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The Impact of Critical Thinking in Improving Students' Learning: A case study of students in the English Department, College of Science and Arts, Tanumah, King Khalid University

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ABSTRACT: *This study investigates the impact of critical thinking in improving students' learning and how it is important to think critically in the learning process. Improving the ability to think critically is an important element for modern education approaches and models. This study aims to provide a framework on the concept of thinking critically while teaching or learning. The world is getting both more technical and more complex day by day life environment, that's why the necessity for education increases for each growing generation. The skill of thinking critically is generally accepted as a very vital stage in every field of learning, particularly in the last decades. As a study draws a general suggestion on the importance of critical thinking skills. The study found out that: first, Students' performance was different in the post-test (after experiment) when it is compared with students' performance in the pre-test (before experiment). Second, the learning motivation of the experimental group and the control group was also different. Third, there was no difference in Critical thinking skills influenced by the interaction of learning models. Forth, Students have developed better critical thinking skills due to their abilities to negotiate and analyze critically. A well, the study recommended that: 1) critical thinking should be given and taught as a main daily activity within learning process. 2) earners should be exposed to intensive tasks that motivate and enhance critical thinking skills.*

KEY WORDS: critical thinking, thinking, learning

INTRODUCTION

According to Emir (2009) thinking critically can develop creativity and enhance the way learners use and manage their time) and critical thinking not only describes the ability to think in accordance with the rules of logic and probability, but also the ability to apply these skills to real-life problems, which are not content-independent. . Critical

thinking can provide you with a more insightful understanding of yourself. It will offer you an opportunity to be objective, less emotional, and more open-minded as you appreciate others' views and opinions.

In a recent survey by the American Associate of Colleges & Universities (AACU), 74 percent of respondents indicated that critical thinking was a core learning objective for the campus's general education program (AACU Report, 2009, p. 4). While there is a general agreement among higher education professionals that critical thinking skills are important, there is a lack of clarity about what exactly critical thinking is. A California study found that only 19 percent of faculty could give a clear explanation of critical thinking even though the vast majority (89 percent) indicated that they include it in their curriculum (Paul, Elder,& Bartell, 1997). While interviewing a private liberal arts college faculty, Brookfield (2005) explored instructors' perspectives of undergraduate thinking. Most participants were "eager to promote critical thinking" (p. 300) but the authors noted that none had been specifically trained to do so. The result was that instructors each developed and promoted their own distinct definition of critical thinking.

REVIEW OF LITERATURE

History of Critical Thinking

Critical thinking can be traced back over 2500 years ago to the teachings and visions of Socrates. Socrates formed the basis of critical thinking when he discovered that people could not rationally justify their claims of knowledge (Clark, 2009). Beneath all their empty rhetoric, was confused meanings, inadequate evidence, or contradictory beliefs. From these observations, Socrates concluded that it is illogical to depend on authority figures to have sound knowledge and insight. He determined that it was possible for a person to be in a position of power and, still, be irrational and deeply confused (Crenshaw, 2014). As such, he established the need for deep questioning and profound probing before blindly accepting ideas as worthy of belief.

Importance of Critical Thinking Skills

Critical thinking is one of the most vital aspects of knowledge. Its applicability spans from the classroom to nearly every other aspect of human life. From solving problems in class to facing real-world situations, critical thinking is a crucial skill that every student should endeavor to master (Miller, 2005). Essential skills of thinking teach a myriad of skills that are applicable in any case in life that requires one to reflect, analyze, and plan. It is a domain-general thinking skill that implores people to think clearly and rationally in everything they are doing. Whether it is in the field of education, research, management, or legal, critical thinking establishes itself an essential skill. Critical thinking is not limited to a certain class of people or to a specific profession; it is an asset for any career. According to Butler, Pentoney, and Bong (2017), critical thinking skills are a far better indicator for making positive life decisions than raw intelligence.

Thinking

According to Halpern (2003) Thinking is one of the features that distinguish humans from other living beings. Thinking is the manipulation or transformation of some internal representation says that when we start thinking, we use our knowledge to achieve some objective. In this sense thinking ability is the basic case of our life because all of us need to achieve an objective; on the other hand humans have relations in society and whereas nobody is alone. Descartes argued that thinking is reasoning, and that reason is a chain of simple ideas linked by applying strict rules of logic (McGregor, 2007).

