THE IMPLEMENTATION AND EVALUATION OF SATISFACTION WITH THE BLENDED SOCRATIC METHOD OF TEACHING (BSMT): AN INSTRUCTIONAL MODEL TO ENHANCE THE CRITICAL THINKING SKILLS OF UNDERGRADUATE BUSINESS STUDENTS

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ABSTRACT

The main focus of this study was to implement and evaluate the level of satisfaction of undergraduate business students towards an instructional model known as the Blended Socratic Method of Teaching (BSMT) developed to enhance their critical thinking skills. The model refers to a set of inter-related components arranged in sequential order which provides guidelines to teachers to achieve RED – recognizing assumptions, evaluating arguments, and drawing conclusions). The specific purposes of this research were 1) to implement and determine the effectiveness of the instructional model, and 2) to evaluate the level of satisfaction of undergraduate business students towards the instructional model.

The research methodology comprised two phases corresponding to two research objectives: 1) implementation of the developed instructional model with 40 undergraduate business students majoring in Human Resource Management at Naresuan University International College (NUIC) and the determination of the effectiveness of the model and 2) evaluation of the satisfaction of the undergraduate business students towards the instructional model.

The results were as follows:

1. During the implementation of the model, the findings revealed that the developed model is an effective instructional model to enhance the critical thinking skills of the undergraduate business students, as shown in the students' pre-test ($\bar{x}$=13.20) and post-test score ($\bar{x}$=25.17) in the critical thinking appraisal, which is significantly different at 0.01 level of significance.

2. The undergraduate business students were "highly satisfied" with the Blended Socratic Method of Teaching (BSMT) Model as they evaluated the model "strongly satisfied" in all aspects—objectives, syntax, content, support system, principles of reaction, the social system, measurement and evaluation, and impact on students and students self-rated

accomplishments. The undergraduate business students were in complete agreement that the model enhanced their critical thinking as well as other 21st century skills, communication and collaboration, problem solving, and decision making.

Keywords: Instructional Model, Critical Thinking, Socratic Method of Teaching, Blending Learning, Undergraduate Business Students

INTRODUCTION

Critical thinking is identified as one of the 21st century skills (The Partnership for 21st Century Learning, n.d.) and is defined as that mode of thinking about any subject, content, or problem in which the thinker improves the quality of his or her thinking by skillfully analyzing, assessing, and reconstructing it (Paul and Elder, 2006, 1992, p. 19). Its importance is recognized in both personal life and job performance. As such in a globalized world today, businesses place more emphasis on critical thinking skills when hiring people to work for them (American Management Association, 2010). In addition, Paulson (2012) stresses the same ideas that in hiring employees, businesses are looking for people who have the ability to work collaboratively, think critically, and solve problems.

Preparation for business careers was identified nearly a century ago as one of the important missions of higher education (Colby et al., 2011). In addition, Flexner (cited in Colby et al., 2011) stated that one of the three kinds of students served by a higher education is future businessmen and businesswomen. Moreover, in the business setting, failure to think critically can result in missed opportunities, faulty decisions, inefficiencies and ineffectiveness (Flores, et al., 2012). They added that as the pace of change and the complexity of problems in the business world become more compressed and convoluted; the failure to think critically has far-reaching implications that come with financial, social, and personal costs.

Educators around the globe are in consensus that students lack critical thinking skills. There are numerous studies supporting this universal fact (Taylor, 2010; Smith, 2003; and Rimer, 2011). Furthermore, based on my own experience as a lecturer in higher education for nearly ten years, students lack of critical thinking skills is manifested by their inability to see contingency in cases of complexity, inability to connect and see the big picture of a certain theory as relates to real world experiences, inability to infer and draw conclusions, and inability to integrate multiple perspectives with a multiplicity of facts and determine the best course of action.

In Thailand, the importance of critical thinking is stressed in the National Education Act of 1999, as stipulated in Section 24. In compliance with the stipulation, Naresuan University requires its curricula to instill in students at all levels the six "smarts," namely smart at work, smart in people skills, smart in creating novel ideas/thinking, smart in life skills, smart at problem

solving, and smartly equipped with knowledge, skills, and attitudes as global citizens (Naresuan University, 2013). These "smarts" are directly linked to the 21st century skills, specifically critical thinking (Assessment and Teaching of the 21st Century Skills, 2014). However, the attempt to inculcate critical thinking in Thai students has been far from successful (AMP Group, 2011). Students still lack critical thinking skills (AMP Group, 2011).

