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Social studies teacher candidates’ critical thinking skills

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Abstract

The purpose of this study is to determine social studies teacher candidates' critical thinking skills. This study is a survey model. The study is a descriptive field research focused on finding out interrelations. The Cornell Critical Thinking Skills Test-Level X (CCTTLX) was used to measure critical thinking skills of students. In this research, the data obtained were analyzed using t-test and ANOVA. The study group of this research is formed of 142 social studies teacher candidates studying at a state university in Turkey. The research was carried out in 2012 spring semester. At the end of this study, important information was obtained about social studies teacher candidates’ critical thinking skills.

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1. Introduction

According to the dictionary of Turkish Language Society (2005) thinking is, defined as “investigating, comparing and creating opinions by making use of the detected similarities, developing cognitive skills, analyzing, comparing various information to reach a conclusion.” (p.592) Thinking is an indispensable part of a human being. Thinking is also a skill which can be taught, learned and improved. Thinking is primarily a skill of understanding the existing situation and then determining the relations among the elements of the situation and deriving some meaning from these relations. If thinking ability is used well, it becomes possible to create products having general validity. There are important differences between our thinking style in our daily life and our scientific thinking style. One of the most prominent functions of educational institutions is to help people to improve their scientific thinking skills (Güleren, 2007).

Thinking activity makes people feel the sense of freedom and joy of discovering something. In addition, thinking is a phenomenon integrated with the senses. In this respect, thinking is the basis and source of life (İbşiroğlu, 2002).

According to Cüceloğlu (1996), thinking is an active, target-oriented and organized cognitive process carried out to assign a meaning to a given situation. Critical thinking, on the other hand, “is an active and organized cognitive process carried out to understand ourselves and familiarize ourselves with what is happening around us by being aware of our own thinking process, considering others’ thinking processes and applying what we have already learned.” Moreover, it is reaching conclusions based on observations (Aydı, 2006) and information and logically deciding what to believe or not (Norris, 1985).

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With the initiative of APA in 1990, a series of studies were carried out with the participation of 46 theoreticians in America and Canada and they came up with a definition of critical thinking “It is an individual’s making conscious judgments towards analytic evaluations and expressing these judgments in order for this individual to decide what to do and what to believe.” (Akbıyık & Seferoğlu, 2006).

In all the definitions given for critical thinking, it is agreed that it is a higher level of thinking emphasizing the skills and tendencies of obtaining information, comparing, evaluating and utilizing it (Aybek, 2007). Critical thinking meaning impartial, objective and profound thinking is the most advanced form of thinking. Critical thinking serves the function of a sieve enabling you to select and evaluate freely (İbşiroğlu, 2002).

Critical thinking is a purposeful, logical and target-oriented orientation. This type of thinking encloses problem solving, deduction formulation, probability calculation and decision making (Akar, 2007).

In 21st century, thinking itself is not considered to be an adequate skill and higher level of thinking skills are more emphasized. Improving critical thinking skills of learners should be one of the most prominent objectives of education (Gülveren, 2007; Çokluk & Yılmaz, 2006). Critical and creative thinking can also serves the function of a guidance leading individuals to solutions of social problems. It is impossible to transfer ever-increasing information accumulation by means of education. It is necessary for individuals to acquire information and find solutions to their problems on their own. Hence, critical and creative thinking is of paramount importance. In an information society, students should be informed about different discourses and evaluate them critically. In order for students to have access to realistic information, they should know how to compare different perspectives. Students should acquire the skills necessary to think broadly about an issue and to make use of information from different fields to solve any problem confronted in any specific field. Critical thinking has some elements such as focusing on an issue, analyzing discussions, asking explanatory and challenging questions and responding these questions, questioning the reliability of a source of information, judging the accuracy of data and reaching conclusions, evaluating predictions and communicating with others (Aybek, 2007).

Development of learning and teaching depends on the development of teachers and students’ critical thinking skills (Gülveren, 2007). Today, the characteristic most strongly emphasized by educators is not getting higher scores from standardized tests. What is more important is students’ having skills such as thinking mathematically, finding scientific solutions to problems, reasoning based on historical and geographical information, viewing things from an aesthetic perspective, reading critically, writing effectively, and carrying out comprehensible dialogues (Gomez, 2007).

