

**THE CONNECTION BETWEEN SELF-REGULATION AND CRITICAL THINKING
AMONG UZBEK EFL LEARNERS**

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ABSTRACT:The current article investigated the relationship among self-regulation and critical thinking of Uzbek EFL learners. To attain the purpose of the study, 40 EFL learners from three language schools were selected to participate in the study. It was determined that they were at the intermediate-level of language proficiency. The participants were requested to complete the Self-Regulation Questionnaire (SRQ) (Brown, Miller & Lawendowski, 1999) and the California Critical Thinking Skills Test (CCTST) (Facione & Facione, 1992). Data demonstrates that there was a link between self-regulation and critical thinking among the participants. The findings have implications for the sphere of pedagogy as well as further research.

KEYWORDS: Self-regulation, Critical thinking, EFL learners, connection.

1. Introduction

Reforms in education and teaching have indeed recognized the significance of educational psychology in enhancing learning and teaching processes. Educational psychology focuses on understanding how students learn and develop, and it provides valuable insights into effective teaching strategies and student engagement. The emphasis on self-regulation and critical thinking as important constructs for effective and efficient learning is supported by research in educational psychology.

Self-regulation refers to the ability to set goals, monitor one's progress, and adjust strategies to achieve those goals. It involves self-awareness, self-reflection, and self-control. Self-regulated learners are proactive in managing their learning processes and can regulate their motivation, attention, and effort. They are better equipped to overcome challenges, persist in the face of difficulties, and adapt their strategies when faced with obstacles or setbacks.

Critical thinking, on the other hand, involves the ability to analyze, evaluate, and synthesize information in a thoughtful and logical manner. It includes skills such as reasoning, problem-solving, decision-making, and information evaluation. Critical thinkers are able to examine arguments, identify biases, and make informed judgments. They can effectively assess the credibility and validity of information, which is particularly important in today's era of easy access to vast amounts of information.

When self-regulation and critical thinking are combined, learners have a powerful set of tools that can enhance their learning outcomes. A self-regulated individual who can think critically is more likely to approach learning tasks with a strategic mindset. They can set clear goals, plan their learning activities, monitor their progress, and make adjustments as needed. They are also more likely to engage in deep processing of information, actively questioning and evaluating what they are learning.

In addition, in our country, in Uzbekistan, few research studies have been done which have investigated the relationship between self-regulation and CT. In conclusion, the major purpose

of the present study was to examine the relationship between EFL students' self-regulation and CT.

2. Review of the literature

2.1. Self-regulation

Facione (1998) defines self regulation as the ability to self-examination and self-correction that can be as simple as asking “How am I doing?” or “Have I missed anything important?” He believes it improves critical thinking. Zimmerman and Bandura (1994) define self-regulation as learners’ self-generated thought, feelings and behaviors which are organized systematically toward achievement of educational goals. “Although there are various theoretical models of self-regulation, most frameworks assume

that self-regulated learners engage in the use of both cognitive and metacognitive strategies for learning” (Wolters & Pintrich, 1998 as cited in Phan, 2010). Zimmerman (2008) claimed that self-regulation is a proactive process that enables learners to acquire academic skill, for example goal setting, choosing strategies, and self-monitoring of one’s own progress.

Schunk and Zimmerman (2003) believe that self-regulation changes during the life span, like other characteristics of human being. Besides, Azevedo et al. (2010, as cited in Schraw, 2010) claim that self-regulation is a dynamic process that constantly changes over time. So, it needs different varieties of measurement strategies that span all phases of self-regulation as learners’ preparation for learning, construct meaning, monitor, and integrate what they have learned.

2.2. Critical thinking

Nowadays, CT is one of the main concepts under consideration in education. “The concept of critical thinking arises from the practice of reflective thinking, where this construct has been shown to relate positively to students’ academic success (Lee & Loughran, 2000 as cited in Phan, 2010). CT is not a new concept; its root goes back to Socrates’ ideas about teaching approach 2500 years ago. He believed that the realities of things were different from what they were in appearance and to see and understand the reality of things the human mind should be trained. During 15th and 16th centuries a large number of European scholars tried to employ CT about different concepts like human nature, religion, art and so on. They discussed that this kind of thinking needed to analyze evaluate and judge. In the 20th century, CT was investigated more seriously and after that till now its importance is increasingly emphasized (Paul, Elder & Bartell, 1997). Nowadays, it is widely recognized that CT has become a necessary ingredient in all educational levels. Educators emphasized that one of the desirable goals of education is students’ ability to think critically (Hongladarom, 2002).

