

Full Length Research Paper

Investigation of critical thinking attitudes and reading habits of teacher candidates

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This study aims to define reading habits and critical thinking levels of pre-service teachers, who study at departments of classroom and physical education and sports teaching, and presenting the differences between these. The variables of the research were designed in accordance with descriptive research model. In 2016 to 17 academic year fall semester, the universe of the research consists of 250 students. All of these students study at Mugla Sitki Kocman University, and their departments are Classroom and Physical Education and Sports Teaching. The variables of the present research were tested for normality, and it was found that the variables were non-normally distributed. The differences between variables were tested ($p=0.05$) by using Mann-Whitney U test is one of the nonparametric tests. In order to define their reading habit and critical thinking levels, the attitude scale towards reading habit and California critical thinking dispositions inventory (CCTDI) were employed. As a result of this study, pre-service classroom and physical education teachers have medium level critical thinking; pre-service classroom teachers' level of critical thinking have higher than pre-service physical education and sports teachers; and significant difference among genders from the point of reading habit levels of teacher candidates were found.

Key words: Teacher candidates, pre-service teachers, physical education and sports teaching, reading Habits, critical thinking

INTRODUCTION

The profession of education is getting more difficult everyday depending on the multitude and variety of human needs, and every new acquired skill requires the acquisition of one or several new skills right after it is acquired. The importance of educational institutions today is increasing with the education becoming a life-long process.

Additionally, the requirements of the modern world necessitate that teachers today have thinking skills. Instead of transferring knowledge, learning to think is

more important now in education. Accordingly, modern schools try to raise individuals who can think, criticize, produce and know the ways to access knowledge, and educational programs are designed in a way to make students acquire thinking skills (Seferoglu, Akbiyik, 2006). The English word "critical" was gotten from the Greek word "kritikos". It means judging and differentiating, and was borrowed by Latin as "criticos" and then spread to other languages. Criticizing refers to evaluating something with its good or bad aspects. The concept of critical

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thinking occurred many ages ago, in fact that it dates back to Socrates.

Whilom, this concept referred to logical thinking with the purpose of guiding our behaviours through philosophy. The concept of critical thinking, which was considered as the defining of incidents correctly from time to time, started to be defined in a more comprehensive manner afterwards (Kaya, 1997).

The process of critical thinking has been named by different terms in the related literature. For instance, Aydin (2003), used the term “the stages of critical thinking”, Cuceloglu (1995) preferred “critical thinking for problem solving”, Ennis (1985) called it “the process of making decisions on what to believe in or what to do”, while Nosich (2012) named the process as “the components of logical thinking”, Paul and Elder (2006) said “what needs to be known while reasoning” and Starkey (2010) called it as “the conditions for critical thinking”.

Related literature provides many definitions for critical thinking. Many researchers, in their variety studies, focus on dimensions of critical thinking. According to Watson and Glaser (1964), “critical thinking is defined by the assumptions, values, attitudes and beliefs of the individuals. Almost all of these approaches handle critical thinking as a process starting in the mind and ending as a behaviour”. Based on it, the dimensions of critical thinking are handled at five points as; inference, realization of the theories, deduction, interpretation and evaluation of discussions (Carter, 1973).

The process dimension of critical thinking is highlighted by Ennis (1985), and he makes a mention of three different aspects of critical thinking as; development of information, questioning, and judgement, and offers that it is reflective and logical thinking. Hudgins and Edelman (1986) emphasize the critical thinking's dimension of finding proof before accepting some consequences. Similarly, variety researchers, like Halpern (1989), Paul (1988), Kazanci (1989), Cuceloglu (1993) and Mcknown (1997) have spoken of critical thinking's dimension in their studies.

Karaduz (2010), Sen (2009) and Cetinkaya (2011) have also showed that there was a relationships between linguistic skills and critical thinking. On the other hand, they tried to define Turkish language teacher candidates remarks on critical thinking dispositions, and tried to find out whether critical thinking levels varied by some variables.

Turnuklu and Yesildere (2005) studied the critical thinking dispositions of teacher candidates, besides some researchers like Ekinçi (2009) and Dutoglu and Tuncel (2008) investigated the relationships between critical thinking dispositions and some variables. Additionally, Demirkaya (2008) studied the use of critical thinking in lessons, Cokluk et al. (2005) in their study on university students, investigated the relationships between anxiety

and critical thinking, Akbiyik (2002) studied the correlations between critical thinking and academic achievement, and Sacli and Demirhan (2008) defined and compared the physical education teacher candidates' critical thinking levels.

