

The Relationship between Language Proficiency and Critical Thinking Skills among Students in English Language Class

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ABSTRACT

This research investigates the relationship between students' English language ability and their critical thinking skills in English language class within the Thai context. The study involves 103 English major students and four English lecturers from the faculty of Education and Humanity and Social Sciences, Thaksin University. The data were obtained from the results of TOEIC Test, Cornell Critical Thinking Skill Test (CCTST), level X, questionnaires, students' semi-structured interviews, and teacher 'individual interviews. The findings of the study revealed that students' English language ability was at low level. 51% of the total students obtained scores of 350-495, which were at the Elementary Proficiency level, 29% were at Memorized Proficiency level. 19% were at 1+ Elementary Proficiency level. As for critical thinking skills, overall, the T- scores in critical thinking skills are mostly 'average' (T 45-54) or 33.98%. By considering individual aspects, the T-scores for Induction, Deduction and Credibility are also 'average' (T 45-54), accounting for 36.89%, 33.01%. and 47.57, respectively, excepted for the Assumption, where the T-scores are at a 'fair' level (T 35-44), representing 34.95%. However, this study demonstrated that critical thinking skill scores show significantly low correlation with language skills scores. A few students with higher ability in the English language were able to use their language advantage to answer the CCTTX. Therefore, more language and thinking skill trainings are necessary and more resources would be needed to find suitable methods in developing language ability and critical thinking skills of the students in the language classroom.

Keywords: Critical thinking skills; Language teaching; Language ability; Cornell Critical; Thinking Test

INTRODUCTION

In recent years, critical thinking has been identified as one of the 21st century skills for students to gather, use and interpret information and knowledge. According to Daniel (2013), critical thinking is integrated as a 21st century skill in educating today's generation of learners. The mental tasks of knowledge work on accessing, searching, analyzing, storing, managing, creating, and communicating information and knowledge are becoming easier and more efficient as our digital tools for thinking, learning, communicating, collaborating, and working become more powerful, integrated, connected, and easier to use. These 21st century skills are helping learners to meet the demands of future workforce requirements effectively and creatively.

In Thailand's education, Office of the Higher Education Commission (2011) has announced plans to urgently develop Thai students' academic knowledge and life skills, saying that these must be urgently developed to meet the future workforce requirements. The ability to speak English and the languages of ASEAN neighbours are identified as essential tools in terms of meeting these future needs. Thailand's Office of the Higher Education Commission

(2011) proposed that not only language ability is essential for the future workforce requirements, but also life skills such critical thinking is highly necessary.

What is critical thinking?

Critical thinking skill is a vital component of our daily lives. It is reasonable and reflective thinking abilities in forming judgment to analyze, evaluate facts and opinions, interpret information, make inferences and solve problems (Ennis, 1996; King, 1995; Norris & Ennis, 1989; Paul, 2005; Walker, 2003). They are essential skills required to succeed in the 21st century (Levy and Murnane, 2004). Critical thinking, first of all, contributes to the effective communication. When we have critical thinking skills, we have the ability to examine real-life issues from multiple perspectives and are able to interact effectively with people we may never meet face-to-face (Levy and Murnane, 2004). Since the effective interaction and expert thinking skills are required in a global marketplace and are essential to a nation's ability to remain competitive in various conditions, critical thinking skills are identified as vital tools in effective communication. Second, critical thinking enables us to be actively engaged in creating our personal and social worlds. Semali (2004) proposed that critical thinking can enhance the development of our own awareness of the assumptions we have about ourselves and others. When we think critically, we can make our own judgments, choices, and effective decisions. Third, critical thinking helps people deal with mental and spiritual questions, and it can be used to evaluate people, politics, and institutions, and to avoid social problems (Hatcher & Spencer, 2005). Lastly, critical thinking helps people solve their problems more effectively. It forces them to look beyond conventional solutions and look for new ideas that can help to efficiently address problems. Wongchareunsuk (2001) asserted that the process of critical thinking links causes and results, and therefore, assists in predicting the future, solving problems, or making effective decisions.

Because critical thinking skills are a crucial tool for living successful lives in the 21st century and in an ever-widening competitive global marketplace, it is essential for students today to develop and effectively apply critical thinking skills to their academic studies, to deal with the changes and problems that they will face, and to the effective decision they will be forced to make as a result of the information explosion and other rapid technological changes (Oliver & Utermohlen, 1995). Thus, a lack of critical thinking skills might affect not only students' academic learning success, but also their personal lives when they graduate, and enter a high competitive global marketplace (Nimkannon, 2007; Rfaner, 2006; The Conference Board, 2006).

