

SOCIAL EMOTIONAL LEARNING AND CRITICAL THINKING DISPOSITION

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Abstract: The objective of this research is to investigate the correlations between social emotional learning and critical thinking. The research involved 289 university students. Social emotional learning scale and Critical Thinking Disposition Scale were used. To determine the correlations between social emotional learning and critical thinking, correlation analysis and structural equation modeling were applied. According to the research findings, critical thinking and social emotional learning were found to correlate significantly positively. The findings indicated excellent fit ($\chi^2 = 782.15$, $df = 427$, $p = .00$, $RMSEA = 0.054$, $NNFI = .91$, $CFI = .92$, $IFI = .92$, $SRMR = .063$). According to the results, critical thinking was predicted positively by social emotional learning.

Key words: social emotional learning, critical thinking, path analysis

Introduction

Social Emotional Learning

Social emotional learning not only increases individuals' academic performance but also provides individuals with adapting to changes in today's globalization, and enables them to gain lifelong learning skills (Lindsay, 2013). Social emotional learning is described as having a capacity to define and regulate one's own emotions accurately, improving problem solving skills, and a skill to establishing good relationships with the people around. At the same time, these skills refer to competence that all students should have (Zins & Elias, 2007). Social emotional learning improves attitudes, skills, and behaviors that are necessary for students to establish healthy relationships with their peers and teachers, and to work together ef-

ficiently. These are empathy, respect, cooperation, regulating emotions, self-control, goal setting, critical thinking and problem solving skills (Varela, Kelcey, Reyes, Gould, & Sklar, 2013). According to Elias et al. (1997), social emotional learning is an integration process of thinking, feeling, and behaving in order to be aware of oneself and the people around, to manage one's and others' behaviors, and to take responsibility of one's own decisions (Brackett & Rivers, 2014).

Social emotional learning has five dimensions (CASEL, 2003): Self-Awareness: knowing one's own feeling, evaluating one's own competence realistically and developing self-reliance. Social Awareness: understanding other people's emotions, comprehending their points of view by respecting different opinions, and interacting with them positively. Self-Management: managing emotions to do something easily, being persistent with accomplishing a goal, not losing ambition

when confronted with troubles, and continuing to work. Relationship Skills: using emotions to communicate effectively, maintaining this communication healthfully and in cooperation, being resistant to negative social pressure, trying to resolve conflicts, and asking for help when needed. Responsible Decision Making: considering all possible factors when making a decision, reaching appropriate conclusion by taking into consideration different points of view, and taking responsibility for decisions.

Social emotional learning competencies that are composed of five dimensions also help students develop lifelong learning competencies, which include higher order thinking skills such as problem solving and critical thinking, academic and professional skills such as organization and team work, and life skills such as citizen consciousness and following social events. Today, those competencies are defined by education specialists and employers as important skills that bring success after graduation and at a work place (Dymnicki, Sambolt, & Kidron, 2013). As Manning (1993) stated, social emotional learning is important especially for young adults. Recently, a need has arisen for individuals' hypothetical, reflective, critical thinking, moral and ethical reasoning skills to improve. In this process, social emotional learning makes a contribution to the development of these skills (Taylor & Larson, 1999).

In the social emotional learning approach, alternative thinking strategies also exist. Alternative thinking strategies are derived from a dynamic model that comprises a successful operation of affective, behavioral, and cognitive systems in cooperation. These systems include social competencies as well. Alternative thinking strategies are used in

order to develop individuals' social emotional competencies, prevent behavioral problems, develop critical thinking skills and enrich the classroom environment (Brackett & Rivers, 2014). Social emotional learning skills are also called life skills. Life skills are defined as critical thinking, coping with stress, emotion regulation, effective communication and self-awareness in order to cope with social problems, prevention of social differentiation and injustice, expression of oneself, decrease of prejudice against different viewpoints and thoughts, and increase of understanding (UNICEF, 2015).