The present researches have showed that the use of standardized tests has little contribution to in-class assessment processes. Therefore, teachers need to make use of different methods to assess and develop their students' critical thinking skills in in-class assessment processes. This process starts with the qualified programs for courses. Guzel and Berberoglu (2013) reported that a common language should be developed for a well sampling of mental processes used for expressing attainments in course programs, pre-service teachers, who study at faculties of education, should be well-informed and equipped about the thinking processes, and therefore the content of pedagogical formation courses should include activities on the theory and the practice of mental processes.

By reading books, humankind increased their knowledge and culture, mapped out new routes with the information obtained from the books, developed new methods and techniques, in short created a new world. In this context, even there are numerous ways and methods to access information in the modern worlds, most of these are based on reading, which is the basic way of obtaining information (Keskin, 2015).

Individuals, who can achieve the process of reading, which is a necessity in order to keep up with the modern world, and maintain life-long learning, are those who can think critically, establish effective interpersonal relationships, and study, understand and interpret the outer world (Aciyan, 2008). The primary objective of educational systems is creating a society formed of the individuals with these qualities (Bayansalduz, 2012; Akpinar et al., 2012; Toros et al., 2010).

The joy and habit of reading should be developed first in order to develop these skills at desired levels (Akca, 2008). Reading is defined as a complex process creating new thinking in the mind, and involving various development stages (Gecgel and Burgul, 2010). Habit is a form of learnt characteristic behaviour reinforced to occur in any case automatically. When reading, which is the basic way to access knowledge, becomes a habit, the concept of “reading habit” occurs. Reading habit indicates as individuals' realizing the act of reading in a life-long, constant, regular and critical manner, as a result of considering reading (Yilmaz et al., 2009).

METHODOLOGY

The present research employed descriptive method in order to define critical thinking levels of two different departments' students. The universe of the research consists of 250 students. All of these students study at Mugla Sitki Kocman University, and their departments are Classroom and Physical Education and Sports

Teaching in 2016 to 2017 academic years fall semester. The present research was designed in accordance with descriptive research model. As the variables of the present research were found to be non-normally distributed, the differences between variables were tested by using Mann-Whitney U being one of the nonparametric tests, and the significance level was determined as 0.05. The following scales were used in order to identify reading habit levels and critical thinking levels of teacher candidates.

California critical thinking disposition inventory (CCTDI)

The California critical thinking disposition inventory is the premier scale for measuring the dispositional viewpoints of critical thinking, and it was developed in 1990 by American Philosophical Association. The CCTDI is designed for use with the general adult population, and it is specifically prepared to make decisions using critical thinking and measure the disposition to connect problems. It must be in tendency to think critically as well as have the skills to do so. The original form of the CCTDI is an inventory while the Turkish form was organized as a scale. The scale has seven sub-scales (maturity, critical thinking, truth-seeking, inquisitiveness, self-confidence, and open-mindedness, as well as dispositions to analyze and systematize) that were defined hypothetically and tested psychometrically, and consists 75 items (Kokdemir, 2003; Facione et al., 1994; Chen and Lin, 2003). The validity-reliability studies of the CCTDI, with its original form in English, were conducted on 913 students, who studied in Ankara, Turkey. During Turkish adaptation studies, 24 items were foreclosed from the scale, as the remaining 51 items were considered to be more representative (Kokdemir, 2003).

The attitude scale towards reading habit

Gomleksiz (2004) developed the attitude scale towards reading habit, and it consists of 30 items scored on five-point Likert type scale. The scale was developed based on related literature, student remarks and expert opinions. Data obtained from 197 students, who studied at Firat University, Faculty of Education, were analysed with factor analysis method. According to the analyses, the total of 30 items, 21 positive and 9 negative, were selected, and the Cronbach Alpha reliability coefficient of the scale was calculated as 0.88. KMO value of the scale was found as 0.83, and Bartlett test value was 2202.200. The attitude scale towards reading habit is a single dimensional scale, and measures students' characteristics related to reading habit.

FINDINGS

Among the participants of the present research, 63.6% of the physical education teacher candidates were female, and 35.8% were male; while 54% of classroom teacher candidates were male, and 46% were female.

In terms of the participants' place of settlement before university education; it's shown that the pre-service physical education teachers lived 18.7% in villages, 21.9% in districts, 15% in cities and 44.4% in metropolitans. As for the pre-service classroom teachers, 7.9% lived in villages, 33.3% in districts, 42.9% in cities and 15.9% lived in metropolitans. The participants were asked whether they chose the profession willingly and

81.8% of the physical education teacher candidates stated that they chose willingly, while 18.2% didn't. As for the pre-service classroom teachers, 93.7% stated that they chose willingly, while 6.3% didn't.

According to the perceptions of participants, 1.1% of the pre-service physical education teachers had very low, 10.2% low, 62.6% medium, 24.1% good and 2.1% have high incomes. As for the pre-service classroom teachers, 1.6% had very low, 6.3% low, 61.3% medium, 22.2% good and 7.9% had high incomes. Table 1 has shown that both departments similarly have medium level of critical thinking.

