THE SOCRATIC METHOD ONLINE TO IMPROVE CRITICAL AND HIGH ORDER THINKING AMONG STUDENTS

Salihuddin Md. Suhadi, Hasnah Mohammed,
Norasykin Mohd. Zaid, Zaleha Abdullah, Baharuddin Aris

INTRODUCTION

Since the existance of social sites is more widespread nowadays; adolescents ages 13 to 17 are often engaged in it more than studying. These things happen because they are exposed to the use of technology since birth. This can be avoided since technology can be put to good use in daily or everyday life. Various parties, especially parents and teacher should monitor their children's addiction to technology can be deflected to thing that can be beneficial. For example, the use of online learning is an ideal medium for students who often use the computer while studying. The use of online technology for learning can help student to share ideas with other students and socialize at the same time (Liao *et al.,* 2014). Apart from that, there are also studies that state the online learning can stimulate the student's use of critical thinking as they challenged each other to express their views (Kalelio lu dan Gülbahar, 2014). To futher improve the online discussion, the use of socratic method which is a method that can make students always think. This due to the fact that this method uses questioning techniques to encourage students to think for acquiry answers, thus construct their own concept of the answers given and received from their peers in the forum (Yang *et al.,* 2005).

SOCRATIC METHOD OF LEARNING

The Socratic Method originated from Socrates, a Greek philosopher who lived circa 470 – 300 BC and was well known for his thinking through questioning and always providing a reason with his answers. The main concept in learning via Socratic Method is that teachers put forth multiple questions whereby with those questions, students are driven to think thoroughly before answering them. The one aspect that is emphasized in the Socratic Method of learning is to motivate students to think and build constructs upon learning something. When a student repeatedly thinks, it will indirectly mould them into becoming inquisitive, or to be more precise, have a high level of curiosity (Tikva, 2010).

One method that is often used in Socratic learning is the dialogue. The purpose of a dialogue is to discuss a problem to find a variety of solutions whereby this of learning is more towards independent learning (Birnbacher *et al.,* 2004). Often the dialogue is an interaction between two individuals, but when there is learning in the classroom, the teacher changes the dialogue to a group interaction. The role of the teacher is to facilitate the group and ensure that the group is always in a dialogue with one another until all concerns are resolved (Clay, 1990). All the arguments raised will be synthesized constructively to achieve an optimal solution. The same concept is also available in a Socratic seminar, whereby a series of questioning techniques with logical answers are given to construct an argument and conclusions. This technique will stimulate the mind to think more critically (Shea *et al,.* 2006). By using the dialogue, each member in the dialogue would feel compelled to either give an opinion or to ask a question. This activity will ignite critical thinking as question after question would arise and stimulate students' brains to think..

Socratic Method is not a just a matter of asking question and

having the answer given by the teacher, but it is a method that requires the review of reading, thinking and reasoning that can lead to answering the questions given (Landis *et al.*, 2007). There is a significant difference between dialogue and debate because both go through different processes. Dialogue is a process of knowledge sharing whereas debate is championing one's personal opinion. Socratic Method of learning is not a common method in class discussions; where by eventually the teachers will provide answers after the students get stuck, but it is a process of interaction between teachers and students that allows students to be more involved than teachers. Once you reach a point where students cannot respond, the teacher will help by providing questions that can open the minds of students to think (Imison, 2004). Socratic Method can also make students more active, which is in line with the student-centred Active Learning concept (Peterson, 2011). Peterson also adds that there are a few important roles of teachers when conducting this Socratic learning method. Among them are: -

    i. Asking students to provide answers by giving relevant examples

    ii. Gain support or acquiescence of the members of the group with an opinion or answer from a student

    iii. Propose an example similar to the actual situation

    iv. Giving an analogy in explaining a concept

CRITICAL THINKING

There are many aspects in higher order thinking when viewed as a whole and one of them is critical thinking. Critical thinking is introduced to mean an attitude and skill to apply logic in problem solving (Glaser, 1942). Further opinion states that critical thinking means that students develop a logical concept based on the phenomenon that they have experienced (Brookfield, 1987 ; Ennis, 1989 ; Paul, 1992), however, critical thinking can actually be learned, or it can be built from the motivations and natural preferences of a person. Critical thinking requires a person to apply

suppositions, knowledge, competencies and abilities in their thinking. When critical thinking skills are used, the individual should be able to make a reflection of the quality of the thinking that has been made (Courtney, 2002). According to Banning (2006), the process of critical thinking involves scrutiny, comparison and evaluation of information to make a reflection and subsequently forming the right conclusions. Critical thinking also takes into account the arguments given in depth when presented with the conclusions (Fahim and Pezeshki, 2012).
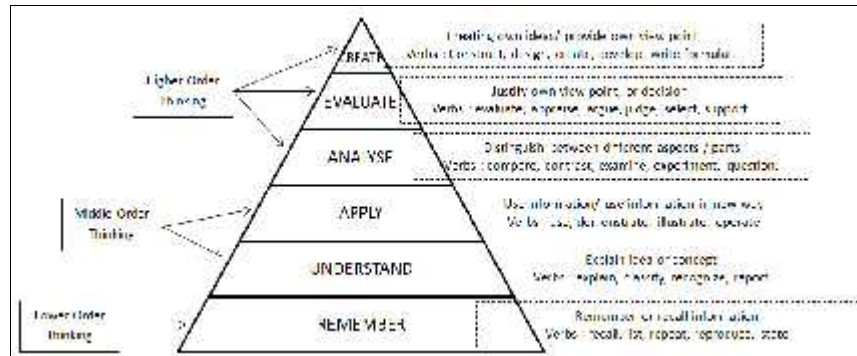