The course of social studies is a type of course including many aspects of social life. Social studies course is expected to help students get ready for social life, actualize their social existence, acquire qualities required to be a good citizen, develop their critical thinking skills, decision making skills, improve their social participation skills, learn the methods used by social scientists while producing information, be effective and productive in social life, and learn their rights and responsibilities (MEB, 2005; Erğlu, 2008; Ata, 2007). Within the framework of this course, students can understand the influences of past events and figures on today’s world. Social studies course can contribute to students in terms of attaching greater importance to other people, developing empathy, and being respectful and tolerant to the members of other life styles and cultures. Moreover, it may help students develop some opinions about human systems such as economy, culture and state, improve their problem solving, critical thinking and creativity skills, understand how people communicate with each other, and construct a perspective of future (Yılmaz, 2006).

According to Kavcar (1999), a qualified teacher “is the one having mastered the skills and knowledge required in his/her subject area, equipped with the pedagogical knowledge of the profession, being able to think, question and criticize, open to development and innovations.” Such teachers are needed to enhance the quality of education and create a quality society.

2. Method

The present study employed the survey method. The study aimed to determine the critical thinking levels of the students and investigated the effects of the independent variables (gender, grade level) on the dependent variable.
(level of critical thinking skill). The study group consists of 142 pre-service teachers attending Social Studies Education Program of a state university in Turkey in 2011-2012 academic year.

CCTTLX is a measurement scale developed by Ennis and Millman (1985, as cited in: Kayagil, 2010). CCTTLX is a measurement scale consisting of totally 71 multiple-choice items each of which is with three options. In the induction dimension, there are 23 items, in the judging the reliability of the assertions dimension, there are 24 items, in the deduction dimension, there are 14 items, in the dimension of defining the assumptions, there are 10 items. The administration time of the scale is about 50 minutes for secondary school or tertiary level students (Ennis, 2006, as cited in Kayagil, 2010).

3. Findings

Table 1: Social studies teachers candidates’ levels of critical thinking skills the results of t-test for differences according to gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>( \bar{X} )</th>
<th>Sd</th>
<th>Df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>82</td>
<td>30.0854</td>
<td>8.14104</td>
<td>139</td>
<td>1.252</td>
<td>.213</td>
</tr>
<tr>
<td>Male</td>
<td>59</td>
<td>31.8983</td>
<td>8.93983</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The t-test results presented in Table 1 reveal that the critical thinking levels of the social studies pre-service teachers do not significantly vary depending on the gender variable \( [t_{(139)}= 1.252; p<.05] \). The mean value of the critical thinking scores of the female participants was found to be (\( \bar{X} =30.0854 \)) And the mean value of the critical thinking scores of the male participants was found to be (\( \bar{X} =31.8983 \)). In light of these findings, it can be argued that there is no significant difference between the female and male participants in terms of their critical thinking levels.

Table 2: Social studies teachers candidates’ levels of critical thinking, the results of one-way analysis (ANOVA) for differences according to grade level

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
<th>Significant difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1224.568</td>
<td>3</td>
<td>408.189</td>
<td>6.329</td>
<td>.000</td>
<td>1-2</td>
</tr>
<tr>
<td>Within Groups</td>
<td>8900.031</td>
<td>138</td>
<td>64.493</td>
<td></td>
<td></td>
<td>1-3</td>
</tr>
<tr>
<td>Total</td>
<td>10124.599</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of the variance analysis presented in Table 2 show that the social studies pre-service teachers’ critical thinking levels significantly vary depending on the grade level variable \( [F_{(3-138)}= 6.329; p<.05] \). In order to determine between which groups is this significant difference, Tukey HSD multiple-comparison test was carried out. According to the results of multiple-comparison test, a significant difference was found between the mean value of the first year students (\( \bar{X} =27.66 \)) and that of the second year students (\( \bar{X} =32.86 \)) favoring second year students. Moreover, a significant difference was found between the mean value of the first year students (\( \bar{X} =27.66 \)) and that of the third year students favoring the third year students (\( \bar{X} =34.97 \)). In light of these findings, it can be argued that the critical thinking levels of the second and third year students are higher than that of the first year students.