Critical Thinking

Critical thinking has been used in education for 40 years. It is important for young adults to create awareness and develop skills in order to cope with recent problems of the world. Critical thinking has different definitions including self-regulated and learning styles (ST, 2013). Critical thinking is a self-regulated process of reasoning that is defined as an individual making a judgment of conclusions by questioning, affirmation, approval and correction in the process of cognitive activities focused on a special purpose. In this process, the individual makes a decision based on logical criteria conceptually and methodologically in demonstrating evidence through interpretation, analysis, evaluation and inference. It is a powerful resource that people can use in education, private and everyday life.

Critical thinkers are searchers, are curious, have information about the topic, are reasonable, are open minded, flexible, objective in evaluation, are aware of personal prejudice, are responsible in decision making, are willing to reevaluate opinions about

the subject, are persistent in researching consequences, and tend to investigate all the details of the topic (Facoine, 1990).

Critical thinking can be explained as representing thoughts judiciously concerning what people do and what to believe. It is a reasoning capacity about emotions. It is reasoning with our emotions and feelings which include our beliefs and actions. For example, when we feel afraid, we believe that we are under threat and we try to escape. In our daily life, critical thinking consistently affects our beliefs and actions directly by the way of evaluating our cognitive skills. It happens by using our feelings and psychological states overtly or covertly. In this way, it establishes a critical connection between intelligence and emotions. It is a reasonable tool used to combine our emotional life with intelligence. It enables us to manage our thoughts, emotions, feelings, and desires (Elder, 1996).

Critical thinking, including skills such as mounting strong arguments, using clear problem defining and solving strategies, organizing information and improving creativity is a process of experiencing self-controlled thought by having objectives. It is a process of reasoning that requires careful investigation of explicitly mentioned and apparent truth. It focuses on questioning beliefs, situations, hypotheses, reasoning methods, actions and experiences (Hanna, 2013). According to Gokhale (1997), critical thinking is defined as a discussion, classifying thoughts, and evaluating other people's thoughts. Bayer (1987) classified critical thinking skills as follows: discriminating provable truths and important assertion, making distinction among expedient information, assertion and justification and determining the accuracy and certainty of a

case, determining the reliability of a source, defining unclear assertion and opinions and unproved hypothesis, revealing prejudice, being aware of logical fallacies and contradictions, and determining the effectiveness of an opinion or assertion (Rudd, Baker, & Hoover, 2000). In short, critical thinking is a problem solving approach by reflecting upon reasonable, purposeful thoughts and emotions. It is a thinking process about missing proofs and information in problem solving (Rudd, Baker, & Hoover, 2000).

The Present Study

Studies have indicated that social emotional learning has an effect on students' attitudes, behaviors, skills and performance. In terms of students' attitudes, the effects of social emotional learning are increases in self-efficacy, developing a positive point of view about school and learning and increases in students' learning motivation and helping them cope with school stress. With regards to behaviors, it facilitates more positive social behaviors, increasing the students' responsibility for their own learning, and decreasing interpersonal conflicts (CASEL, 2003; Johnson & Johnson, 2009; Lindsay, 2013; Siegel, 2005; Zins & Elias, 2007; Zins, Elias, & Greenberg, 2003). Despite these findings, there has been limited empirical research that examines directly individual differences in the function of social emotional learning and critical thinking disposition. Therefore, the aim of this inquiry is to study the relationship between social emotional learning and critical thinking disposition. Based on the reading of previous research, it is expected that critical thinking will be related positively with social emotional learning.

Method

Participants

Participants were selected by using convenience sampling. Moreover, it was explained to the students that completion of the questionnaire was voluntary and that the questionnaire would not be an evaluation tool for them. Questionnaires were completed anonymously and confidentiality was guaranteed. The data were collected from 289 university students. Of the students 171 (59%) were female and 118 (41%) were male; age ranged from 17 to 30 years ($SD = 20.7$).