2.4. Self-regulation and critical thinking

The interrelation between self-regulation and critical thinking has been discussed in recent literature, supporting the notion that individuals who possess both of these features are more effective and efficient learners.

As mentioned before, self-regulation refers to the ability to set goals, monitor progress, and adjust strategies to achieve those goals. Critical thinking, on the other hand, involves the ability

to analyze, evaluate, and synthesize information in a thoughtful and logical manner. When these two constructs are combined, they create a powerful synergy that enhances the learning process.

A self-regulated learner who can think critically is more likely to approach learning tasks with a strategic mindset. They are able to set clear goals, plan their learning activities, and monitor their progress effectively. Critical thinking skills enable them to engage in deep processing of information, questioning and evaluating what they are learning. This active and reflective approach to learning promotes a deeper understanding and retention of the subject matter.

Moreover, critical thinking skills support self-regulation by enabling learners to evaluate the relevance and credibility of information, assess the validity of arguments and evidence, and make informed judgments. These skills help learners navigate the vast amount of information available to them, allowing them to select and utilize the most reliable and valuable sources. By critically evaluating information, self-regulated learners can make more informed decisions about their learning strategies and adapt them accordingly.

Research has shown that individuals who possess both self-regulation and critical thinking skills tend to achieve higher academic performance, demonstrate better problem-solving abilities, and exhibit greater creativity. They are more likely to transfer their learning to new situations and persist in the face of challenges. This combination of skills also contributes to lifelong learning, as self-regulated and critically thinking individuals are equipped to continue learning and adapting in various contexts throughout their lives. There are some theoretical contentions including a relationship between self-regulation and CT in learning. For example, Phan (2010) believed that critical thinking can facilitate self-regulated learning. He added "critical thinking, as a cognitive practice, helps in self-regulation in learning (p.228). He claimed that CT is linked with the applying of higher-order strategies. One of these strategies is self-regulating strategies which used for analyzing information and evaluating class activities.

According to Facione (1998), critical thinkers may have a set of cognitive skills, such as self-regulation, interpretation, analysis, evaluation, inference and explanation. In the field of education and instruction, Astleitner (2002) argued that in order to develop CT abilities effective programs are needed to support selfregulation activities.

Phan (2010) introduced critical thinking as a sub-process self-regulated learning that enables learners to change their mental abilities into performance outcome. In a similar vein, the self-regulation process may enable learners to acquire the academic skill of critical thinking, such as the ability to interpret, analyze, and evaluate (Ignatavicius, 2001, as cited in Phan, 2010). Critical thinking takes part in the cyclic process of self-regulation that included the sub-processes of self-efficacy beliefs, outcomes, intrinsic motivation, and goal setting (Pintrich, 2000; Zimmerman, 2002, 2008). "In this cyclic process of self-regulation the skill of critical thinking also situates in the metacognitive process of self regulated learning"(Phan, 2010, p. 285). Zimmerman (2008) suggested that critical thinking has a main role in the self-reflection phase processes. He explained that the engagement with critical thinking may help learners to take responsibility for their own learning and to improve self-efficacy beliefs when they face with quick decision making.

According to Butler (2002) the first thing for the improvement of self-regulation is developing students' capacity to analyze tasks and to analyze the task they need to employ CT. Watson and Glaser (2002) maintain that the ability to thinking critically is directly related to other abilities, for instance, deduction of factual statements, finding main assumptions and interacting between

them in a series of statements, interpreting and evaluating the context. And all of these abilities are interrelated with self-regulation according to Zimmerman's (2000) definition of self-regulation: "self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals" (p. 14).

The views expressed by Butler (2002), Watson and Glaser (2002), and Zimmerman (2000) highlight the interconnectedness of self-regulation and critical thinking in the learning process.

According to Butler (2002), an essential step in improving self-regulation is the development of students' ability to analyze tasks. This involves breaking down tasks into manageable components, understanding the requirements and objectives of the task, and identifying the strategies and resources needed to accomplish it. Critical thinking plays a crucial role in task analysis as it helps students evaluate the task, identify its underlying assumptions, and determine the most effective approaches to solve it.