Critical Thinking

When the term of 'Critical Thinking' is searched, it is understood that there are meanings of it which are suggested in the frame of philosophy and psychology sciences but in general sense this term has not got a definite meaning. 'Critical', derived from the Greek word kritikos meaning to judge, arose out of the way analysis and Socratic argument comprised thinking at that time (McGregor, 2007) and then the word kritikos passed to Latin as 'Criticus' that is the type of spreading to world languages from it (Hançerlioglu, 1996). According to Critical Thinking Cooperation (2006) critical thinking is an ability which is beyond memorization. When students think critically, they are encouraged to think for themselves, to question hypotheses, to analyze and synthesize the events, to go one step further by developing new hypotheses and test them against the facts. Questioning is the cornerstone of critical thinking which in turn is the source of knowledge formation and as such should be taught as a framework for all learning. Students are frequently conditioned in their approach to learning by experiences in teacher-cantered, textbook-driven classrooms (Sharma & Elbow 2000). Astleitner (53) defines it as a high order thinking skill at assessing arguments which involves interpretation, analysis, evaluation, and inference. Paul and Elder (qtd. in Zarei & Haghgoo 104) argue that critical thinking is the rigorous discipline of verifying the best thinking a person can have under any conditions or context. Ennis ("A super-streamlined"; qtd. in Behar-Horestein & Niu 27) proposes a number of cognitive skills and dispositions of critical thinkers, for example, holding a view, defending it or changing it according to evidence and arguments; understanding the causes of a problem and suggesting alternatives to solve it, being open-minded, considering the context, posing relevant questions, being empathetic, among others.

What Critical Thinking is not

Humans naturally think, and thinking happens without planning or conscious thought. Babies think, and even when they don't have the words to express their thoughts, we know thinking is happening as they are trying to figure out their world and how it works. However, higher order thinking is not something that happens naturally; critical thinking is not necessarily a natural process. Lau and Chan (2014) state that "Critical thinking is not a matter of accumulating information. A person with a good memory and who knows a lot of facts is not necessarily good at critical thinking." Critical thinking is not criticism, particularly the common understanding of criticism as always

negative. A reviewer who is critical, who offers an unfavorable evaluation of a work of art or of a theory, may or may not be using critical thinking. If the review reflects a careful analysis based on objective criteria, it is an example of critical thinking; if it is an emotional response reacting to a viewpoint opposed to the reviewer's own viewpoint, it is not an example of critical thinking.

METHODOLOGY

Research design

The study produced quantitative data from the quasi-experimental research design with the non-equivalent pretest-posttest control group. The study has one independent variable and one dependent variable. The independent variable was the learning model and gender male. The independent variable was the impact of critical.

Research population and sample

This study's population was the university students at English Department, KUU, Tanumah. The sample was collected randomly form level one to eight.

Research implementation

The inquiry mind map tool's implementation was conducted in eight levels in the English Department. The same thing was applied to the control group taught with conventional learning. The learning step uses the inquiry mind map tool to use inquiry activity learning. there are 8 steps of learning, namely:

1) Problem solving
2) Formulation of hypotheses
3) Designing an ideal framework on the inquiry mind map tool
4) Experimenting to obtain data
5) Creating a mind map
6) Group discussion
7) Final production of the inquiry mind map
8) Conclusions.

The experimental group was provided with a student worksheet that contained instructions for implementing learning and investigative instructions. Student worksheets were adjusted to the inquiry learning model by modifying the inquiry mind map as a tool created to facilitate the organization of ideas and findings. Students in the experimental group were taught to conduct experiments and investigations on the problems presented. The problems presented were given by the teacher following the topic of discussion at each meeting. The stages of learning in the experimental group included: the teacher provided a general description of the problem. Next, the teacher divided students into 8 heterogeneous groups and shared assignments. Meanwhile, students formulated problems and started predicting the answer. Students began to formulate solutions and arranged mind map frameworks to organize investigative activities in the next stage. After that, students carried out investigative and

experimental activities to find solutions and collected data and facts from various sources to test hypotheses. Furthermore, students were re-assembled to reflect on quick answers. At this stage, students were given the freedom to present the results to other groups. In contrast, other groups review the strengths and weaknesses of the presenter group's investigation results.

Instrument

Instruments were given to two groups each consists of 20 participants before treatment (pretest) and after treatment 20 participants (posttest). Assessing students' critical thinking skills used an instrument of critical thinking ability. The instrument is in the form of an essay test. The reason for choosing an essay test in critical thinking skills was that this type of test was most effective in assessing complex learning outcomes and required consideration. The essay test was also chosen because it was considered most suitable to be implemented in when the students are from different levels.