In recent years, the development of critical thinking has become widely recognized as a high priority goal at all levels of education. It has seen an explosion of interest among educational policy makers, educators, administrators, and teachers in various disciplines, including in language teaching (Brown, 2004; King, 1995; McPeck, 1981, 1990; Paul, 2005; Penneycook, 1997; Rfaner, 2006; Walker, 2003).

Critical Thinking and Language Teaching

In language teaching, critical thinking is defined as a cognitive skill. It is composed of two notions. They are self-reflecting about language learning and active, persistent, and careful reasoning (Dearn, 2003; Ennis, 1962; 1987; Oxford, 1990; Thadphoothon & Jones, 2002). Critical thinking has been emphasized and implemented during the final decade of the 20th century (Day, 2003).

Based on Johnson and Johnson (1994), critical language thinkers are individuals who can sort "sense from nonsense" (p. 54). To sort senses from nonsense, language learners need the abilities of identifying situations, interpreting information, evaluating arguments, reasoning, and making judgment and decision (Davidson, 1998; Dong, 2006; Hatch, 1983; Thadphoothon & Jones, 2002). Pennycook (1997) also asserts that language learners are

considered critical thinkers when they make sense of the text or discourse. Making sense means finding meaning or coherence and to be logical, justifiable and reasonable on the text or discourse. As Hymes (1974) proposed, a critical language learner needs to have a keen intuitive awareness of or sensitivity to the presence or importance of something and be aware of the language as it is used within the speech community.

As critical thinking is integrated as a 21st century skill into the world language classroom, the traditional roles of the teacher may need to transform, the content used in the classroom may need to change, and the activities in which students are asked to engage may likewise need to shift. The integration of these pedagogical implications into the world language classroom as a means to facilitate the development of advanced levels of language proficiency is also necessary (Daniel, 2013).

Critical Thinking and Language Teaching in Thailand

In Thailand, according to the National Education Act (1999, 2002-2006), there are three objectives in English teaching in the new English curriculum. First, students should be able to use knowledge of English language in communication; understand the culture of native speakers; know the differences between Thai and the English language; be able to use English in studying other subjects; be able to use English for lifelong learning and pleasure; and to use English in their work. Second, students should acquire skills involving communication strategies; thinking skills; critical and creative thinking; self-evaluation; learning skills; knowledge seeking skills; technology skills; and collaborative working skills. Third, the students should have a positive attitude and appreciation for the English language and its culture. To achieve these objectives, the emphasis of the teaching and learning process in the language classroom is placed on communicative language teaching approach, student-centered culture, and the development of critical thinking skills.

Statement of the Problem

In Thailand, according to National News Bureau of Thailand (2016), there are problems in all aspects of Thai education, particularly issues concerning English proficiency and critical thinking. Academic performances of Thai students in English is below standard. Dapong Rattanasuwan (2016) added that Thai students also lack critical thinking skills and discipline. This is in accordance with a number of studies which have demonstrated that students' thinking skills are not successfully promoted (Chaisuriya, 2000; Nimkannon, 2007; Wallace, 2003). Furthermore, these studies revealed that students do not know how to think critically. James (2011) also maintained that many Thai students don't have problem-solving or critical thinking skills, both of which are necessary if they are to compete in the modern world. The research reviewed above coupled with the pressure which will arise from the integration of critical thinking skill as a 21st century skill into the world language classroom and of ASEAN in 2015 point to the urgent need to study whether Thai students have sufficient competencies in the areas of language ability and critical thinking to enter the increasingly globalized workforce of the future.

Thaksin University is one of the leading teaching-oriented universities in the south of Thailand, which borders Malaysia and is in close proximity to Singapore and Indonesia. Its geographical position and its regional significance as an educational institute point are key reasons why it considers that it has an important role to produce graduates who have global skills and can be highly competitive in the world workforce. It is therefore a timely moment to investigate the English language ability and critical thinking skills of language students at Thaksin University.

Purpose of the Study

The purposes of the study were to investigate Thaksin University students' language abilities and their critical thinking skills and to examine whether there was a relationship between their language abilities and critical thinking skills.