Measures

Social Emotional Learning Scale (SELS). SELS uses a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). SELS has three sub-scales; task articulation (six items), peer relationships (seven items), self-regulation (seven items). SELS (Coryn et al., 2009) was developed to measure students' social-emotional learning needs. The results were obtained using the original scale with a correlated three-dimensions structure, including the dimensions.

Confirmatory factor analysis of the Turkish version of the SELS showed that the three-factor structure was well fit. Internal consistency coefficient was calculated for reliability of the SELS (Arslan & Akin, 2013). Reliability of the SELS was found .90 for the whole scale. The corrected item-total correlations of SELS ranged from .30 to .65.

Critical Thinking Disposition Scale (CTDS). CTDS uses a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). This scale has two factors: reflective skepticism

(seven items) and critical openness (four items). CTDS (Sosu, 2013) was developed to measure students' disposition to critical thinking. Psychometric assessment was conducted for the CTDS. Firstly, an exploratory factor analysis showed a two-dimensional structure for the CTDS: Critical Openness and Reflective Skepticism. Secondly, a multigroup confirmatory factor analysis (MGCFAs) confirmed the two-dimensional structure with the student groups.

The results of the Turkish version of the CTDS showed that the scale loaded on two structures. Confirmatory factor analysis revealed that the model was well fit ($\chi^2 = 53.24$, $df = 40$, $RMSEA = .040$, $NNFI = .96$, $CFI = .97$, $IFI = .97$, and $SRMR = .048$) (Akin et al., 2015). The reliability of the scale was .68 for reflective skepticism, .75 for the critical openness sub-scale, .78 for the whole scale.

Results

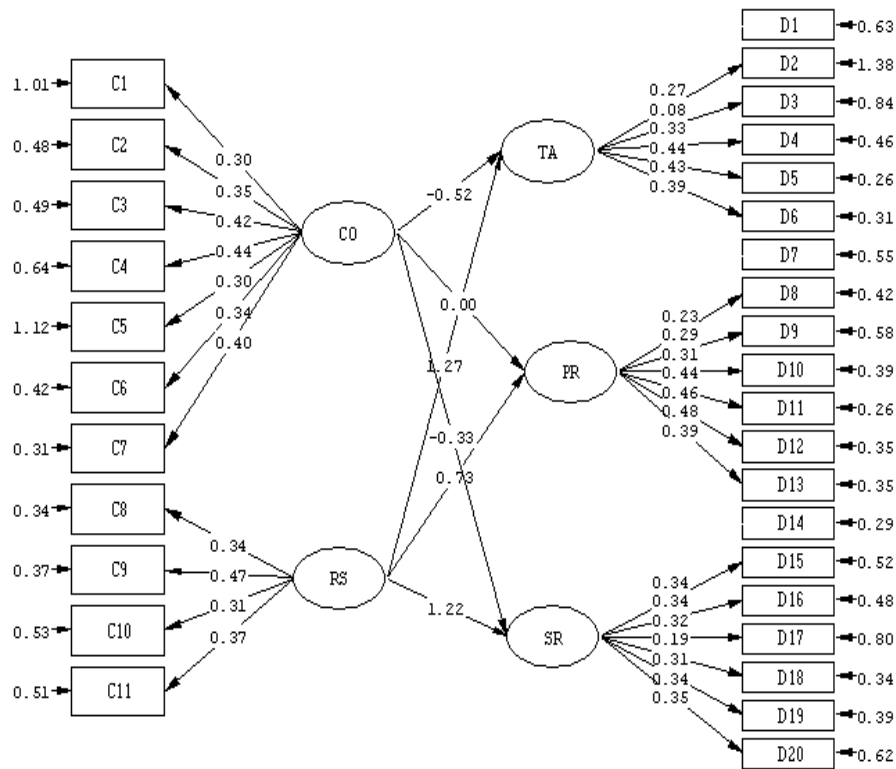
Descriptive Data and Inter-Correlations

Table 1 shows that there are significant correlations between social emotional learning and critical thinking. Dimensions of social emotional learning; task articulation correlated positively with reflective skepticism ($r = .44$) and critical openness ($r = .41$), peer relationships correlated positively with reflective skepticism ($r = .43$) and critical openness ($r = .46$), self-regulation correlated positively with reflective skepticism ($r = .50$) and critical openness ($r = .40$). The results of testing whether critical thinking has a direct effect on social emotional learning are presented in Figure 1.

