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Online Learning and Socratic Method in Increasing Self-Motivation: A Literature Review

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Abstract – Independent students who are capable of learning by themselves are hard to find nowadays. Normally, most of the students would require some motivation to learn; either from their peers, teachers or parents. Self-motivation is an ability to do what needs to be done, without influence from other people or situations. Therefore, self-motivation plays a crucial role in the students' knowledge attainment and academic achievement. Hence, it can now be delivered through the use of technology, making learning more fun, addictive and faster knowledge acquirement for these students. We suggest the use of the Socratic Method as a form of providing self-motivation through the usage of an online platform. Meanwhile, through the Socratic Method of questioning, students will have to practice deep thinking which paves the way to the construction of a new knowledge and helps them generate more meaningful ideas and robust answers. The Socratic Method with online approach will also encourage the students to interact with other students; without the limitation of time or location. This concept paper will analyze previous studies that are related to the Socratic Method of learning and online learning; whilst looking at the impact of Socratic Method of learning and online learning in increasing students' self-motivation consequently encouraging independent learning among these students.

Keywords- *Socratic Learning; Motivation in learning; Technology in Socratic Method; Online learning; Self-motivation*

I. INTRODUCTION

It is natural for students in their early teens to eagerly learn new things from their surroundings due to their growing curiosity. This value can be either fostered or suppressed by teachers or educators. Teachers play great roles in helping students to become motivated, active and to think constructively. Motivation is known as one of the contributors of students' achievement [1]. Nowadays, educators should focus more on creating an active learning environment because this helps generate self-motivated students and increase achievements.

Socratic Method of learning is a process of creating an active learning environment by having exchanges of queries and responses between students and teacher. However, some students are being left out during the question and answer session due to low self-motivation. Such problem can be avoided by implementing a Socratic learning method using technology. Examples of technologies that can be

adapted to implement this learning are online learning where all interactions can be done electronically and can be recorded. Apart from being able to increase student motivation [2], the use of this technological medium, encourages students to voice out their opinions without limitation thus encourages engagement in the class.

II. BACKGROUND

Opportunities to communicate well and active learning space are important criteria that must be given to the students in the learning process. However, a teacher who has to deal with a big crowd of students normally manages to pay attention to only some of them; particularly those who are actively involved. This is due to the time constraints and the need to complete the syllabus as planned.

Realistically, more time is required to assist weaker students as they would take longer time to answer questions, feeling less motivated and embarrassed to provide wrong or less accurate answers. A mechanism that allows students to answer questions without having fear or feeling embarrass could really help weaker students. On this basis, the role of technology is needed to motivate the students to answer questions and to let them involve thoroughly in the process of learning.

III. LITERATURE REVIEW

A. Online Technology In the Process of Learning

Online learning is a form of technology that can be utilized in the field of education. According to [3], technology is one approach to develop knowledge more effectively as well as to solve related problems. The term "online" refers to "connected to and under the control of a central processor" which means any activity that is normally carried out in a computer or other electronic device as well as information that can be sent and received online by internet with the purpose of learning and so on.

The use of technologies; particularly that of online technology, has strongly given a positive impact on students [4], for example, students able to interact with other students

and even teachers without meeting face to face and teachers are able to facilitate the learning process with ease. Nevertheless, the most interesting part is that online learning abilities to increase student motivation during the learning process. This is closely related to this study of increasing students' motivation.

B. Studies of online learning on student motivation

This section will provide an analytical review of the extent of the impact of online learning to increase student motivation.