Research Questions

To investigate English language ability and critical thinking skills of English language students at Thaksin University, the following three research questions were proposed:

1. What was the level of English ability of the fourth-year English major students at Thaksin University?
2. What was the level of critical thinking skill of the fourth-year English major students at Thaksin University?
3. Was there any relationship between the level of English proficiency and the level of critical thinking skill of the fourth-year English major students at Thaksin University?

METHOD

Participants

The participants in this study were 103 fourth year English language major students from Thaksin University. Thirty-three English major students were from the faculty of Education. Seventy students studied in the English major at the Faculty of Humanities and Social Sciences. These students were selected based on the fact that they have undergone at least three years of university education which was expected as an adequate period to have developed language ability. Also, as the students were in the last year of university education, they were expected to be prepared and equipped with language ability to be ready to join the international workforce. The academic participants were four English teachers at Thaksin University. They were selected on the basis of four criteria; first they obtained a Master's degree in English, Teaching English or Applied Linguistics, 2) had experience in teaching English as a foreign language for at least three years, 3) taught the sample groups of students in the first semester of academic year 2015, and 4) were willing to participate in this study. The total English teacher participants were twenty-seven (Thaksin University Register Office, 2015). Two English teachers including the researcher were teaching at the Faculty of Education, twenty-five taught English at the Faculty of Humanities and Social Sciences were chosen to take part in individual interviews.

Research Instruments

TOEIC Test

The TOEIC test (Test of English for International Communication) was used to assess students' English language ability. The TOEIC test is an English-Language listening and reading focused proficiency test for people whose native language is not English. It measures the everyday English skills of people working in an international environment. The scores indicate how well people can communicate in English with others in business, commerce, and industry. The TOEIC test is a two-hour multiple-choice test that consists of 200 questions divided into two sections: listening and reading sections.

The listening section tests how well the test takers understand spoken English. It consists of four parts and contains 100 questions administered by audiocassette or CD. The test takers will be asked to answer questions based on a variety of statements, questions, conversations, and talks recorded in English. Total time is approximately 45 minutes. The

listening test consists of describing photographs: 10 questions, question-response: 30 questions, conversations: 30 questions, and short talks: 30 questions.

The reading section includes three parts, testing how well the test takers understand written English. The test takers will read a variety of materials and respond at their own pace to 100 questions based on the content of the materials provided to the test takers. Total time for the test section is 75 minutes. The reading test consists of incomplete sentences: 40 questions, text completion: 12 questions, single passages: 28 questions, and double passages; 20 questions.

Cornell Critical Thinking Test (CCTT), Level X

Cornell Critical Thinking Skills Test (CCTST), Level X was an instrument to measure the critical thinking ability of the undergraduates involved in the present study. The CCTT is a standardized test developed by Ennis, Millman, and Tomko (1985) and is based on the developers' conceptual definition of critical thinking as the process of reasonably deciding what to believe and do (1985, p.1). The test is considered suitable to be used in the present study because it is claimed by its developers to be a general critical thinking test which attempts to measure critical thinking skills as a whole (1985, p. 1). Thus, it is an appropriate test to employ in measuring the critical thinking ability of the students in this study. Moreover, the test has been widely used by the educational institutions throughout the world for more than twenty years for assessing critical thinking ability of a group or individuals for the academic purposes or as a criterion for employment. The reliability coefficient of the CCTT Level X ranges from .67 to .90 (Ennis et al, 1985). The present researcher strongly believes that in determining critical thinking ability of individuals, the test administered to the individuals must be in the language that they have competence in so that the scores obtained on the test will not be distorted in any way due to the test takers' deficiencies in the language. Therefore, a test conducted in the national language, that is, Thai, was the most suitable one for Thai undergraduates since the language concerned is the medium of instruction at the public universities and colleges in the country. Furthermore, mastery of Thai at a satisfactory level is a requirement for entry to Thailand universities. For these reasons, the CCTT adopted in the present study was the Thai version of Level X. The test was translated by using Brislin's (1980) back-translation technique and the committee approach (Azlina, 1992).

The CCTT is a 76-item multiple-choice test which is completed within 50 minutes. 5 of the test items are sample items and the other 71 are the real test items that the test takers have to work on. Each test item has three alternative response choices, A, B, and C, respectively. The test is divided into four parts labeled as Induction (23 items), Credibility (24 items), Deduction (14 items) and Assumption Identification (10 items). Each of the test items that are correctly answered is given a score of 1. In this study, the individual undergraduate's total score obtained on the CCTT will be used as a measure of his or her general critical thinking ability; that is, a higher score on the test indicates a better critical thinking ability.

