

The Use of Socratic Method as a Teaching/Learning Tool to Develop Students' Critical Thinking: a Review of Literature

Pezhman Zare & Jayakaran Mukundan

Abstract

This paper reviews the literature on Socratic Method as a teaching/learning tool to enhance critical thinking skills. It starts with a short history of Socratic Method by introducing its founder and briefly provides an overall picture of the method. Then, a number of definitions of critical thinking is presented and discussed. Next, taxonomy of Socratic questioning is presented. The taxonomy provides a detailed description of questions that can be used when employing Socratic Method. Afterwards, a number of previous studies are reviewed to show the influence of Socratic approach on critical thinking skills. Finally, a brief conclusion will close the paper.

Keywords: Socratic Method, Critical Thinking, Questioning

Introduction

Socrates was a Greek philosopher who is renowned as one of the creators of western philosophy. He is also known as the founding father of a teaching/learning approach which is fueled by questions. Socratic approach follows a chain of orderly and structured questions which assist learners to become aware of their weaknesses in thinking, lack of knowledge, wrong inferences, and false hypotheses. This teaching/learning approach does not follow conventional way of teaching in which students are required to do memorization, read textbooks, listen to lectures, and sit for tests. In this method, instructors raise questions to help learners improve their deep and critical thinking and gain better understanding of topics and ideas. Through this approach of instruction, there are no ultimate answers for the questions that are being raised. As a matter of fact, the person who brings up these questions is not looking for such answers. The idea is to motivate and inspire reflection. Copeland (2005) explains that it is important for

teachers to clarify that these questions are not intended to create an environment of judgment, but rather to help students “examine their attitudes, beliefs, knowledge and logic” (Copeland, p.14).

According to Socrates, throughout the course of discussion and conversation “where all parties to the conversation were forced to clarify their ideas, the final outcome of the conversation would be a clear statement of what was meant” (Byrne, 2011, p.13). Socratic Method of instruction goes back to very old times and apparently was created based on Socrates’ idea that lecturing is not an efficient method of instruction for every learner. Socrates appreciated the experience, understanding, and information that people already had gained and believed that this knowledge is valuable, has a lot of potential, and can be used to develop awareness and wisdom. The philosopher strongly believed that learners can develop and promote reasoning skills and finally progress to more logical thinking and ideas which are supported by rationales and logics (Byrne, 2011). It is believed that philosophical and deep questions which are also an integral part of Socratic Method help improve cognition as the method triggers figurative thinking (Sigel, 1979; Rosnani, 2009).

Sigel (1979) claimed that Socratic questioning helps improve cognition as the method triggers figurative thinking. Socratic discussion is not a roundabout talk or a type teaching method in which the instructor raises a question and the learner responds to it and finally the instructor gives an answer in her ultimate remarks. Based on Socrates’ method, the real job of an instructor is to assist students to gather their opinions and thoughts and construct original thought from prior understanding. Socratic discussion is a useful technique which can assist individuals to differentiate rational viewpoints from unreasonable ones. Throughout Socratic discussion, the learners are guided and assisted to make novel discoveries, so the purpose of questioning is not only restricted to assessment of the students’ knowledge level, but building new stages of thinking to unveil inconsistencies and contradictions. The Socratic Method requires the instructors to give up their job as a conventional teacher who delivers the contents of the course but try to get the learners involved with the materials.

Critical Thinking Skills

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Critical thinking has been defined in many ways. The distinguished educational expert Dewey (1933) refers to critical thinking as reflective thinking, and proposes that it must be one of the aims of education. One of the most frequently referred to definitions of critical thinking is one used by Ennis (1987), who has similar views to Dewey. Ennis defines critical thinking as “reasonable reflective thinking that is focused on deciding what to believe or do” (p. 10). Norris (1985), in much the same vein, defines critical thinking as deciding rationally what to or what not to believe. For Dewey, Ennis, and Norris, critical thinking is about being careful and reflective when making decisions to believe something or do something.

A more recent perspective on critical thinking involves the use of intellectual standards. Paul & Elder (2002), for example, refer to critical thinking as an art through which an individual can make sure that he/she makes use of the best thinking in any kind of situations. “The general goal of thinking is to figure out the lay of the land. We all have choices to make; we need the best information to make the best choices” (p.7).