In order to address the deficient critical thinking skills of students, an instructional model based on the Socratic method of teaching and information communication technology (ICT) through Facebook, known as the Blended Socratic Method of Teaching (BSMT) was developed and implemented with undergraduate business students. Some proponents of adopting the Socratic Method to foster critical thinking skills, such as Paul and Elder (1997) argue that this method has proven the most powerful teaching tactic for fostering critical thinking since antiquity. Another important element of the instructional model is Information Communication Technology (ICT). For students nowadays who are considered digital natives (The Economist Intelligence Unit, 2008), ICT is becoming a ubiquitous component of learning (Iordache and Lamanauskas, 2013). Therefore, to effectively deal with the crisis of deficient critical thinking of students, the Socratic Method will be blended with ICT through a popular social networking site—Facebook, which is referred to as blended learning. Furthermore, business case studies will be used as a support system in enhancing students' critical thinking skills. The case study method or business case analysis is a method of giving students a real historic business situation consisting of a detailed factual description of an issue faced by an organization together with the surrounding facts, circumstances, events, and management opinions (Lundberg et al., 2001).

Through this study, a pedagogy known as the Blended Socratic Method of Teaching (BSMT) model combined with a case method will address the deficiency and enhance the critical thinking of undergraduate business students.

RESEARCH QUESTIONS

1. What are the results of the implementation process, and what is the effectiveness of the Blended Socratic Method of Teaching (BSMT)?

2. What is the level of satisfaction of undergraduate business students towards the Blended Socratic Method of Teaching (BSMT)?

RESEARCH OBJECTIVES

1. To implement and determine the effectiveness of the instructional model.

2. To evaluate the level of satisfaction of undergraduate business students towards the instructional model.

LITERATURE REVIEW

The RED Model of Critical Thinking

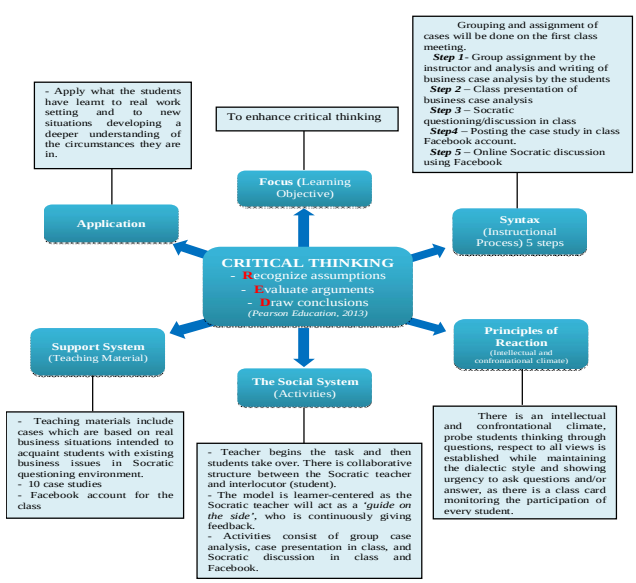
Critical thinking skill in this study refers to the pre-test and post-test scores a student obtained from the Watson-Glaser Critical Thinking Appraisal, assessing the competencies in three skills referred to as the RED—recognizing assumptions, evaluating arguments, and drawing conclusions, prior and subsequent to using the Blended Socratic Method of Teaching (BSMT) model.

The RED model (Pearson Education, 2013) has three essential elements: 1) Recognize assumptions. This element of the RED model of critical thinking is the ability to separate fact from opinion (Coleman, Mason, & Steagall, 2012); 2) Evaluate arguments. This ability entails analyzing information objectively and accurately, questioning the quality of supporting evidence, and understanding how emotion influences the situation (Coleman, Mason, & Steagall, 2012); and 3) Draw conclusions. It is the ability to bring diverse information together to arrive at conclusions that logically follow from available evidence without generalizing beyond the evidence (Coleman, Mason, & Steagall, 2012).

The Blended Socratic Method of Teaching

The essential components of the Blended Socratic Method of Teaching (BSMT) model provide an authentic and comprehensive learning method that will enhance the critical thinking skills of the undergraduate business students. The model has six components, namely, 1) Focus; 2) Syntax; 3) Principles of Reaction; 4) The Social System; 5) The Support System; and 6) Application (adopted from Joyce, et al., 2009). The model was validated as to its quality as "highly appropriate" by five experts. The model is embedded in the course.

