

ICMC 2023**The 3rd International Conference on Management and Communication****EXPLORING CRITICAL QUESTIONING AMONG IN-SERVICE
ESL TEACHERS USING SOCRATIC QUESTIONING TECHNIQUE
(SQT)**

Aizan Yaacob (a)*, Zulkefli Bahador (b), Wan Fatimah Solihah Wan Abdul Halim (c),
Siti Noor Ismail (d), Norlena Hasnan (e), Ratnawati Mohd Asraf (f)

*Corresponding author

- (a) Universiti Utara Malaysia, Kuala Lumpur, aizan904@uum.edu.my
- (b) Universiti Utara Malaysia, Sintok, Kedah, Malaysia, zolkefli@uum.edu.my
- (c) Universiti Utara Malaysia, Kuala Lumpur, wfsolihah@uum.edu.my
- (d) Universiti Utara Malaysia, Sintok, Kedah, Malaysia, siti.noor@uum.edu.my
- (e) Universiti Utara Malaysia, Kuala Lumpur, norlena@uum.edu.my
- (f) International Islamic University Malaysia, ratnawati@iium.edu.my

Abstract

The development of pupils' critical thinking depends on their ability to ask thoughtful questions. Although the advantages of critical questioning to develop students' critical thinking abilities have been widely recognized, teachers' poor questioning abilities become the main area of concern among educators. This paper aims to highlight this issue by exploring the use of Socratic Questioning Technique (SQT) in enhancing in-service teachers' critical questioning skills when writing reflections. An Action Research Design was adopted using multiple methods such as interview, document analysis and reflections. 13 in-service ESL teachers who enrolled in a one-semester Master of Education course with a focus on English Language Teaching participated in this study. This action research involved three phases which are: problem identification, intervention and evaluation. Two moments of intervention were conducted using Gibbs' Reflective Model and Socratic Critical Questioning techniques. The data were analyzed thematically. The findings revealed that SQT managed to enhance their critical questioning technique as they started asking variety of questions such as clarification, evidence, reasoning and implication questions during the intervention. The interview also showed that they learned to be more critical, they knew how to ask critical questions and they also became more confident in giving feedback to others. In other words, SQT trained these teachers about dialogic skills which are pertinent for fostering the capacity for critical thought. Thus, SQT should be incorporated in Malaysia's teacher education system.

2357-1330 © 2023 Published by European Publisher.

Keywords: Critical Questioning, ESL, In-Service Teachers, Socratic Questioning Technique



1. Introduction

Transforming the quality of teaching and learning by upgrading teacher's continuous professional development for the sake of maximizing students' outcomes, is a point that the Malaysia Education Blueprint 2015–2025 emphasizes extensively. Every student needs to acquire critical thinking, reasoning, creative thinking, and innovation skills, according to the Ministry of Education (MOE), as these are essential for their future. Additionally, they must also learn how to apply these abilities to generate new information and knowledge and to use good judgements in solving real life societal conflicts.

Despite all the efforts made by the MOE, the lack of critical thinking skills among students specifically in Malaysia has been widely acknowledged in past studies (Cheah, 2014; Fadhlullah & Ahmad, 2017; Sam & Jacob, 2012). These research have demonstrated that Malaysian higher education students still have poor and intermediate critical thinking skills, which makes it difficult for them to find satisfying employment. Therefore, many remained unemployed. Apart from the students' lacked critical thinking skills, the teachers' teaching quality has also been scrutinized. The MOE is concerned in improving the quality of teachers as they are country's change agent in terms of human capital. Even though one of the goals in teacher education is to transform teachers by improving the quality of teachers in the country, according to research, most teachings are not delivered in an efficient way. A 2011 study by AKEPT indicated that just 50% of classes are being given in an effective manner, despite the fact that there are undoubtedly many brilliant instructors in the Malaysian educational system (MEB, p. 35).