Questionnaires

Questionnaires were designed into two sets. The first set was used to explore students' opinions on their experiences of developing their English language ability. The second set of the questionnaire was employed to investigate students' opinions on their experiences of developing their critical thinking skill and the conceptualization of critical thinking.

Student Semi Structured Interview

Student interviews was organized to get in-depth information related to students' English language learning and students' development of critical thinking skill. The interview

was carried out in Thai language to help students express their valid thoughts, opinions and ideas with regard to critical thinking.

Teacher-Individual Interview

Teacher individual interview was designed for teachers to elicit information relating to the concepts of critical thinking perceived by teachers. These interviews also aimed to gather in-depth information about teachers' knowledge and understanding of teaching critical thinking in the language classroom and the promotion of the students' critical thinking skills in the language classroom.

Procedure

Before collecting data, the letters were sent to the Dean of the Faculty of Education and Humanities and Social Sciences for permission to participate in the study. After permission, collecting data was granted by the dean and faculty, the researcher made a plan with the teacher and student participants about their schedules for collecting the necessary data for the study. Then, the researcher coordinated with the staff at the Center for Professional Assessment (Thailand) and arranged the TOEIC test for the participants of Thaksin University in September, 2015. After that, the researcher organized the critical thinking test with the head of Teaching Liberal Arts and Western language departments. Then the test was arranged as planned that was one month after the TOEIC test. Next, questionnaire exploring students' experiences of developing their critical thinking and English language ability was organized after the taking TOEIC and Critical Thinking Test. After the research obtained the result of critical thinking skills of the students, she administered the questionnaire to the participants as planned. Afterward, student semi structured interview was organized to get in-depth information about students' opinions and experiences of learning English and their exercising or not exercising critical thinking skills in the classroom. Lastly, teacher Individual Interviews were organized to get in-depth information about students' factors affecting students' English ability and their exercising or not exercising critical thinking skills in the classroom. The interviews were arranged after the results of the questionnaire.

Data Analysis

This study used both descriptive and inferential data analysis procedures. Descriptive analysis namely means, standard deviations were computed to provide information concerning the sample and distribution of data and they were also used in the testing of the underlying assumptions of inferential tests employed in the study.

Analysis of Students' Language Proficiency

Students' English language ability was analyzed by the results of the TOEIC test marking based on the general language performance description of the Center for Professional Assessment (Thailand). The language proficiency is classified into seven ranges of English language proficiency levels. They are Level 0: No proficiency, the score range is 10-195. Level 0+: Memorized Proficiency, the score range is 200-345. Level 1: Elementary Proficiency, the score range is 350-495. Level 1+: Elementary Proficiency, Plus, the score range is 500-695. Level 2: Limited Working proficiency, the score range is 700-795. Level 2+: Limited Working proficiency, Plus, the score range is 800-895. Level 3: General Professional Proficiency, the score range is 900-990.

Analysis of Students' Critical Thinking Skills

Students' critical thinking skills were analyzed based on Cornell Critical thinking tests Administration and Manual (2005) and T-score. Interpretation of T-Score is based on Luan

Saiyos and Angkana Saiyos (1996) with the following 5 quality levels: T 65 and above means 'Excellent', T 55 to T 64 means 'Good', T 45 to T 54 means 'Average', T 35 to 44 means 'Fair', and less than T 35 means 'Poor'.

Analysis of Students' Responses to Questionnaires

The data obtained from the first part of the two sets of questionnaires are concerned with the students' opinion and experiences of developing their English language ability and their critical thinking skills. These opinions were tallied for frequency and then ranked on their frequency of occurrence. The data obtained from the second part of the questionnaires were related to the students' comments of the students' English language ability and their critical thinking skills. The comments were grouped on the basis of the commonality in responses and then ranked on their frequency of occurrence.

Analysis of Students' Responses to Semi Structure Interviews

The students' responses, comments and suggestions were categorized into three main themes. The first theme was related to students' understanding of the concepts and the need of critical thinking skills. The second theme was about students' perceptions pertaining to their teachers' techniques of questioning, and the third was concerned with students' rationales for exercising or not exercising their critical thinking skills in the language classroom. After decoding, the students' responses, comments, and suggestions were sorted for recurring themes.