Watson and Glaser (2002) argue that critical thinking is directly linked to various cognitive abilities, such as deductive reasoning, identifying assumptions, and evaluating contextual information. These abilities are integral to self-regulation because they allow learners to engage in metacognitive processes. Metacognition refers to the awareness and control of one's own cognitive processes, including planning, monitoring, and evaluating one's thinking and learning strategies. By employing critical thinking skills, learners can effectively regulate their thinking processes, identify potential biases or errors in their reasoning, and make adjustments to improve their understanding and problem-solving approaches.

Zimmerman's (2000) definition of self-regulation aligns with the interconnectedness of self-regulation and critical thinking. He defines self-regulation as self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals. Critical thinking involves engaging in reflective and evaluative thinking processes to achieve higher-order goals, such as making informed decisions or solving complex problems. By employing critical thinking, individuals can assess the relevance and effectiveness of their thoughts, feelings, and actions in relation to their goals, and make necessary adjustments to achieve those goals. In the same line, Ghanizadeh and Mirzaee (2012) also studied the relationship between self-regulation, CT ability in Iranian EFL learners and language achievement. The participants were asked to complete the Watson-Glaser's Critical Thinking Appraisal and the Self-Regulation Trait Questionnaire. And also, the average grade of their previous term is earned. The results showed significant correlation between self-regulation and CT. Besides, the results indicated that self-regulation and CT of EFL learners' can predict the learners' language achievement beforehand to some extent.

3. Method

3.1. Participants

A total of 40 Uzbek EFL learners participated in this study. They were students who were studying English at three different language schools; Everest branch Chilonzor, Everest branch two Yunusobod and lyceum under the name of Uzbekistan State University of World Languages, in the capital city of Uzbekistan, Tashkent. They were randomly selected among the students who were reported to be intermediate-level learners. The TOEFL test was explored to make sure whether the participants were homogeneous in terms of language proficiency. Students whose score were one standard deviation above and one standard deviation below the mean were

admitted to this program and were regarded as intermediate-level proficiency group. The age range participants varied from 15 to 18 years old. There were 29 females and 11 males. They were all native speakers of Uzbek and learners of English as a foreign language.

3.2. Instrumentation

The instruments that were used in this study consisted of: TOEFL Actual test, California Critical Thinking Skills Test (CCTST) (Facione & Facione, 1992), and the Self-Regulation Questionnaire (SRQ) (Brown, Miller & Lawendowski, 1999).

In order to check the homogeneity of the two groups, first an Actual test of TOEFL (2004) was administered. The test involved 140 multiple-choice items. It had 3 parts; the first part was listening comprehension that included 50 items. The second part was structure and written expression including 40 items and the third part was reading comprehension with 50 items. For each question one point was assigned and the time allocated to take this test was 100 minutes; 40 minutes for the first, 25 minutes for the second and 35 minutes for the third part.

To measure Critical Thinking the California Critical Thinking Skills Test (CCTST) (Facione & Facione, 1992, as cited in Rezaee, et al., 2012) was used. The test involved 34 multi-choice questions.

The reliability and validity of the test were reported to be reasonable. In fact, the test coefficient for reliability was .62. (Khalli & Hossein Zadeh, 2003, as cited in Rezaee, et al., 2012). This test measured 5 extra factors including Analysis, Evaluation, Inference, Inductive and Deductive Reasoning.

Another instrument was Self-Regulation Questionnaire (SRQ) (Brown, Miller & Lawendowski, 1999). The SRQ involved 63 items to assess the self-regulatory processes through self-report. These items were developed to answer each of the seven sub-scales of the SRQ. Sub-scales collected relevant information, evaluating the information and comparing it to the norms, triggering change, searching for options, formulating a plan, implementing the plan and assessing the plan's effectiveness that recycled to the first step. Students answered the items by indicating one of five choices ranging from a score of one to a score of five. The Likert scale, ranging from one (strongly disagree) to five (strongly agree), is a commonly used response format in surveys and questionnaires. By using this scale, students can indicate their level of agreement or disagreement with the statements or items related to each sub-scale. The Likert scale provides a structured way to gather quantitative data on individuals' perceptions or attitudes regarding their self-regulation and critical thinking skills.

By administering the assessment tool and collecting responses on the sub-scales using the Likert scale, researchers or educators can obtain data on individuals' self-regulation and critical thinking abilities. This data can then be analyzed to gain insights into the strengths and weaknesses of individuals' skills, identify areas for improvement, and inform instructional strategies or interventions to enhance self-regulation and critical thinking in educational contexts.