TABLE 1: ANALYSIS REVIEW OF ONLINE LEARNING ON STUDENT MOTIVATION

Research/ Author	Purpose	Findings
[5]	Effects of web-based learning environment to motivate students in grade 10 science subjects	<ul style="list-style-type: none"> - students more easily understand the concepts / processes which occur in abstract sciences - Teachers act as facilitators and students are more motivated to learn the next step. -they are more interested in seeing the animation compared listening to the accompanying explanation
[6]	Improving the Motivation and Retention of Online Students Through the Use of ARCS-Based Model	<ul style="list-style-type: none"> - Students can enhance motivation when receiving motivating email - Through the ARCS model, students can retain their lessons longer.
[7]	Observing the learning process through the web in increasing student motivation. See which tasks that can fully involve students with ARCS model.	<p>Findings based on ARCS Model</p> <ul style="list-style-type: none"> - Attention: students can remember and be aware of all course activities in the web - Relevance: students can interact with friends and can build more professional conclusions -Confidence: Students can master higher-order thinking when they are more motivated and confident - Satisfaction: While students complained in completing various tasks, they were satisfied because they managed to gain many benefits through the interaction.
[2]	Assessing the impact of technology on student motivation to learn new information and retain existing information.	<p>Students from experimental group (A) that uses computer-based learning can accomplish the tasks given faster and with more quality compared to the control group (B) which was learning in a conventional manner. Group A is also more motivated to learn than group B. Implications for teachers: teachers find it easier to teach a difficult concept and students should be able to use technology to get information about what they have learned.</p>
[8]	The analysis of how learning using multimedia can effect students' interest and positive emotions.	<p>The discussion shows that students' interests and emotions can construct their motivation for learning something with high level of inquiry. Students also have access to high cognitive ability upon the encouragement of self-motivation.</p>

A study by [5] conducted on grade 10 students in a school which is equipped with computer technology, including laptops and internet networks. Purposive sampling method was used to increase student motivation and learning achievement results from the cooperation between science teachers and students. A total of 27 students were selected from two classes and they focused on 6 people of every class to be interviewed in detail. The instrument used is observation, interviews with teachers and students as well as questionnaires. The design of this study was supported by a quantitative and qualitative data. Overall findings show that students who are in a web-based learning environment can improve the motivation as well as their achievements.

Research by [6] aims to increase student motivation by using Model ARSC via email. Respondents involved a total of 153 students from the University of Texas, however, only 124 students successfully complete the course which consisted of 52 boys and 67 girls. This study involved an experimental group and a control group. Emails containing a motivational message were sent to respondents in the experimental groups in intervals of two weeks during one semester. At the end of the semester, respondents were required to answer a questionnaire prepared concerning the level of students' self-motivation. The results showed that students who regularly received words of motivation through email did increase their motivation for learning. The advantages of this study indicated that there was a huge impact on students even though the cost was very low and easily applied.

A research by [7] conducted a study of 40 students from Fu-Jen Catholic University, Taiwan, consisting of 17 boys and 23 girls. His research aims to look at motivation driven by the use of web-based courses. In this study also, Juan wanted to see the level of confidence and satisfaction of students when using the web as a platform for learning. Data was taken from the assignments given to students through the web along with reference materials. There is also space for students to discuss and interact to enable collaborative processes to occur. The time taken to carry out this study was 12 weeks as it is entirely qualitative data. The data were gathered from interviews and by ARSC model, results show that students can remember and be aware of all activities in the web courses in aspects of attention. Students can also interact with friends and can build a more professional conclusion of relevant aspects. While in the Confidence ratio, students can master higher-order thinking when they are more motivated and confident. The final aspect of ARSC model, namely Satisfaction, showed that although students complain when completing various tasks, they were satisfied with the job as they gained the achievement through that interaction.

A research by [2] conducted a study on 102 grade seven students aged between 12 and 13 years consisting of 50 boys and 52 girls in a secondary school located in New Jersey. The students were separated into two groups, the treatment group (A) and a control group (B). The aim of this study was

to investigate the effect of technology on students' motivation to learn new information and retain existing information. This study took four weeks and the data were quantitative and qualitative. Quantitative data were obtained from the pre-test and post-test, while qualitative data is gathered through a structured interview for the purpose triangulating the findings. Students in group (A) that used computer-based learning accomplished the tasks given faster and with more quality compared to the group (B) who used conventional learning. Group A were also more motivated to learn than group B. What this means for teachers is that with the use of technology, it is easier to teach a difficult concept and students should be able to get information about what they have learned.

Through the concept paper discussed by [8], he explained how using multimedia learning affects students' enthusiasm and positive emotions. The results of the analysis are discussed; he found that students' interest and emotion can construct their motivation for learning something with a high level of inquiry. Students also have access to enhanced cognitive skills when given the encouragement of self-motivation.

From previous studies, which have been discussed, it is found that the use of technology in education can help increase students' motivation to achieve better rankings. However, the earlier research suggests that, in order to deliver motivation successfully, for an example, teachers need to continuously trigger students mind through a series of questioning technique, and this method relates very much with the Socratic Method.