Analysis of Teacher's Responses to Individual Interviews

The teachers' responses, comments and suggestions were analysed by theme analysis to gather in-depth information about teachers' knowledge and understanding of teaching critical thinking and factors affecting the development of students' critical thinking skills in the language classroom, their teaching experiences, how critical thinking affected their instruction and students' learning of language, and how critical thinking is hindered in their language classroom.

RESULTS

In the present study, most students' English ability was at level 1: Elementary Proficiency level. Table 1 presents the levels and General Language Performance Descriptions.

TABLE 1. Level of Students' English Proficiency and General Language Performance Descriptions

Level of Proficiency	Score Range	Number of Students	Percentage
0: No proficiency	10-195	0	0
0+: Memorized Proficiency	200-345.	30	29
1: Elementary Proficiency	350-495	53	51
1+: Elementary Proficiency	500-695.	20	19
2: Limited Working proficiency	700-795	0	0
2+: Limited Working proficiency	800-895	0	0
3: General Professional Proficiency	900-990	0	0
Total		103	100

Based on the analysis according to the general language performance description from the Center for Professional Assessment Thailand, 53 (51%) of the total students obtained scores of 350-495, which were at the Elementary Proficiency level, 30 (29%) were at Memorized Proficiency level. 20 (19%) were at 1+ Elementary Proficiency level. The findings of the study indicated that students' English language ability was low, which was at the Memorized and

Elementary Proficiency level. In the present study, table 2 presents Mean and standard deviation of overall language skill scores.

TABLE 2. Mean and Standard Deviation of Overall Language Skill Scores

	Listening (495)	Reading (495)	TOEIC (990)
n	103	103	103
Mean	235.29	187.04	422.33
Standard Deviation	62.27	64.34	119.29

Table 2 showed that the mean scores for language skills were 422.33, with the standard deviation of 119.29. The Listening mean scores were 235.29, with the standard deviation of 62.27. The Reading mean scores were 187.04, with the standard deviation of 64.34.

TABLE 3. The Number and Percentage of Overall Scores for Language Skills

T-Score	Listening (495)		Reading (495)		TOEIC (990)	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
$T \geq 65$	10	9.71	12	11.65	10	9.71
$T 55 - 64$	14	13.59	18	17.48	17	16.50
$T 45 - 54$	51	49.51	36	34.95	45	43.69
$T 35 - 44$	19	18.45	33	32.04	25	24.27
$T \leq 34$	9	8.74	4	3.88	6	5.83

Table 3 showed that the overall T-scores of Language Skills scores were mostly 'Average' (T 45-54), accounting for 43.69%. By individual aspects, it was found that the T-scores for Listening and Reading were mostly 'Average' (T 45-54), representing 49.51% and 34.95% respectively.

TABLE 4. The Correlation Value of Overall Scores of Language Proficiency and Critical Thinking Skills

	r_{xy}	<i>Sig.</i>
<i>Critical Thinking - TOEIC</i>	.365	.000

Table 4 showed the correlation by Pearson Correlation, it was found that critical thinking skill scores showed a .01 significantly low correlation with language skills scores (Hinkle D. E. 1998, p.118)

DISCUSSION

This study helped portrait English major students' language ability and critical thinking skills. In the study, both students' language ability and critical skills were at low level. According to the semi construct interview, the students accepted that they were not familiar with critical thinking tasks and were not able to demonstrate the expected critical thinking literacy level. They further supported that they did not have adequate ability to understand the differences between logical reasoning and rationalizing; explain their decisions; identify assumptions which require sound reasoning skills or to give reasons even though reasoning is the core of critical thinking. Thus, it is possible to conclude that students' lack of fundamental cognitive abilities and limited experiences on exercising critical thinking have influenced their critical thinking skills. This is in lined with Nurshila Umar Baki et al (2016) that cognitive abilities of students is one of the factor affecting the Malaysian students' ability to display their critical thinking skills.

