

# **Impact of Teaching Critical Thinking Skills on Reading Comprehension in Higher Business Education**

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*The paper aims to analyze the development of critical thinking skills in ESL classrooms as an essential factor for effective students' learning and providing competence in the professional environment. Critical thinking ability is mental processes, techniques, and comprehension skills that can be applied to question, analyze, and make critical decisions while appropriately learning new concepts. It also involves effective communication, managing emotions, and judging resources. While estimating the effect of developing critical thinking skills on students' reading comprehension performance, the authors have applied the following methods: performed data collection, data analysis, non-probability sampling method and comparison method. The non-probability sampling method is based on age range, education level, professional training and language proficiency. The results of the experiment indicate the relationship between critical thinking skills and reading competence. The analysis of the research results testifies the effectiveness of critical thinking skills development to improve reading comprehension while taking the Business English Certificate reading test.*

*Keywords: critical thinking skills, cognitive ability, Bloom's taxonomy, professional education, graphic organizers, Business English Certificate*

## **INTRODUCTION**

The current sociopolitical and business environments are closely related to IT industries that play a key role in obtaining relevant information. The information concept is essential in modern communities. In fact, information processing is an integral part of any human activity. Some scholars have determined the options for developing an information civilization and supposed that the ability to think critically is crucial for human evolution. In order to make progress and operate successfully in the fast-paced world, individuals have to apply critical thinking skills (Hong Kong Curriculum Development Institute, 2001). The education environment should be based on some fundamental strategies, such as systematic examination and evaluation of data and relevant application of acquired knowledge (Halpern, 2014).

While navigating through the digital environment, individuals are supposed to overcome the limitations of knowledge to form a different level of cognitive activity, where biological and socio-cultural processes are the determining factors. Interpretation of sensory information creates a link between people and reality and significantly contributes to cognitive processes. According to this philosophical study, cognitive processing involves acquiring true knowledge of the objective world in the context of people's participation in social and practical activities as members of society (Mikeshina, 2016). Members of various cultures may perceive and reflect reality differently. Concepts form a specific system of values and attitudes, which can be understood by native speakers of a particular language. Using language is a universal way of comprehending the outside world, but every nation provides its own devices for its citizens to describe how they experience the world (Suminova, 2006). Language can influence citizens' mental models, beliefs, backgrounds, and behavioral patterns. People see, hear, and perceive phenomena one way or another mainly because the linguistic norms and standards of society they live in suggest this form of expression (Melnikova, 2013).

In fact, critical thinking is the analytical thinking process for a proper assessment of a statement or information. Moreover, some scholars suggest that it is a vital skill and the purpose of education is not only "to teach knowledge" but to form a critical thinker views and dispositions (Hitchcock, 2017). According to other researchers, the process forms a relation between two or more objects or any utterances that assist in making a decision (Mayer & Goodchild, 1990). More than that, critical thinking is significant for the self-evaluation process (Hurley, 2010).

The critical thinking concept dates back to the middle of the 20th century. In E. M. Glaser's opinion, critical thinking makes references to searching for evidence to support an opinion or argument (The Foundation for Critical Thinking, n. d.). However, this term was used throughout human history. For example, Socrates, a Greek thinker, suggests a research system that can question convictions and opinions and prove them based on facts and real evidence. Traditionally, Socratic questioning has impacted education issues and academic approaches. This method is essential for forming effective critical thinkers. Therefore, critical thinking is about ascertaining whether something is true, partly true, or not true at all (Hughes, 2014). In order to study and work in the information environment properly, people are supposed to use different mental abilities to think critically. A critical thinking process involves logic and reasoning to make a reasoned judgment.