C. Socratic Learning Method

Socratic Method was introduced by the Greek philosopher Socrates, circa 470-300 BC, known for its way of thinking through the questions and giving arguments for each answer. The main concept in the Socratic method of teaching is the teacher raises many questions and through the questions, students are encouraged to think in order to answer the questions. Socratic method emphasis on encouraging students to think and to construct their own learning. Thinking makes students inquisitive, or simply put, encourage a higher level of curiosity [9].

One approach that is often used in the study is the Socratic dialogue. The purpose of dialogue is to discuss a problem to find a solution that is more diverse and it leans more towards independent learning [10]. Usually the dialogue is an interaction between two individuals, but when learning occurs in the classroom, teachers change the interaction to having the dialogue in a group. The teacher's role is to be a facilitator for the group and ensure that the group is always in dialogue by debating until all questions can be solved [10]. All the arguments raised by the constructs will be synthesized to achieve an optimal solution. The same concept also exists in the Socratic Seminar, a series of questioning techniques with logical

answers that constructs an argument and a conclusion. This technique will stimulate thought, to think more critically [11]. Through dialogue, every member of the dialogue is going to feel compelled to either give an opinion or to ask something. This helps increase cognitive load and critical thinking because the questions stimulate students' brains to think.

The Socratic Method is not a solely method to answer questions, rather it is a method that requires research, reading, and thinking and gives arguments that can lead to answering the questions [12]. The difference between dialogue and debate is very significant because both go through a different process. Table 2 shows the differences between dialogue and debate.

TABLE 2: THE DIFFERENCES BETWEEN DIALOGUE AND DEBATE

Dialogue	Debate
<ul style="list-style-type: none"> • A collaborative process by sharing their understanding • Discuss to find a solution • Have an open mind and rational thought for an opinion • Achieve progress and understanding in favour of all parties 	<ul style="list-style-type: none"> • Two different groups of opinion between supporters and opposition • Provide arguments to find opponents' weaknesses • Are not open minded because the main focus is to enforce their views • Resolution is in favour of the ability to give good arguments even though sometimes it is not appropriate to apply in certain situations

Socratic method of learning is not a common method in class discussions where eventually the teacher will give students answers after reaching a dead end, rather it is a process of interaction between teachers and students that allows students to be more involved than teachers. After reaching a situation of students being unable to provide a response, the teacher will help to provide questions that can re-open the minds of students to think [13]. Socratic Method also can make students become more active which is in line with the concept of student-centred active learning [13]. According to [14] again, there are several important roles of teachers when carrying out this Socratic method of teaching. Teachers should:-

- ask students to respond by providing relevant examples
- ask student to get support or approval from the members of the group with an opinion or answers.
- propose an example similar to that of the current situation
- give an analogy in describing a concept

Student motivation will also increase with the use of Socratic methods, for instance the level of students' self-confidence will grow gradually when they are able to answer the questions posed. Since the concept of Socratic focused on methods of questioning, students are encouraged to think and solve problems.

D. Studies On The Effect Of Methods Of Questioning And Socratic Methods Towards Students' Motivation

This section will analyse previous studies related to methods of questioning and Socratic methods used in learning could increase student motivation.

TABLE 3: ANALYSIS REVIEW OF SOCRATIC METHOD ON STUDENT MOTIVATION

Research/Author	Purpose	Findings
[15]	A case study on the review of the three grade 7 students involved with Socratic seminar learning methods in enhancing self confidence in mastering the content and the ability to answer questions.	-These first findings showed that students who are involved with learning Socratic methods can be motivated in learning and concentrating in class. -The second student said he was more confident in answering the questions posed. -The third student stated that it is easier to collaborate because questioning will stimulate the brain to think.
[16]	Reviewing the relationship between students' perceptions of teacher support in questioning as well as significant components in learning motivation, such as efficacy, mastery goals and performance	-The results showed that students who are not able to answer questions; when receiving encouragement from teachers, are more excited and motivated to try to answer. -Teachers did not give answers. Instead the questions were modified so that students easily understand what the question required of them. -Teachers' reception is very important because in effect, students may be more motivated or not .
[17]	research to find differences in the motivation of students when teachers use socratic seminar teaching methods or traditional methods	-The findings show that learning using socratic methods make students more motivated and focused on learning. -Students are also more actively engage in learning when socratic method is used.