Figure 1 revealed that the structure is saturated. Therefore, the fit of the structure is perfect ($\chi^2 = 782.15$, $df = 427$, $p = .00$,

Table 1 Descriptive statistics and inter-correlations of the variables

Variables	Task articulation	Peer relationships	Self regulation	Reflective skepticism	Critical openness
Task articulation	1				
Peer relationships	.37**	1			
Self regulation	.40**	.45**	1		
Reflective skepticism	.44**	.43**	.50**	1	
Critical openness	.41**	.46**	.40**	.50**	1
Mean	23.5	28.8	28.5	16.4	27.5
SD	2.8	3.1	2.9	2.0	3.3



Chi-Square = 782.15, df= 427, P-value: 0.00000
 RMSEA = 0.054; RS: Reflective skepticism, CO: Critical openness, TA: Task Articulation, PR: Peer Relationships, SR: Self-Regulation

Figure 1 Path analysis between social emotional learning and critical thinking

RMSEA = 0.054, NNFI = .91, CFI = .92, IFI = .92, SRMR = .063).

Discussion

According to the findings of the current study, critical thinking dispositions affect social emotional learning positively. In other words, individuals who are disposed to think critically also have higher social emotional learning skills. Hence, critical thinking and social emotional learning concepts are related to each other. The path analyses results are not isomorphic, according to findings of studies measuring students' learning needs for social emotional status (Coryn et al., 2009) and critical thinking disposition (Sosu, 2013). However, this situation is normal in studies using preteen populations. Coryn et al. (2009) developed a social emotional learning scale. Similarly, Sosu (2013) established a tool for the evaluating critical thinking dispositions. Results from that study provided support for the CTDS.

Stedman and Andenoro (2007) conducted a study using university students and found a positive correlation between students' critical thinking dispositions and their emotional intelligence levels. Elder (1997) indicated that critical thinking is a key to emotional intelligence and it leads to a rationalist emotional life (Stedman & Andenoro, 2007). Emotional intelligence that involves social and emotional skills is divided into four dimensions: perceiving, expressing and evaluating one's own emotions accurately, using emotions to understand oneself and others, making sense of one's own emotions and information that the individual reaches through emotions, emotion regulation skills for supporting emotional and intellectual development. Emotional intelligence is a sub-dimension of so-

cial intelligence that is defined as an individual's skill of understanding and managing oneself and others. In addition, in the event that individuals are able to apply their emotional intelligence in real life, they will develop problem solving skills (Salovey & Mayer, 1990). Therefore, emotional intelligence includes social emotional competencies, and it is closely related to social emotional learning (Hoffman, 2009).

Similarly, critical thinking skills affect the level of emotional intelligence so that critical thinking and social emotional learning skills can be associated with each other. Gokhale (1995) compared and contrasted critical thinking skills of students who adopted individual work and those who adopted collaborative learning and group work. It was found that critical thinking skills of students who adopted group work were higher than those who adopted individual work. Thus, collaborative learning improves students' critical thinking skills.

Besides, participants in group work condition reported that they took both individual responsibility and the responsibility of others in the group by collaborative learning and this improved their problem solving and social emotional skills. If collaborative learning is thought to be a method in which students establish social relationship together (Johnson & Johnson, 2009; Siegel, 2005; Hendrix, 1999; Oxford, 1997; Slavin, 1995; Sapon-Shevin, 1994), then it can be related to social emotional learning, which includes an individual's problem solving and communication skills (CASEL, 2003; Zins & Elias, 2007).