Critical thinking has also been defined as thinking about thinking (Ennis, 2013). J. Braus and D. Wood (1993) speak of critical thinking as rational and reflexive thinking, which makes it possible to objectively reason and act according to common sense. Critical thinking opens the possibility of looking at things from different points of view and avoiding its subjectivity and bias. M. Scriven, R. Paul, and L. Elder (The Foundation for Critical Thinking, n. d.), as well as R. Ennis (2003), note that critical thinking involves conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from observation, experience, reflection, or communication. According to D. Halpern (2014), a thinker uses critical thinking skill for solving problems, formulating inferences, calculating likelihoods, and making sound decisions.

B. Bloom (1956) proposes a classification of different objectives and skills that educators set for their students by creating a classification of learning objectives. In addition, the author identifies six levels within the cognitive domain, where people progress from simple fact recognition to the highest level identified as evaluation. The scholar concludes that learning goals depend on the cognitive taxonomy, which includes six levels: remembering, understanding, applying, analyzing, synthesizing, and evaluating. Evaluation occupies the top level of the cognitive hierarchy concerning the ability to judge the value of the material for a given purpose. Learning outcomes in this area are the highest as they contain conscious value judgments based on clearly defined criteria (Bloom, 1956).

This is precisely the disadvantage of Bloom's taxonomy because this cognitive hierarchy mixes concepts of different domains, namely, specific learning outcomes and mental processes necessary to achieve these results (Anderson, 1999; Marzano, 2000; Crawford, 2015). R. Marzano's later cognitive model incorporates various factors that influence students' thinking. This model is based on scientific facts designed to help teachers develop students' thinking skills (Marzano, 2000). However, teachers from different countries continue to use the hierarchy proposed by B. Bloom and create meaningful and

systematic tasks aimed at the intellectual development of students. For example, there is a Pedagogical Wheel model (for iPad) created in the blog of A. Carrington, who found the intersection points of Bloom's taxonomy and options for using iPad applications for the corresponding group. According to A. Carrington (2016), applications can be used to develop analytical skills (e. g., Mind Mush, Syrvey Pro, Poplet, and Inspiration Maps), synthesis ability (e. g., WikiNodes, Web to PDF, and Share Board), and ability to evaluate and create something (e. g., Creative Book Builder, Interview Assistant, Skype, Tapose, Google+, and Student Pad).

Critical thinking is an integral part of higher education. Currently, higher educational establishments are developing their curriculum to make students think critically. Therefore, issues related to teaching critical thinking techniques in the classroom are under consideration. Critical thinking technology is a system of effective methods and strategies to improve the ability of students to think critically. J. Steele, K. Meredith, and Ch. Temple have thoroughly developed the idea of reading and writing for critical thinking. The authors of this technology were concerned with the development of individuals' creative potential (Piaget, 1962; Montessori, 1989), activity-based approach to learning (Rubinstein, 2002), and the theory of personality (Fromm, 2013).

The educational program based on this technology consists of three stages. A set of techniques aims at enhancing research activities and understanding and generalizing knowledge. The first stage is evocation, which activates learners' previously existing knowledge, arouses interest in the topic, and determines the goals for studying the upcoming educational material. The second stage is the realization of meaning, which involves text comprehension. The third stage is reflection. At this stage, students form their personal attitude to the text and express it by their position in the discussion. The main purpose for developing critical thinking is to enable students to put the acquired knowledge and skills into practice.

There are different ways of using thinking skills to enhance students' learning in the classroom. In this study, the authors introduce graphic organizers as a strategy for teaching students how to generate ideas, use cause and effect analysis, and, as a result, activate diagrams of economic concepts. Graphic organizers are visual displays that demonstrate relationships between objects and concepts (Athuraliya, 2020). They guide students' thinking to complete and build a visual map or diagram (Drapeau, 1998, Restifo, 2021). Graphic organizers are visual representations of material (information about the subject) that are organized according to the isolation and systematization of basic concepts. They represent a system of knowledge about the subject and the relationship between the concepts.