A fully qualitative study conducted by [15] focuses on three seventh-grade students to undergo a Socratic learning methods process. The three students said they felt learning through the Socratic methods allowed them to be scholarly in their socializing which will continue to stimulate their thinking to a higher level. The findings also indicated that apart from an increase in motivation, students are also more likely to be active in class. Previously, students will usually be passive when teachers teach, but through this method, students will indirectly become active to answer questions. This study can also prove a learning theory which states student-centred learning can improve performance because they construct their own idea of understanding. According to

this study, learning Socratic Method can motivate students because it has features such as attention, relevance, confidence, satisfaction, talk, peer collaboration, control, safety and positive student-teacher relationship. These features will affect students' motivation to be enthusiastic about learning.

Research by [16] focused on questioning methods which is the key element of Socratic Method. In this study, he looked at the relationship between students' perceptions of teacher support reaction in question as well as a significant component of learning motivation as efficacy, mastery and performance goals. Respondents involved are 32 undergraduate classes of 1558 students with 52% being girls and 48% boys. This study involves the design and use of quantitative method using survey and data analysis using structural equation modeling (SEM). The results showed that students, who are not able to answer questions, but receive encouragement from teachers, shows that students are more excited and motivated to try to answer the questions given. Teachers did not provide answers instead, questions were modified so that students able to easily understand the requirement of the questions. Also, the reaction of the teacher like facilitate and simplify the question given, is very important as it has an effect toward students' motivation.

Research by [17] is in the range of opinions concerning the differences in the motivation of students when teachers use Socratic seminar teaching methods or traditional methods. In this study, [16] included as many as 130 students in 11th grade high school from Orange County, California. His research questions cover the differences between Socratic Method and traditional methods that uses chalk and talk, in increasing students' self-motivation. This study also looked at the activities of students during the learning process. The findings show that learning with Socratic methods motivates students where students are more actively engage in the learning process.

IV. DISCUSSION

Based on the discussion about online learning and the Socratic Method, it can be seen that the two approaches can be combined to enhance student motivation; specifically self-motivation. The implementation of the Socratic method within the online medium able to encourage students to learn independently and frequently. Also, promote critical thinking through problems solving. Nevertheless, it is important to acknowledge that combining Socratic Method and online learning will help to make the learning successful. According to [18] with Socratic method in online learning, students will be motivated and will be keen towards "self-discovery learning" thus overcoming barriers in learning While [19] states that, students' self-motivation will increase as the Socratic method can be implemented with a "virtual classroom setting" (VCS). This suits for

students who are in a weak, as this will elude them from a situation of "direct eye gazing" by teachers and fellow students, as such resulting in demotivation or decreased morale. This matter supported by [20] who states that online classroom can facilitate students to master a concept more efficiently. When the students' self-motivation increases, then easily internal barriers such as shame and fear in students can be contained making learning more effective. Refer to Figure 1 for the simply correlation to integrate Socratic Method and online learning.

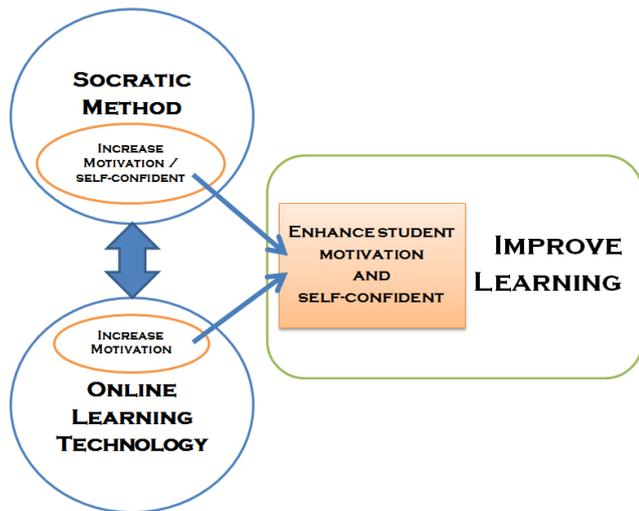


Figure 1 : Correlation of Socratic Method and Online Technology in improving Motivation

V. CONCLUSION

Based on the description above, it has been clearly shown that the presence of technology in pedagogy has become a priority to encourage, excite and motivate students. With the utilization of technology, previous studies concluded that the improvement of student motivation and learning process can be done more easily by teachers, particularly to monitor, respond and communicate whatever information to students. As proven by the past studies, As proven by the past studies, student achievement and self-confidence increased when their motivation improved

Difference from previous studies, this study suggests combining the Socratic Method with online learning technology. It is also important to acknowledge the interactions taking place within the online learning as they reflect students' motivation that leads to higher thinking skills.

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