In the sense of skills, increase in students' attendance, making more effort to succeed, increase in involvement in social activities, and increase in readings outside of school

are the effects of it. From the point of performance, increase in studying skills in mathematics, language, art, and social sciences, increase in problem solving and planning skills, development of reasoning, increase in learning skills, and increase in exam success are the effects of it (Zins, Elias, & Greenberg, 2003). Lindsay (2013) conducted a study which investigated students' opinions about social emotional learning programs. Students reported that social emotional learning improved their personal and interpersonal skills as well as enhancing learning environments positively.

Moreover, it was indicated that social emotional learning also contributed to 21st century skills such as cooperation, creativity, communication and critical thinking. As it was stated, these skills were effective in terms of the individual's adaptation to rapid changes in the globalization process and solving complicated problems that s/he may confront. Furthermore, it gives individuals a chance to develop their world view and explore the effects of different worldviews. It was indicated that social emotional learning and 21st century skills develop naturally and prepare students for life (Lindsay, 2013).

Critical thinking skills are expressed in 21st century skills. Social emotional learning improves students' 21st century skills so that social emotional learning also improves individuals' critical thinking skills. According to a survey conducted with teachers in the United States concerning the significance of social emotional learning, it was deduced that social emotional learning was important for students to improve life skills. Life skills are considered social emotional skills. Teachers thought that by applying social emotional learning programs at schools, students' critical thinking skills would improve,

they could manage real life situations, and they would be successful in academic and business life (Civic Enterprises, Bridgeland, Bruce, & Hariharan, 2013).

Another study, which was conducted with students, families, managers, and teachers, following the application of social emotional learning strategic plan was applied in schools in Montgomery, Alabama, showed that social emotional learning brings students in critical and creative thinking skills, improves basic skills, makes students successful in courses and future career (MCPS, 2012).

Furthermore, it was stated that applying social emotional learning programs that aim to increase students' success in schools and daily life, increase students' academic performance and success. Moreover, creating a secure, nurturant, well-directed environment in which these programs are applied, decreases students' risk taking behavior, and supports their personal development positively (CASEL, 2003). There is a significant correlation between social emotional learning and academic success. In order to maximize students' success potentials in schools and to make them maintain this success lifetime, social emotional learning programs are effective in terms of arranging education in schools (Zins & Elias, 2007).

According to Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011), social emotional learning significantly improves students' social and emotional skills, attitudes, behaviors, academic performance and success. Social emotional competencies are important components of today's education standards. Those competencies are acquired with the help of social emotional learning and improve individuals' life success (Kress, Norris, Schoenholz, Elias, & Seigle, 2004). According to Day and Koorland's (1997)

study, social emotional competencies are determined as higher order thinking skills and problem solving, effective interpersonal communication, decision making, and self-management.

Nowadays, social emotional competencies have been expressed as reading comprehension, critical thinking about the knowledge, effective communication, working in cooperation in problem solving process, and making accurate decisions (Kress, Norris, Schoenholz, Elias, & Seigle, 2004). As researches indicated that social emotional learning helps youngsters to improve their critical thinking and problem solving skills to form their personal value judgment and to make effective and constructive contact with others (Farell, 2013). Skills acquired with social emotional learning seem important not only in schools but also in work place.

As the findings of a survey made in United States showed that according to employers social emotional learning skills were in the lead in terms of necessary skills of the employees. Employers report five important skills about social emotional learning. These skills are professionalism, communication skills, team work and cooperation, critical thinking and problem solving, ethics and social responsibility skills. According to employers, with social emotional learning programs, employees can gain those skills (Casner-Lotto & Barrington, 2006). Researches in different areas showed that social emotional learning not only brings students in skills that makes them successful in education, business and real life but also in critical thinking skills. Social emotional learning and critical thinking skills are closely related to each other. Previous researches about critical thinking and social emotional

learning are in line with the findings of the current study.

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