Paul & Elder (2002) believe that critical thinkers have a basic ability to take charge, to develop intellectual standards, and to apply them to their own thinking. They suggest there are nine criteria generally used: Clarity, Relevance, Rationality, Accuracy, Depth, Significance, Precision, Breadth, and Fairness. Critical thinkers should apply these criteria as minimal requirements when they reason.

Other educationalists consider critical thinking to be about skepticism. McPeck (1981), for example, suggests that the essence of critical thinking is “the propensity and skill to engage in an activity with reflective skepticism” (p.8). Similarly, Sofo (2004) believes that thinking critically is about doubting and starting to reconsider what we normally take for granted. Sofo (2004) sees critical thinkers as people who evaluate their habits to improve the way they do things. They are people who are open-minded and who take into consideration other perspectives.

How to Implement Socratic Method

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Paul & Elder (2007) emphasize the importance of questioning and the kinds of questions in Socratic approach in order to cultivate the disciplined mind and critical thinking skills. They state that raising analytical questions is very important and foundational to probing reasoning and comprehension. To be successful in thinking, one should be able to identify the elements of thinking by bringing up questions focused on those elements. Paul & Elder (2007) state that when instructors regularly employ the tools of critical thinking, the Socratic discussions get more productive and disciplined in which the students get to know the significance of questioning in learning, and then they would be able to create and follow deep and important questions in other classes and in various parts of their lives.

Besides, in a prominent taxonomy which was provided by Elder & Paul (2007), it is claimed that disciplined and skilled individuals with critical thinking skills clearly make use of intellectual standards each and every day. These individuals understand it once other people or they themselves stop using those standards. They regularly raise questions particularly to target these standards. Yet, most people are unaware of them. These standards include “clarity, precision, accuracy, relevance, depth, breadth, logicalness, and fairness” (p.32). Focusing on these standards, Elder & Paul (2007) provided this taxonomy which can serve as a guideline to promote and develop reasoning and critical thinking skills. Socratic questions are classified into six types of questions in this taxonomy which is presented in the following table.

Table 1: Elder & Paul (2007) Socratic Questioning Taxonomy

Types of questions	Objectives	Examples
1. Clarity	The individual is inquired to elaborate, illustrate, and exemplify his/her viewpoints.	<ul style="list-style-type: none"> • Can you provide more elaboration on the topic? • Can you give an example?
2. Precision	The participant is asked to be more precise by providing more specific details.	<ul style="list-style-type: none"> • Can you please give more details? • Would you please be more explicit?
3. Accuracy	Argue the accuracy and/or trustworthiness of viewpoints and beliefs.	<ul style="list-style-type: none"> • How can we ensure that it is true? • How can I validate the claimed facts? • Are these data dependable considering the debatable source?

4. Relevance	Focus on the relevance and try to make sure that all considerations used in addressing any thought are genuinely relevant to it.	<ul style="list-style-type: none"> • How the support is relevant to the question? • Please explain the link between supporting thought and the question raised.
5. Depth	Examine the depth of thinking and determine whether the questions involve complexities that must be considered.	<ul style="list-style-type: none"> • Is the question complicated? Is it hard to answer the question? • What makes the question difficult?
6. Breadth	Argue breadth of thinking, ensure that the individual takes all possible viewpoints into account, and leave no perspective unconsidered.	<ul style="list-style-type: none"> • What viewpoints are applicable to this matter? • What pertinent opinions have been overlooked so far? • Have the contrasting perspectives been examined reasonably?

Elder & Paul (2007) state that although the questioning strategies can be easily practiced and employed, it is essential to understand that improvement in the Socratic questioning abilities take place by dedicating enough hard work and practice in an extensive period of time. All in all, the Socratic questioning and discussion approach is capable of improving critical thinking skills, oral communication ability, question construction skills, and argumentative skills among students. It also helps build students' self confidence in speaking in English (Walker, 2003; Yang, Newby & Bill, 2005; Rosnani, 2006; Oradee, 2012).

Socratic Questioning and Critical Thinking

According to Paul & Elder (2007), Socratic questioning is an art which is closely linked to critical thinking because it is vital to the brilliance of thinking. The term "Socratic" adds depth, systematicity, and a long-lasting curiosity in evaluating the reality or plausibility of viewpoints to the art of questioning. Both Socratic discussion and critical thinking have a common goal. The conceptual tools, which are necessary to understand how the mind works, are provided by critical thinking (in its search of truth and meaning). Socratic approach makes use of those tools to frame questions vital for finding the truth and meaning. The objective of critical thinking is to build an extra layer of thinking and a strong internal voice of reason. Socratic

discussion cultivates that voice by clearly paying attention to self-directed, disciplined questioning.