A. The Blended Socratic Method of Teaching (BSMT) Model



Component 1: Focus (Objectives of the model)

An instructional model designed to enhance the critical thinking skills, particularly the RED—recognizing assumptions, evaluating arguments, and drawing conclusions of the undergraduate business students through the combination of different tools, such as dialectic style, presentation, business case analysis, and social networking.

Component 2: Syntax (Instructional Process)

The core of this model is the syntax. It consists of five instructional steps as described below:

Step 1: Group Assignment, Analysis and Writing of a Business Case Study

The group assignment is done in the first meeting of class by the instructor, and the case analysis and writing of business case study are done by the students before coming to class. This step is further subdivided into different activities, namely,

1.1 Students are grouped into three to four people at the first class meeting by the instructor. Students are free to choose who will be in their group.

1.2 The cases are assigned to each group by the instructor. There are a total of ten cases for ten weeks. The group presentations of cases in class consist of one case study per week for a total of ten weeks. Cases are limited to the list provided by the instructor in class.

1.3 The date of the case presentation is assigned and announced by the instructor at the first class meeting.

1.4 The group starts analyzing the case assigned before coming to class. The case analysis is written according to the prescribed format provided by the teacher.

Step 2: Presentation of the Business Case Study

During the presentation of the case, students are required to comply with the following:

2.1 Students prepare a PowerPoint presentation.

2.2 The presenters provide a hard copy of the case analysis to the instructor.

2.3 Those students who are not presenting should pay attention to the presentation.

2.4 The first part of the presentation is the facts of the case: nature of the case, character, events/incidents, and other important facts.

2.5 Students discuss issues and problems.

2.6 Students present an alternative course of action.

2.7 Students answer the problems.

2.8 Students state the conclusion.

Step 3: Socratic Discussion in Class

After the presentation, the Socratic discussion begins in class. Anyone in class can begin by asking a question. The presenters or anyone in class can answer and/or give follow-up questions. The instructor has a class card for each student where the title of the case and the

week number was written for recording students' participation in class, emphasizing the question and/or answer of the participant. The instructor constantly monitors and asks probing questions of the students but does not give the answer.

During this step, the following are the sub-stages/activities:

3.1 The instructor/student asks probing questions.

3.2 The presenter/student/instructor asks more probing questions. There is no limit to the number of questions. No answer is given except for some factual questions.

3.3 The members of the class evaluate the questions and provide more arguments and probing questions.

3.4 The instructor concludes the discussion. The instructor does not answer the question posed by the teacher or student.

Step 4: Posting the Case in the Facebook Account of the Class

After the case presentation and class discussion, the instructor posts the case analysis to the Facebook account named "Blended Socratic Method of Teaching." It must be noted that all the students are required to be in the Facebook account created specifically for the class.

Step 5: Facebook Socratic Discussion

Facebook Socratic Discussion: After the case presentation and class discussion, the instructor posts the case analysis on the Facebook account named "Blended Socratic Method of Teaching." It involves the following activities:

5.1 Students are instructed to post their questions and/or answers. The instructor continuously monitors and asks probing questions of students but does not give answers.

5.2 The instructor/student asks probing questions.

5.3 The presenter/student/instructor asks more probing questions. There is no limit to the number of questions. No answer is given except for some factual questions.

5.4 The members of the class evaluate the questions and provide more arguments and probing questions.

5.5 The instructor concludes the discussion. The instructor does not answer the question posted by the teacher or student.

There is no specific period of time to finish the discussion for each case. Students can go back to the previous case to post comments/answers even after a new case has been posted.

Instructor's Feedback

An essential part of the instructional process is the instructor's feedback. The instructor acts as the facilitator and joins the discussion. The instructor asks questions which help in generating more inquiries for the discussion until reaching the answers to questions. The instructor maintains the status as a "guide on the side."

Component 3: Principles of Reaction (Teacher's reaction to students' responses)

There is an intellectual and confrontational climate probing students thinking through questions. There is "productive discomfort" which shows the urgency of asking/answering questions on the part of the students. To show this, the teacher has a class card monitoring the participation of each member.

The Socratic teacher maintains a dialectic style and keeps the discussion focused. Every opinion in class is respected and every student is treated with respect considering every idea and opinion presented. This is maintained both in class and Facebook discussion.