Table 2 has shown that there is a significant difference between classroom teacher candidates and physical education teacher candidates in critical thinking levels ($p < 0.05$). Besides, Table 2 has also shown that there is a positive correlation ($p < 0.05$) between reading habit levels and critical thinking levels of physical education teacher candidates. That is, reading habit levels of teacher candidates increase as their critical thinking levels increase.

In the Table 3, it has shown that there is a significant difference ($p < 0.05$) in reading habit levels of pre-service teachers according to their genders. Table 4 has shown that any significant differences about critical thinking levels of pre-service teachers was unseen between their genders ($p > 0.05$).

CONCLUSION AND SUGGESTIONS

Many previous researches have reported that critical thinking education should be skill-based. As a result of this study, there is a significant difference between critical thinking levels of pre-service classroom teachers and physical education teachers. Accordingly, pre-service classroom teachers have higher levels of critical thinking than pre-service physical education and sports teachers. Similarly, Kirmizi et al. (2014) found that pre-service classroom teachers had higher levels of critical thinking dispositions, which is in agreement with the related finding of this study.

According to the obtained findings, pre-lesson preparations of especially the male teachers should include the use of interactive materials, the study of teacher resource books, the use of visuals, the study of attainments, the use of secondary resources, and the agenda and the contemporary.

Ozcan (2007) reposted a significant difference between critical thinking scale scores of control and experiment groups, in favour of the experiment group, and Canturk et al. (2009) also reported that there was a significant difference in critical thinking skills of two student groups, one of which was taught with problem-based learning method, and the other with traditional method, in favour of the first group.

Table 1. Critical thinking levels of pre-service classroom and physical education teachers.

Variable	Pre-service physical education teachers	Pre-service classroom teachers
N	187	63
A. Average	166.0642	175.4444

Table 2. Mann-Whitney U test results of critical thinking levels of departments.

Department	Critical thinking level			
	N	μ	Z	p
Pre-service physical education teachers	187	117.59	-2.979	0.003
Pre-service classroom teachers	63	148.97	.	.
Total	250	.	.	.

Table 3. The difference in reading habit levels of pre-service teachers across genders.

Gender	N	Mean rank	Mann-Whitney U	p
Female	63	79.34		
Male	73	61.22	1989.3	0.007
Total		136		

Table 4. The difference in critical thinking levels of pre-service teachers across genders.

Gender	N	Mean Rank	Mann-Whitney u	p
Male	73	65.71		
Female	63	71.73	2096.0	0.374
Total		136		

Bagdat (2009) observed such skills as taking the text from different aspects, interpretation, accepting or rejecting the suggested idea among students, who acquired critical thinking skills. Additionally, they used pre-test data for the group, who acquired critical thinking skill, and reported that they developed analysis, synthesis and evaluation skills.

Scientific researches on the subject matter reported that skill-based teaching of critical thinking resulted in significant differences between other teaching methods. Accordingly, critical thinking skills of pre-service physical education and sports teachers can be developed through problem-based education.

On the other hand, pre-service physical education and sports teachers and classroom teachers will encounter differences and difficulties in critical thinking teaching practices when they start their service, due to differences

in critical thinking levels, branches, classes, and the educational models at the institutions they will serve at. For this reason, they should be aware that the function of teaching is not only providing information, but also teaching thinking, or critical thinking more accurately. Critical thinking levels of teachers will affect their students. For this reason, it will be beneficial that reading habit is adopted and reading is loved at primary education period, parents are provided with seminars on the benefits of reading, and students are encouraged to read.

In order to develop critical thinking at faculties of education, in class activities can include discussions, expressing opinions, writing projective essays, debates on a selected topic, ordering and choosing between different opinions in discussion processes, inferring, defining objectives and designing exercises for attaining

the objectives, detecting subject-verb disagreements in opinions and designing activities for correcting these disagreements, practicing on main and supportive ideas, and developing visual reading.

Besides these activities, creating concept maps, discussing on created concept maps, drawing opinion flow charts, creating decision trees, comparing between the advantages and disadvantages of different opinions, organizing brainstorming activities, making use of six-thinking-hats, comparing cases, organizing holistic and detailed evaluation activities, organizing outline and key word activities, designing problem solving activities, attending in summarizing and drafting activities, comparing between costs and benefits can contribute to observing and developing of the critical thinking styles which can be in the blind spots of standard tests.

Further studies should be conducted on broader samples with different variables, in order to obtain more data to be used to develop critical thinking skills among pre-service physical education and sports teachers and classroom teachers.

CONFLICT OF INTEREST

The author has not declared any conflict of interests.

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