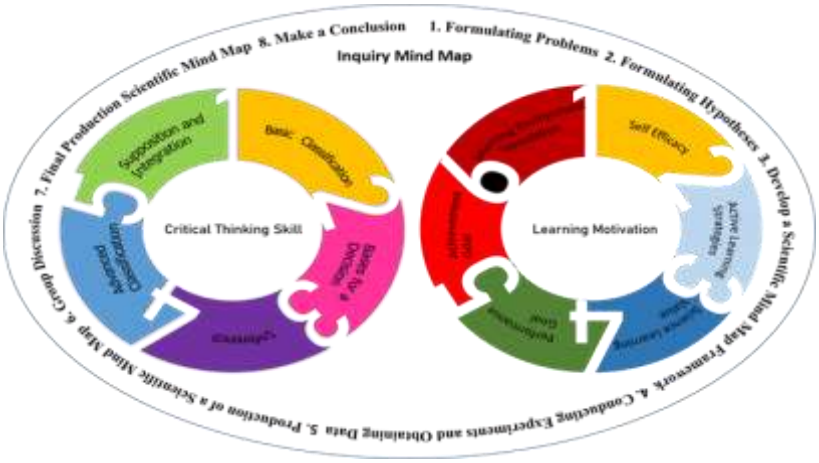

Fig. 1. Inquiry Mind Map

RESULT

This study aimed to answer the research questions that had been formulated. Be- fore carrying out the ANCOVA test, a normality and homogeneity test was carried out to determine which data was normally distributed and homogeneous. The p-value> α (α = 0.05) in the normality test using the Kolmogorov Smirnov test and p-value> α (α= 0.05) in the homogeneity test using the Levene's test. Test for the normality of critical thinking skills showed a value of 0.08> α, which meant that data was normally distributed. The homogeneity test results showed 0.09> α, which meant that students' critical thinking skills were homogeneous. Furthermore, the normality test results of learning motivation showed a value of 0.200> α, which meant the data was normally distributed. In contrast, the homogeneity value showed 0.070> α, which meant the data was homogeneous. The results of ANOVA analysis on the variables of critical thinking

skills and learning motivation are summarized in Table 2.

Table 2. ANCOVA Test on Critical Thinking Skills and Learning Motivation

	Source	Df	Means Square	F	Sig	ηp2
Critical Thinking After Implementation	Corrected Model	1	2743.340	17.135	.000	.203
	Intercept	1	1210551.077	7561.287	.000	.974
	Gender	1	1.087	.007	.934	.000
	Model	1	8222.461	51.359	.000	.203
	Gender*Model	1	62.366	.390	.533	.002
	Error	0	160.099			
	Total	40				
	Corrected Total	1				
Student's learning After Implementation	Corrected Model	2	208.155	3.780	.010	.054
	Intercept	1	4122575.350	76639.474	.000	.997
	Gender	1	177.125	3.293	.071	.016
	Model	1	307.904	5.709	.018	.027
	Gender*Model	1	176.203	3.276	.072	.016
	Error	2				
	Total	2				
	Corrected Total	2				

DISCUSSION

The results showed that critical thinking increased after treatment in the experimental class using learning activities with an inquiry mindmap tool. This proved that learning activities in using inquiry mind map tools were useful than the traditional class.

Using learning activities with an inquiry mind map tool can improve critical thinking supported by previous research. Many studies stated that the inquiry model supports high-level thinking skills through formulating problems, buildingknowledge through investigation, and solving problems. This process involved students thinking actively during the learning activities. This process makes students trained to seek their knowledge, so students are accustomed to assessing the validity of the knowledge gained. Critical thinking skills were also supported by the findings of [55] which explained that if students search for knowledge by themselves, it could improve their understanding because, during the process of finding knowledge, their critical thinking skills will increase.

Findings

The study found out that:

1. Students' performance was different in the post-test (after experiment) when it is compared with students' performance in the pre-test (before experiment).
2. The learning motivation of the experimental group and the control group was also different.
3. There was no difference in Critical thinking skills influenced by the

interaction of learning models.

4. Students have developed better critical thinking skills due to their abilities to negotiate and analyze critically.

Recommendations

Based on the findings stated earlier, the study recommends:

1. Critical thinking should be given and taught as a main daily activity within learning process.
2. Learners should be exposed to intensive tasks that motivate and enhance critical thinking skills.

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