Component 4: The Social System (Activities)

A collaborative structure between instructor and students is established in class, where the Socratic teacher is considered as a 'guide on the side.' The Socratic teacher in short is a 'guide' in the learning process. Activities involve a learner-centered approach, including group case analysis, case presentation in class, Socratic discussion in class, and Socratic discussion on Facebook

Component 5: The Support System (Teaching Materials)

Teaching material includes ten business case studies which are based on real business situations intended to acquaint students with existing issues in business. This model nurtures the critical thinking skills of students by RED—recognizing assumptions, evaluating arguments, and drawing conclusions.

The Facebook account named 'Blended Socratic Method of Teaching' was created specifically for the class to realize the objectives of the instructional model.

A 9-10 page case study relating to the course Ethics and Corporate Social Responsibility (CSR) was assigned to students in groups. There are 10 business case studies, one for each week. The cases are related to the learning objectives and enhancing the critical thinking skills of undergraduate business students.

Component 6: Application

This instructional model is applicable to what the students have learnt, to a real work setting, and to new situations, developing a deeper understanding of the circumstances they are in. The evaluation tools for evaluating the critical thinking test of undergraduate business students consisted of an achievement test administered after completion of the instruction.

RESEARCH METHODOLOGY

Sample: The experimental group where the instructional model was implemented consisted of 40 third year students, majoring in Human Resource Management at the Naresuan University International College in the first semester of the academic year 2014.

Instruments: The implementation phase included 1) Lesson Plan: There were ten lesson plans on ten different topics about business, prepared for ten weeks for three hours per week; 2) Business Case Studies: There were ten business case studies selected by considering

the following: the topic is about real life setting, the cases are relevant to the study of business, and the cases presented situations and events requiring students to use the RED—recognizing assumptions, evaluating arguments, and drawing conclusions; and 3) Facebook Account: A Facebook account called "Blended Socratic Method" was created by the researcher-instructor, where the 40 students were required to be a "friend." In determining the effectiveness of the model, a pre-test and post-test was administered using the Watson-Glaser Critical Thinking Appraisal (Pearson Education, 2012), consisting of 40 multiple-choice sections. In the evaluation phase, a satisfaction survey (Part I–rating scale and Part II–open-ended questions) was used, and the questionnaire was validated by three experts.

Data Collection Process: The implementation phase used a pre-test post-test design: 1) pre-test before the start of the session using the instructional model followed by teaching the undergraduate business students using the BSMT model and 2) post-test after the completion of the ten weeks session using the instructional model.

Data Analysis: The overall performance on the critical thinking appraisal was scored according to the student's correct score obtained from the test. The score is interpreted as follows:

91st percentile and above	-	Well above average
71st – 90th percentiles	-	Above average
31st – 70th percentiles	-	Average
11th – 30th percentiles	-	Below average
10 percentile and below	-	Well below average

The satisfaction survey was analyzed using mean ($\bar{x}$) and standard deviation (S.D.) and content analysis.

RESULTS

Table 1 Overall Comparison of the Critical Thinking Appraisal of the Experimental Group

Comparison of the Pre-test and Post-test Critical Thinking Score	$\bar{x}$	S.D.	t	df	Sig	Level
1. Pre-test Score	13.20	3.88	12.614*	39	.000	Below Average
2. Post-test Score	25.17	3.18				Below Average

*$p \leq .01$

The overall comparison of the pre-test and post-test scores shows that the post-test is higher than the pre-test score with statistical difference at 0.01 level. This means that the students enhanced their critical thinking skills. The level of the students' critical thinking enhanced from "below average" (13.20) to "below average" (25.17) according to the percentile provided by Watson-Glaser.

Table 2 Overall Students' Satisfaction on the Blended Socratic Method of Teaching (BSMT) Model

Items	n = 40		Level of Satisfaction
	$\bar{x}$	S.D.	
1. Objectives	4.55	0.43	Strongly Satisfied
2. Instructional Process (Syntax)	4.53	0.32	Strongly Satisfied
3. Content	4.58	0.45	Strongly Satisfied
4. Teaching Materials (Support system)	4.57	0.37	Strongly Satisfied
5. Teacher-Student Interaction or Rapport (Principles of Reaction)	4.59	0.42	Strongly Satisfied
6. The Social System	4.66	0.39	Strongly Satisfied
7. Measurement and Evaluation	4.57	0.44	Strongly Satisfied
8. Impact on Students, Student Self-Rated Accomplishments	4.54	0.39	Strongly Satisfied
9. Overall Ratings	4.50	0.48	Strongly Satisfied

Table 2 presents the students' overall rating on the BSMT model. The students rated the BSMT model "strongly satisfied" in all aspects. Of the eight categories rated, students gave the highest rating to "The social system (activities)" ($\bar{x}$ = 4.66 and S.D. 0.39). The social system includes the collaborative structure of teaching between students and the instructor, the instructor being a "guide on the side," and continuous feedback provided by the instructor which are all intended to help students to think critically. The students rated the second highest "Teacher-Student interaction or Rapport (Principles of Reaction)" ($\bar{x}$ = 4.59 and S.D. 0.42). It shows that students can enhance their critical thinking in an environment where there is respect and good relationship between the instructor and the teacher. The fact that students were challenged by probing questions likewise contributed to enhancing students' critical thinking.

