reason for this difference can be the result of the students' getting to know their environment and the school better, analyzing the attitude of the instructors better, studying more systematically thanks to their previous learnings as they get to the higher classes.

This study was applied to the teaching department students and different results can be gained by applying it to the students in the other departments. At the same time, different results may be found by applying different cognitive, intelligence, and critical disposition scales. Finally, the inventory can be applied to the students in other departments and comparisons can be done with the present study.

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