3.3. Procedures

As the first step, students who were studying at intermediate-level group in three language institutes were asked to participate in the study. The researcher asked the students not to write their names on the questionnaire so that no one would be aware of what each student's grade

was. Therefore, a code was assigned to each learner. Moreover, the researcher emphasized the importance of the students' honest responses and real grades in reaching reliable outcomes of the study. The participants also were assured that their grades would not be used in any purpose other than this study. The TOEFL test was administered to make sure about homogeneity of students. Students were asked to answer the test in 100 minutes. The result of this test revealed that out of 60 students, 40 students whose score were one standard deviation above and one standard deviation below the mean were homogeneous and chosen as the participants of the study.

As the next phase of the study, both groups were asked to answer the two questionnaires; California Critical Thinking Skills Test (CCTST) and Self-Regulation Questionnaire (SRQ). They were given 50 minutes to answer the CCTST. Then the students rest for 15 minutes and after that they were given 60 minutes for SRQ.

3.4. Data analysis

In the next step, the data was analyzed. The data was analyzed through descriptive and inferential statistics. JASP (Joffrey's Amazing Statistical program were used.).All data were processed using version 17.0 SPSS software. Pearson correlation was used to analyze data to indicate the relationship between self-regulation and CT and, if any, to investigate the reliability of selfregulation and CT questionnaires, Corenbach's alpha formula through SPSS was explored.

4. Results

This part is devoted to the description of the statistical analyses which were performed to answer the question formulated for the purpose of this research. The following analyses were done to answer the research question.

R Q: Is there any relationship between EFL students' self-regulation and CT?

To investigate the relationship between EFL learners' CT and their self-regulation, a Pearson productmoment correlation was applied.

Table 1. Correlations between CT and self-regulation			
	critical thinking		self regulation
Critical thinking	Pearson Correlation	1	.604**
	Sig. (2-tailed)		.000
	N	40	40
Self regulation	Pearson Correlation	.604**	1
	Sig. (2-tailed)	.000	
	N	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Based on table 1, the Sig. is $.00 < .01$. So the results of correlation revealed that there was a significant correlation between CT and self-regulation. Therefore, the fifth hypothesis was accepted.

To investigate the reliability of self-regulation and CT questionnaires the following analysis was done.

Table 2. Cronbach's alpha test

Variables	α
Self regulation	.76
Critical thinking	.71

Based on table 2, Cronbach's alpha (α) for self regulation and CT scales were calculated with the value presented ($\alpha = .76$) and ($\alpha = .71$). In both cases, (α) were higher than .60. It means that the self-regulation and CT questionnaires that were used in this research had acceptable reliable range.

5. Conclusion

The findings of this study proved that promoting EFL learners' CT abilities correlates with the self regulation enhancement in the learners. Therefore, by focusing on activities linked to promoting CT abilities, the learners may improve their self-regulation as well.

The findings of this study provide practical implications and suggestions for EFL learners, teachers, educators and administrators to improve qualities of material, syllabus design and learning processes by cultivating the relationship between CT and self-regulation among EFL students. Furthermore, improving CT and self-regulation may have a great significance in helping learners to be autonomous language learners. Learners and teachers are recommended to develop and integrate the abilities related to self-regulation and CT in and out of the classroom context through different procedures such as self-assessment check list or other self-assessment techniques such as concept mapping, portfolio and journal writing. In conclusion, it is highly recommended that language teachers in English as a Foreign Language (EFL) contexts recognize and emphasize the crucial role of self-regulation and critical thinking in fostering self-directed learning among their students.

By promoting self-regulation, teachers can empower students to take charge of their own learning processes. They can encourage students to set goals, monitor their progress, and make adjustments as needed. Teachers can provide guidance and support in developing self-regulatory skills, such as time management, goal-setting, and self-reflection. This will enable students to become more independent and responsible learners, taking ownership of their language learning journey.

Additionally, integrating critical thinking skills into language instruction can significantly enhance students' language learning outcomes. Language teachers can incorporate activities and tasks that require students to analyze, evaluate, and synthesize information in English. This can involve engaging students in discussions, debates, problem-solving tasks, and authentic language use situations. By fostering critical thinking, teachers enable students to develop their language proficiency and to think critically in English, which is a valuable skill in both academic and real-world contexts.

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