In the open-ended question the students answered that the most important things they learned from attending the course were academic achievement, recognition of the importance of the course to future career, acquisition of critical thinking skills, and recognition of the method of teaching. Also, they said that the best aspects of the course were recognition of the value of the learning activities, academic achievement, recognition of the value of the method of teaching, and the caring instructor. The students were likewise in complete agreement that they enhanced their RED skills and other 21st century skills, such as communication and collaboration skills, problem solving skills, and decision making skills

through attending the course, and that they would definitely recommend the course to other students.

CONCLUSION AND DISCUSSION

The BSMT model successfully enhanced the critical thinking skills of the undergraduate business students. There is complete agreement from the experts as well as the undergraduate business students that the Blended Socratic Method of Teaching (BSMT) model is highly appropriate in enhancing the RED critical thinking skills. Also, after implementing the model, the class demonstrated a significant difference in their critical thinking. Theoretical and research findings on every component of the model exhibited the effectiveness of the model. Interestingly, based on the study, the BSMT model has been shown to be effective not only in the enhancement of the 21st century skills—critical thinking skills of the undergraduate business students, but also the enhancement of other 21st century skills, such as learning and innovation, technology, and life and career skills.

The findings are supported by Korkmaz and Karakus (2009) and Straus et al. (2013). Korkmaz and Karakus (2009) confirmed that blended learning contributed more to student critical thinking dispositions and levels when compared to the traditional learning model. It was also reiterated that using information communication technology (ICT) in the classroom is becoming a ubiquitous component of learning (Lordache and Lamanauskas, 2013) as we have students who are digital natives. ICT serves to individualize learning; is interactive, low cost, and climate insensitive; and so can serve multiple teaching functions with high speed delivery and uniform quality (Reddi, n.d.). Undoubtedly, this study presented another successful method of using blended learning to enhance students' critical thinking.

Aside from the above-mentioned findings confirming the results in this study, the students being digital natives (The Economist Intelligence Unit, 2008) are interested in using the social networking site Facebook. Studying to them became more engaging and motivating, which contributed to their enhanced critical thinking. The Socratic discussion served to individualize learning (Reddi, n.d.), and students were more comfortable communicating. As proof of the effectiveness of the model the students' Facebook discussion extended the hours of studying which lasted from 3 days to 21 days or 3 weeks compared to 3 hours traditional classroom discussion. Also, students posed unlimited questions and/or answers. The fact that the students could go back anytime to the posted topic was a relief to the students as when there were unclarified issues, they could go back anytime to the Facebook discussion. In addition, the students were studying 24/7. The students discussed 24 hours a day from Monday to Sunday, including holidays. Students asked questions and/or answers voluntarily and even answered or give additional answers on behalf of their classmates. They asked for clarification from both of the instructor and their classmates. It is very uncommon in Thai classroom culture to ask

clarification of instructor or teachers Kakkar (n.d.). Students had self-initiative to start the discussion which never happens in a traditional classroom discussion. The fear of 'losing face' in front of the classmates inhibits students from initiating the class discussion, but it is the opposite in the case of using the Blended Socratic Method. The students did some research related to the topic and posted the link in the Facebook account. They could answer at a minimum three full sentences, which does not happen in traditional classroom discussion. Even the passive students, who do not normally speak in class, became active students in the discussion. They felt that they had the freedom of typing their answers without the prying eyes of the instructors and classmates. The students showed their ability to express agreement or disagreement; they could express their ideas or opinions with their classmates or instructor. Asking questions indicated that they critically analyzed the case. It is included in the RED skills—analyzing arguments. The students showed how they critically analyzed the problems and questions presented in the case by giving logical answers based on reasons and offered solutions. It is interesting how students could frame answers better than in the traditional classroom discussion. Motivated and active students are clearly visible in using the model. Since the students knew their role and what was expected of them, students performed as such in class. The instructor gave immediate and continuous feedback to students' answers and/or questions round the clock. In order to keep up with the students, the instructor asked and/or answered even at 3:00 in the morning. No question or answer was left unnoticed by the instructor. Positive comments or simply an acknowledgement was on Facebook. These facts inspired, motivated, and stimulated students to think deeper, participate, and are an active learner. The Socratic-teacher's (instructor) role in the effective implementation of the model serves as a light in keeping the discussion focused and going.