Figure 1: Level of Thought, revised by (Ball and Garton, 2005)

According to figure 1, Ball and Garton, (2005), there are three levels of thinking which are Lower, Middle and Higher order. Higher-order thinking described here involves three main elements, namely (i) analysing, (ii) evaluating, and (iii) creating. Two of these three elements will be the main basis for the critical thinking which are analysing and creating. Therefore critical thinking is very closely related to higher-order thinking skills.
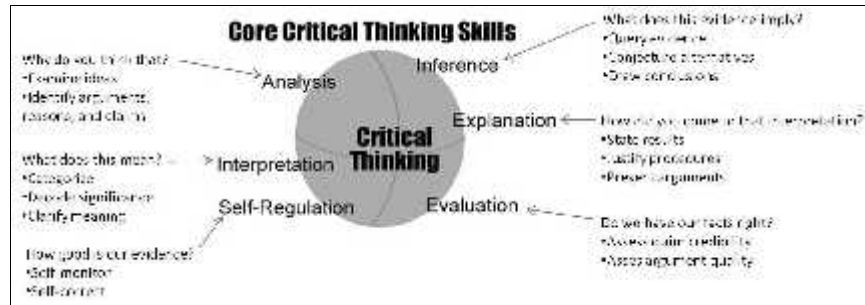
Figure 2: Core Critical Thinking Skills (Youens *et al.*, 2014)

Referring to Figure 2 which shows the basic elements of critical thinking, there are six elements and two of which are closely related to higher-order thinking skills. According to Youens, thinking critically is vital for the future of the student as they will constantly reflect on their thinking when making a decision which will indirectly strengthen the comprehension of a concept deeply. Students will also be able to evaluate all the decisions that they have made in the past. In fact, according to Faturohman (2012), students who think critically can be deemed responsible as they are used to thinking thoroughly, openly and imaginatively before making a decision. The ability to think critically is vital because in our daily life, all of us, not just students, will face a situation whereby we have to make a thoughtful decision that can determine whether the outcome is favourable or otherwise.

USING TECHNOLOGY IN A SOCRATIC METHOD LEARNING ENVIRONMENT CAN BUILD CRITICAL AND HINGHER ORDER THINKING

The rationale for using Socratic Method of learning is to achieve the aim to develop critical thinking skills in students. There are several elements that are important in shaping critical thinking which includes an interpretation of the concept, analysis, evaluation and inference from a context or observation (Boghossian, 2006). Opinion Shea (2006), says that critical

thinking is more focused on using logic to explain or to answer a problem as well as providing relevant evidence as a reference. Socratic Method makes an effective process of managing class discussions and students can get valuable experience when they participate in the discussion. According to a study by (Polite dan Adams, 1996), they say that the Socratic Method, students are able be tolerant in the reflective activities such as the dialogue activities. Reflective in the Socratic aspects mean active thinking, beliefs and assumptions that could lead fellow students to master problematic issues (Griffith and Frieden, 2000). Reflective activities such as dialogue indirectly encourage students to think critically where students initially were forcing themselves to think. In addition, students' confidence in answering questions will encourage other students to be more motivated to think critically because peer influences often provide students with an indirect boost.

The Socratic Method Learning Environment may involve the use of technology as the present era of technology is booming. The purpose of technology is to make the students more motivated to engage in learning (Granito, 2012). Involvement of students in the teaching and learning process is a very important matter to be taken into account. If student engagement is not satisfactory, indirectly teacing and learning objectives will not be successfully achieved. Therefore, when the online Socratic Method Learning Environment can be implemented, students can participate simultaneously (together) compared to routine learning environment which is implemented on a rotational basis. Learning environment will become even more attractive and will also encourage students to give opinions without restraint.

CONCLUSION

Based on the description above, it clearly shows the presence of technology in education has become a priority to encourage,

stimulate and motivate students while learning. With the use of technology, previous studies concluded that the learning process can be done more easily by teachers, particularly to monitor, respond and communicate any information to students. According to the study, when critical thinking can be learned then it will be extended to students who have problems in creating thought because not everyone has the same level of thinking and it can be developed through Socratic Method of learning as discussed.

However, a dominant part of learning is in presenting a concept, while technology is a medium that helps to ensure the success of such learning. Compared with previous studies where Socratic Method was applied in person, this study aims to combine the Socratic Method of learning with technology which can be implemented online.

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