Thus, Karen Bromley and her colleagues outline four stages while completing the organizers:

- Defining the word concept;
- Identifying relevant information associated with a given word or concept (website, online dictionaries, etc.);
- Searching for relevant lexemes;
- Generating new ideas by assembling parts into a whole (Bromley, DeVitis & Modlo, 1999).

One more visual technique to foster critical thinking is a Mind Map. This visual technique, developed by T. Buzan in 1970, aims to help think with clarity, establish relationships between the ideas of an argument, and find solutions to problems. This tool allows seeing things from a new perspective and analyzing concepts in the light of a big picture. Thus, it becomes easier to integrate new knowledge and organize information when there is no binding to a rigid structure (Buzan, 2005, O'Connell (2014).

Mind mapping is practical and flexible in organizing the data, structuring a concept, or even comprehending the links between ideas or events in economics lessons (Johnson, 2000, Drapeau, 1998).

## **MATERIALS AND METHODS**

The professional communication language is characterized by a well-structured presentation, an imperative tone, and the use of professionally-oriented language. Business English is different from ordinary English. For example, business topics include economics vocabulary and terms (Superanskaya, Podolskaya and Vasilyeva, 2012). The scholars suggest that critical thinking skills enable students to find

effective solutions, properly understand their professional environment, and adapt to ever-changing conditions. While doing research we describe techniques aimed at developing critical thinking skills as part of professionally oriented foreign language instruction in higher education.

The purpose of this study is to examine the critical thinking skills development in ESL classrooms as a vital tool for improving student learning and competence in a professional work environment. In order to achieve the purpose, we applied specific research methods, which are interrelated and are consistently applied through the entire study. While conducting research we use a theoretical method in order to develop a methodological foundation. We also examined and analyzed psychological and educational studies. Regarding the empirical methods we applied the comparison and measurement scientific methods. In addition, performed data collection and non-probability sampling methods were used to analyze indicators (test results) and to establish the stages of the study.

The experiment was conducted during the third semester (four months) starting from February to May 2019. The participants of the study are two groups of Business students of the University. The study involved 60 students (aged 19–20) from the Department of Economics. According to the syllabus the students have a 90-minute class twice a week. The BEC reading test and the use of the organizers (mind-mapping) took 45 minutes for each lesson.

The authors have used the Cognitive Ability Test to assess students' critical thinking abilities. The test questions have been based on the Watson and Glaser Critical Thinking Appraisal Model designed to assess how good an individual is at reasoning analytically and logically. The test used in this research contains 14 questions and includes three subtests: arguments, interpretation, and assumptions. After receiving the preparation activities, the students have been expected to analyze relevant information and work on the test questions properly.

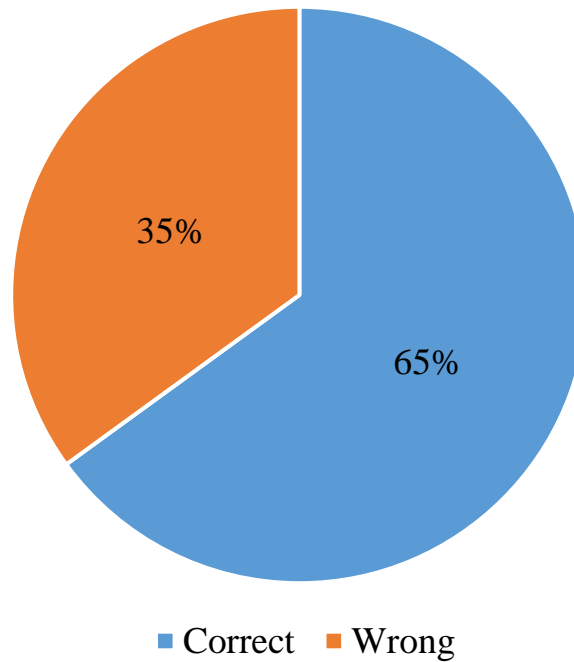
In addition, we focused both on the University curriculum, guidelines and textbooks on Business English Certificate reading test and Common European Framework of Reference for Languages (CERF).