Using the Socratic method of teaching has proven to be an effective method in enhancing the critical thinking of the undergraduate business students. In support of these findings, Merritts & Walter, n.d.; Paul and Elder, 1997; Reich, 2003; Whiteley, 2006; Chafee, 2013, emphasized that since antiquity, the Socratic method of teaching has been recognized as an effective approach of enhancing critical thinking skills and is the oldest yet still the most powerful teaching tactic for fostering critical thinking. It is also considered the "coping-stone" of the educational system and Whiteley (2006) the "finishing touch" for the process of learning.

The undergraduate business students were highly satisfied with the Blended Socratic Method of Teaching (BSMT) Model as they evaluated the model strongly satisfied in all aspects–objectives, syntax, content, support system, principles of reaction, the social system, measurement and evaluation, and impact on students and students self-rated accomplishments.

The results show that the HRM students were "highly satisfied" with the BSMT model for the following reasons: first, students were able to enhance their critical thinking, and they

learned to recognize assumptions, evaluate arguments and draw conclusions after attending the course; second, according to the students, they were strongly satisfied that the BSMT model used group assignments, writing of case analysis, class presentation, and Socratic discussion in class and felt that the in the class Facebook account enhanced their critical thinking. According to Joyce et al., (2009), the syntax or the instructional process is the heart of teaching models or it is the model in action, which is also true in the BSMT model. As such, the students became accustomed to the process; third, the content was presented in an orderly manner, enhanced their critical thinking, and they recognized their applicability for their future career (business field); fourth, the teaching materials (support system), consisting of case studies were clear, helped in enhancing critical thinking, and were applicable to their future career while the class Facebook account helped them study anytime and anywhere and was convenient to use; fifth, the teacher-student interaction or rapport (principles of reaction), the intellectual and confrontational climate through probing questions helped students think more, the dialectic style enhanced students' critical thinking, and the environment of respect during the discussion stimulated students to think critically; and sixth, the social system of the instructional model with its collaborative structure of teaching between students and instructor stimulated students to think more. The role of the instructor as a "guide on the side" helped students to think critically while the continuous feedback provided by the instructor stimulated students to think more; and finally, the criteria for evaluation were appropriate, and the requirements of the course were measured appropriately.

The class was in complete agreement that they enhanced their critical thinking by attending the course particularly mentioning the RED–recognizing assumptions, evaluating arguments, and drawing conclusions. The BSMT model undoubtedly enhanced the critical thinking skills of undergraduate business students. The critical thinking skills developed are in consonance with the RED model of critical thinking. Recognizing assumptions as an element of the RED is the ability to separate fact from opinion (Coleman, Mason and Steagal, 2012), and it is forming an inference, an opinion or a belief about (among other things) a person, place, or philosophical position; and an ability to separate fact from fiction (Piscitelli, 2012). Evaluating arguments as an element of the RED entails ability to analyze information objectively and accurately, questioning the quality of supporting evidence, and understanding how emotion influences the situation (Coleman, mason and Steagall, 2012). Finally, drawing conclusions as the last element of the RED is the ability to bring diverse information together to arrive at conclusions that logically follow from available evidence without generalizing the evidence (Coleman, mason and Steagall, 2012). Based on the students' response, the RED critical thinking skills are undisputedly present.

Through meeting the requirement of producing business graduates equipped with critical thinking skills, the stated goals of the educators and the business world will be fully satisfied. Not to mention equipping the students with the 21st century skill.

RECOMMENDATIONS

Although the BSMT model received an outstanding evaluation from the experts as well as the students where it was tested, it is still advisable to verify its effectiveness; hence, the following are recommended: 1) Another study may be conducted with a group of business students and the testing period should be longer than 10 weeks. It is even better if the model will be used from the first year of study of the students until third or fourth year of study, 2) A study may also be conducted with non-business students to test whether the model is effective in enhancing critical thinking skills of students from another context, and 3) A study may be conducted with young learners (high school students) to know whether the model can be modified to enhance the critical thinking skills of young learners.

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