Tienken, Goldberg, & DiRocco (2009) focusing on the cognitive disposition of questions claim that there is a distinction in cognitive procedures between questions which draw out recall or and questions that inspire deep critical thinking. As they stated, questions are either productive which focus on higher order thinking (analysis, synthesis, evaluation categories) or reproductive which focus on lower order thinking (recall, comprehension, application categories). The former gives the learners a chance to generate, assess, or analyze. These types of questions are usually divergent and open-ended. The latter makes the learners to remember something or use knowledge delivered by the instructor. These questions usually come with one correct answer and are normally convergent (Tienken, *et al.*, 2009). According to Tienken, *et al.*, (2009) the results of several studies show that higher order questions have effects on learners' accomplishment and development of critical thinking skills.

Chorzempa & Lapidus (2009), employing Socratic Method among their students, discovered that students learn to discover evidence in the text, use questioning to analyze the text, and also write an answer showing the major elements of the story. They stated that the skills assist the learners to get prepared to reply to a document-based question. After using Socratic discussions, it was noticed that the students “felt more comfortable sharing their ideas, encouraging one another to think out of the box” (p.58). Chorzempa & Lapidus (2009) believe that one of the most important outcomes of holding the Socratic discussions was to see the students learn to willingly reply to each other's points and questions in a positive and friendly manner, trying to be open-minded, listen, and examine others' perspectives without attacking each other just because of holding different opinions that are not agreeing with their own points but critically assess their point of views.

In another study conducted by Hong & Jacob (2012) in Malaysia, the researchers made an attempt to use Socratic questioning approach in an online discussion forum to help improve students' critical thinking skills. The research participants included sixty undergraduate students

from Swinburne University of Technology in Sarawak, registered for a mathematics subject. The students took part in online discussions for two times. The first discussion was held in the fourth week, and the second one took place in the tenth week. Each discussion took about one week. The course lecturer moderated the discussions by providing Socratic questions. Quantitative and qualitative data was collected to determine the efficacy of Socratic questioning during the online discussions. Both qualitative and quantitative data came from the students' postings on the discussion forum.

According to the results, the participants' postings indicated low or moderate level of critical thinking. Although most of the respondents showed critical thinking skills to some extent, a limited number of postings reflected high levels of critical thinking on a consistent basis. However, the students' critical thinking scores showed a slight improvement from the first to the second discussions. It is worth mentioning that critical thinking is a construct that may change and develop over time (Darby, 2007; Gerverey, Drout, & Wang, 2009). However, the study conducted by Hong & Jacob (2012) employed only two sessions of Socratic discussions among them during two weeks. Therefore, the students' critical thinking skills did not show significant improvement.

However, the results of a study by Shahsavar, Tan, Yap, and Bahaman (2013) showed that Socratic Method significantly improved students' critical thinking skills. They conducted Socratic discussions among forty undergraduate students for 14 weeks. The students had Socratic discussions twice a week, online and face to face. The lecturer acted as a facilitator. The research participants were divided into small groups of four or five members. According to the results, the students' critical thinking skills showed significant improvement as a result of participation in Socratic discussion. Accordingly, it can be claimed that the types of Socratic questions and the number of discussions are among important factors that should be considered when implementing Socratic Method.

Conclusion

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One of the most important purposes of higher education system is to train learners to think critically, and educators have also continued to focus on the development of critical thinking skills in students (Scott, 2008). In addition, studies suggest that employers nowadays show more value for the members on their staff team who are capable of solving difficult issues and thinking critically (Gokhale, 1995). In this regard, the results of previous studies showed that Socratic Method is a teaching/learning tool that has a significant potential to develop students' critical thinking skills, as well as critical reading and listening (Byrne, 2011; Tienken, et al., 2009; Paul & Elder, 2007; Ennis, 1987). These studies, among others, emphasize the importance of questions being raised during the discussion. Appropriate questions direct students' thinking below the surface, make them think deeply and critically, and promote higher order thinking (Elder & Paul, 2007).

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