## **RESULTS AND DISCUSSION**

This study is aimed to answer the questions that have been formulated before. Students' English proficiency can be observed from their final tests at the end of the third semester. BEC Preliminary tests can be used to assess business English language skills. The test consists of Reading, Writing, Speaking, and Listening Sections. The current research focuses on the Reading Section, which contains short texts followed by multiply-choice questions and matching questions to parts of graphics. In fact, all activities of BEC Preliminary focus on obtaining, analyzing, and assessing information. This research investigated students' ability to apply critical thinking skills while doing the BEC reading test. The investigation has been done by looking at the relationship of critical thinking and reading comprehension skills and identifying the level of students' reading ability by correlating their reading scores with the Common European Framework of Reference for Languages (CERF). According to the test results, the authors have identified that the average score of correct answers of the test-takers is 65%, while the percentage of wrong answers is 35%. Fig. 1 (Cognitive ability test, 2020.)

Second, the students have been divided into two groups: the first group with test-takers who score 25%–50% (33 students) and the second group with those who score 51%–79% (27 students). Third, BEC preliminary test (Reading Section) has been conducted with all participants. Table 1 illustrate the test results (Cambridge Assessment English, n.d.).

**FIGURE 1  
TEST RESULT**



**TABLE 1  
TEST RESULTS**

Numbers of students		BEC Test score (Reading Section)		CERF level	
Group 1	Group 2	Group 1	Group 2	Group 1	Group 2
15	14	16	23	Level A1	Level A2
10	6	18	25	Level A2	Level A2
8	7	20	30	Level A2	Level B1

Fourth, when considering the need to prepare students for better results in the BEC test, graphic organizers and mind map techniques have been used in the language classroom during the third semester (four months). Students have been prepared for the BEC test (Reading section) and have taken it at the end of the third semester. The following Table 2 shows the outcomes (Cambridge Assessment English, 2020).

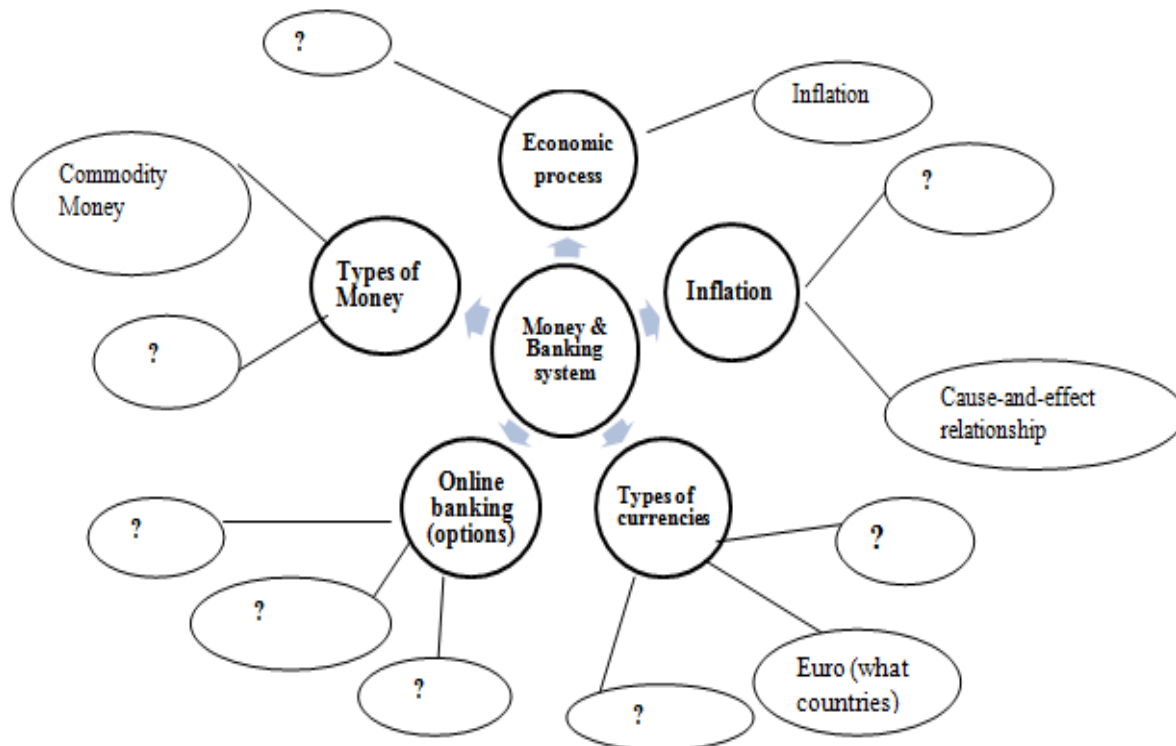
**TABLE 2  
TEST RESULTS (3RD SEMESTER)**