Another fundamental issue which needs to be addressed in order to explain students' low level of critical thinking skills is classroom instruction. Obviously, teachers can play a significant role in promoting and developing the critical thinking curriculum (Barak et al., 2007). Teachers must understand the concepts of critical thinking explicitly and apply a variety of instructional strategies. Connecting topics introduced in class with students' daily activities and interests helps promote class discussions and that enhance students' critical thinking skills (Facione, 1990; Zohar & Dori, 2003). Based on the evidence of the present study, most of classroom activities rarely encouraged the students to think critically because some teachers focus on the contents of the subject, so the critical thinking skill is ignored. Thus, there is an overwhelming need to align the approaches used by the teachers to enhance and promote critical thinking skills in the language classroom. It is also crucial to bridge the knowledge learned in each lesson and make connections with other situations (Barak et al., 2007; Fisher, 1999). One of the focal objectives in teaching critical thinking is to foster students' ability to transfer this knowledge and its application across disciplines and domains (Halpern, 2013; Zohar & Dori, 2003). Additionally, the students said they were not trained to think critically. Students did not have enough background knowledge and language proficiency to critically do the given tasks. It is, therefore, the teachers needs to review or brush up their language proficiency

Lastly, it might be possible that critical thinking is not the students' learning culture. Based on the evidence of the interview, the students and teachers mentioned that developing critical thinking skills in the Thai context is rather problematic because Thai students were taught to be passive learners rather than active learners who were encouraged to give opinion and argue others controversial issues. Thus, the stereotyping of ASEAN including Thai students as uncritical is an act that fails to recognize.

CONCLUSIONS

Certain conclusions can be drawn from the results of this study. First, the ESL students who participated in this study had low language ability and critical thinking skills. Second, this finding indicates that critical thinking ability does not have strong relationship with the language ability of the students. It is reasonable to state that students with higher ability in the English Language were able to use their language advantage to answer the CCTTX. One possible explanation for the high similarities of the CCTTX scores among the students in this study is that they were all the fourth year. Hence, more research and resources would be needed to find suitable methods in developing critical thinking ability among the students at the university. The major focus of this study was to portrait language and critical thinking of students at the university.

However, the ability of the students to think in the English Language allowed the students with higher English Language ability to get better scores. The significant relationship between English Language and critical thinking ability could also suggest that critical thinking is also necessary in the English Language classroom. The development of critical thinking in the English language classroom would increase both their critical thinking and English ability. Perhaps the focus should be at developing critical thinking ability among the students for their long-term needs. The question remains, is critical thinking skills being taught consistently in the English classroom in the university in Thailand? Are the students being given the opportunity to use divergent ways of thinking and to solve problems in the classroom? Or are educators prepared and trained to teach critical thinking in the language classroom? Gardner (1991) and Kabilan, (2000) stated that even though critical thinking is an important skill at all levels, it is rarely being practiced in universities and schools in Thailand. It is ,therefore, the need for education institutions in all levels in Thailand to place the development of critical thinking skills among its students as the primary goal of the institution. According to the

findings revealed, lack of critical thinking skills of Thai students remains a major problem in all level of education in Thailand. This study has provided insights into the effective use of online materials in teaching discrete critical thinking skills in an English curriculum and has clarified the steps necessary for the cultivation of our students' critical thinking skills.

IMPLICATIONS FOR LANGAUGE PEDAGOGY

The findings of the study carry important implications for instructors who teach English. It is necessary for Thai English language students to take courses that teach them how to exercise critical thinking skills. The awareness for developing students critical thinking skills should start in the language classroom. To help language students to become a critical thinker, the instructors should reconsider the classroom activities and teaching approaches and methods, for example preparing a lesson plan including the following activities; group work, brain storming discussion, asking questions, discussion, presentation, and debates.

Overall, this study judge to be a small but important step towards improving our students' education. In the spirit of the National Education Act of 1999 and mindful of the upcoming integration of the ASEAN and the world economic community, we will strive to provide our students with the skills necessary to succeed at university and beyond.

RECOMMENDATION FOR FUTURE STUDIES

As the result of this study, recommendations for education and research will be suggested. From the data presented, it seems additional research are needed so that sufficient understanding of critical thinking can be acquired and long term success can be achieved. Therefore, the following suggestions are given to initiate further development of critical thinking at the university. First, more accurate findings can be drawn using multiple tools to test the critical thinking skills of the students. Second, this study should be replicated with a larger number of subjects so that generalizations can be made with a larger population. Third, studies need to be done to investigate more about the use of critical thinking skills at the workplace and the extent of how the skills are used. Fourth, more research is needed in determining the strategies and methods of teaching that would effectively develop critical thinking skills. Fifth, the use of critical thinking skills in tasks and assignments given to students should be examined. Sixth, the incorporation of critical thinking skills in the curricula should be investigated.

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