Table 3: Descriptive data about of class-level variable

<table>
<thead>
<tr>
<th>Class</th>
<th>Grade level</th>
<th>N</th>
<th>( \bar{X} )</th>
<th>Sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>1</td>
<td>50</td>
<td>27.66</td>
<td>7.89</td>
</tr>
<tr>
<td>Second</td>
<td>2</td>
<td>36</td>
<td>32.86</td>
<td>7.42</td>
</tr>
<tr>
<td>Third</td>
<td>3</td>
<td>30</td>
<td>34.97</td>
<td>9.20</td>
</tr>
<tr>
<td>Fourth</td>
<td>4</td>
<td>26</td>
<td>29.31</td>
<td>7.66</td>
</tr>
<tr>
<td>Total</td>
<td>142</td>
<td>30.82</td>
<td></td>
<td>8.47</td>
</tr>
</tbody>
</table>
4. Discussion

In primary school education, teachers may assume important roles in contributing to the development of the critical thinking skills of their students. Hence, it seems to be necessary to instill critical thinking skills in pre-service teachers. In their in-service period, teachers should continue to improve their critical thinking skills. Findings obtained in the present study aiming to elicit the pre-service social studies teachers’ critical thinking skills indicate that in general, the pre-service teachers have “inadequate level” of critical thinking skills.

The mean of the scores obtained by the pre-service teachers participating in the present study from CCTTLX test was found to be lower than 35. Ennis et al. (2005) carried out a meta-analysis of the studies conducted in America and reported that the mean of the scores obtained by the participants of these studies from 71-item CCTTLX test is 35. Therefore, it can be claimed that the critical thinking levels of the participants of the present study are inadequate. This finding concurs with the finding reported by Kürüm (2002). And this may be because of the lack of activities promoting students to think, question and investigate during their schooling.

One of the findings of the present study is that gender variable does not significantly affect critical thinking level. This finding is parallel to the findings of some other studies. In studies carried out by Şen (2009), Kürüm (2002), Çekiç (2007), Çetin (2008), Özdemir (2005) and Akar (2007), it was found that gender is not influential on critical thinking skills. In a study by Emir (2012), the mean score of the male students was found to be considerably higher than that of the female students. In addition to this, there are some studies reporting significant differences in critical thinking skills favoring female students (Gülveren, 2007; Yıldırım, 2005; Zayif, 2008). There is a need for novel research in this field.

When the students’ critical thinking skills were evaluated in relation to grade level variable, significant differences were found between the critical thinking levels of second and third year students and that of the first year students favoring the second and third year students. This leads us to believe that university education has a positive contribution to the development of critical thinking skills. However, the findings are inadequate in general. Emir (2012) reported that the critical thinking level of university students is medium. Hence, the number activities performed in university education to enhance critical thinking should be increased.

When the research looking at the relationship between critical thinking level and the grade level is investigated in literature, mixed conclusions can be reached. Akar (2007) and Gülveren (2007) carried out a study with university students and they found that critical thinking skills of first and second year students are better and with increasing grade level, critical thinking skills start to deteriorate. Kürüm (2002) also stated that critical thinking skills of pre-service teachers vary depending on their age and younger students have better critical thinking skills. Emir (2012), on the other hand, reported that with increasing age, critical thinking skills decrease.

When the results reported in the literature are analyzed, it becomes clear that more research should be conducted on the relationship between the age and critical thinking skills.

When the findings reported in the present study are compared with the results of recent studies, it is seen that they are supported by some studies but do not concur with some others. Hence, it can be concluded that which variables affect critical thinking skills and at which directions they are affected by these variables should be investigated through more comprehensive studies.

In light of the findings and results of the present study, these suggestions can be made to improve the critical thinking skills of social studies pre-service teachers: more activities aiming to improve critical thinking skills should be incorporated into the courses taken by social studies pre-service teachers. Pre-service teachers should be provided with opportunities to apply methods and techniques of critical reading, writing, listening, observing and communicating.

The faculty members working at education faculties should carry out appropriate activities to help students improve their critical thinking skills. Which factors affect critical thinking skills and at which directions they are affected by these factors should be the research issue of more comprehensive studies using various measurement tools.

More information should be provided about how to instill critical thinking skills in education programs. Some works can be done to raise parents’ consciousness of how to improve children’s critical thinking skills. In addition,
some activities should be developed to show pre-service teachers how to use their critical thinking skills for not only academic matters but in every part of their life.

Teachers should be informed about how to teach and which methods and techniques to use while teaching critical thinking skills both during their pre-service training period and throughout their professional career so that they can educate their children is such a way that they can critically think as stated in the 2005 Social Studies Program and Booklet (Elementary Social Studies Program, 6th - 7th grade).

References

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