Numbers of students		BEC Test score (Reading Section)		CERF level	
Group 1	Group 2	Group 1	Group 2	Group 1	Group 2
12	12	20	31	Level A2	Level B1
9	8	21	33	Level A2	Level B1
10	7	23	36	Level A2	Level B1
2		26		Level A2	

The study shows that there is a connection between students' critical thinking skill and reading competence. In fact, improving students' critical thinking ability using authentic resources and mentioned strategies (graphic organizers and mind map techniques) enriches their professional vocabulary and develops language awareness.

Research and available scientific materials have proposed that critical thinking skills enable students to find workable solutions, comprehend the professional environment properly, and adapt to ever-changing conditions. In this paper, the authors describe techniques aimed to improve critical thinking ability within professionally oriented teaching of foreign languages in higher education, particularly graphic organizers and mind maps. For example, under the Money & Banking System topic, students fill in a chart and summarize information on the topic. This task aims to review vocabulary related to the topic and apply professional knowledge. Moreover, the purpose of these exercises is to improve problem-solving skills and work together with a group. The authors propose to consider the following example (Fig.2).

**FIGURE 2**  
**GRAPHIC ORGANIZER “MONEY & BANKING SYSTEM”**



While doing this activity, students can use the website <http://visuwords.com>. This resource is useful for finding relevant information, particularly the relationship between different lexemes. Learners can obtain and analyze data related to a specific business term or concept. The resource provides relational connections between different words and uses visual graphs to associate words and enrich the concept. In addition, students deal with authentic resources to enrich their economic concepts and improve business English vocabulary. As noted by some studies, different graphic organizers can be applied to learn business topics and develop critical thinking abilities.

In this study, the authors also use a big question map technique to illustrate working with business textual content. The process includes five stages:

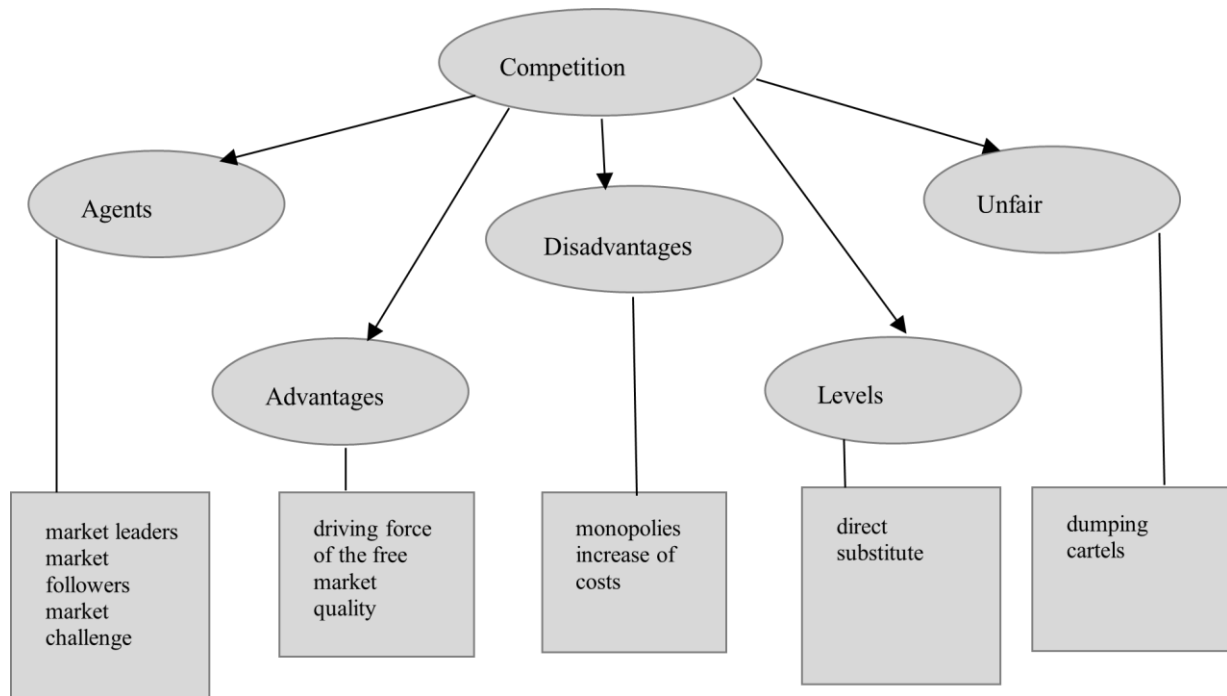
- Presenting a concept word;
- Defining the concept categories and placing them in category boxes;

- Searching for relevant words;
- Filling the gaps in a big question map;
- Generalizing information and making a summary.

A teacher defines the research topic of a presentation, report, or essay and writes some questions that will guide students. Learners are supposed to elaborate on the issues and give reasons to support the topic.

Mind mapping develops flexible and organic thinking, which is vital to critical thinking and the creative problem-solving process. Coming up with an idea necessitates a word or image to be placed in the middle of the workspace. Furthermore, the lines are radiated out with words or images on them, branching out with each association until the workspace is filled with connections to all aspects of the central idea (Fig.3).

**FIGURE 3**  
**MIND MAPPING “THE ESSENCE OF COMPETITION”**



The results showed that the students’ score in cognitive ability test influenced their achievement in BEC test. The data displayed in the tables summarises that the second group of students with 51%–79% achieved B1 level in BEC preliminary test while the students who scored less were not so successful in their BEC test results. The most important strategy to apply while doing a reading test is to combine critical thinking and reading skills. Therefore, the integration of such learning activities as graphic organizers and mind maps can improve critical thinking skills. In the inquiry process, students build knowledge through a problem-solving process. This process makes students trained to assess the validity of the knowledge gained and find relevant solutions. Thus, mind map tool made it easy for students to organize ideas and activate brainwork while taking BEC. The integrated activities provided an overview of information by combining images, words, numbers and colors. Graphic organizers activate the brain's working steps in thinking which make students think logically and innovatively. Being critical enables students to choose the right option instead of spending much time to answer the questions. Consequently, the data illustrated in this research could be used by teachers to develop the English curriculum and to design new materials, activities to motivate students to be curious while reading which can make students be critical at all time.

## CONCLUSION

Thus, the process of critical thinking is the foundation of any intellectual activity in the academic environment. The authors note that the ability to think critically should be taught within the knowledge of the subject. Therefore, teachers should design economics classroom activities that enable students to analyze, evaluate, and make sound decisions on economic matters. When an instructor teaches to think critically while reading, students discover information and ideas in the texts. It is essential to teach critical thinking strategies and practice them in class. Thinking critically affects knowledge acquisition and enables an individual to work efficiently. The present study finds a connection between students' critical thinking skills and reading comprehension.

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