2. Problem Statement

Critical thinking among students have been widely researched and acknowledged (Dalim et al., 2022; Xu et al., 2023). Additionally, problem-based learning, project-based learning, and inquiry-based learning are all excellent ways to foster students' critical thinking skills (Eggen & Kauchak, 2012; Wiggins, 2015). As a matter of fact, it has been argued that critical thinking should become one of the main key competencies and becomes part of the core of curriculum reform because students with critical thinking are able to solve real life problems. An experimental research conducted by Miri et al. (2007), revealed significant improvement in the students' capacity for critical thought when the teachers intentionally employ HOTS methods in the classroom. Research have shown that when teachers consciously use HOTS strategies in the classroom, the students' critical thinking skills significantly improve.

Research suggests that even though critical thinking is widely researched in various disciplines such as Social Sciences, Arts and Humanities, Psychology, the pedagogy in teaching and enhancing critical thinking skill among students and teachers are still limited. Mohamed Nor and Sihes (2021) reported Social sciences contribute to critical thinking research (48.64%) followed by Arts and Humanities, Psychology, nursing, medicine engineering etc. In their literature search, the network analyzer indicated a strong link to keywords such as 'teaching, students, critical thinking skills'. However, there are minimal use of the anticipated terms, such pedagogy, problem-based learning, or critical thinking attitude. Therefore, they argue that "it is a proof that the experts still have to work hard to create awareness about the importance of infusing critical thinking among practitioners in teaching

pedagogy and their disposition” (p. 203). To promote critical thinking in the classroom, more research must be done on the critical questioning abilities and teaching pedagogies of instructors. Kuhn and Dean (2004) came to the conclusion that little is understood about critical thinking and how to encourage it.

Research on teacher’s questioning techniques in developing students’ thinking skills, on the other hand, is not new (Etemadzadeh et al., 2013; Espina, 2022; Mustika et al., 2020). While teachers in East Java used both low-order and high-order questions, Mustika et al. (2020) analysis of the level of questions they used and how it affected students' critical thinking found that some questions, particularly the lower-order thinking questions, did not help students think critically. Etemadzadeh et al. (2013) investigated the use of questioning techniques to encourage students to think critically before writing. They found that after two weeks of treatment, participants showed a 17% improvement in their writing ability, suggesting that questioning techniques are useful for inspiring students to write. Espina (2022) discovered good effects of the strategies used in another study she did to examine the usefulness of Verderber, et al.'s critical evaluation and questioning techniques in boosting students' critical assessment and questioning behaviour. The students' critical questioning skills developed to the point that they learnt to clarify their questions, voice disagreement or contradiction, and assess the veracity of the speaker's claims and the accuracy of the material they were given. The academic asserted that it students became more engaged learners, assured presenters, and critical thinkers, according to the researcher. Therefore, they claimed that teaching students how to critically evaluate information and ask probing questions can improve their critical thinking abilities and raise engagement (Espina, 2022).

In relation to the Socratic Questioning Technique (SQT), many studies have looked at SQT as a tool in clinical and applied behavior (Venkatesan, 2020; Vittorio et al., 2022) and found positive impacts of it on the participants’ behavior. Venkatesan (2020) used case vignettes as both quantitative and qualitative descriptive approaches through clinical interviews to illustrate the application of Socratic questioning in analyzing problem behaviours in children. According to Venkatesan (2020), participants may better understand themselves through the use of clarification questions, questioning assumptions, reasons and evidence, viewpoints and perspectives, and questions about questions. These techniques also aided in self-discovery and self-healing similar to this, Vittorio et al. (2022) asserted that through cognitive shift, Socratic questioning enhances the therapeutic benefits of CBT. Their study offers preliminary support for the idea that using Socratic inquiry is crucial for patients who enter treatment with very poor CBT abilities.

The Socratic Method, utilised particularly in education, involves a dialogue between the instructor and the students in which the teacher asks probing questions to explore the underlying assumptions that inform the students' thoughts and opinions. Its goal is to promote critical thinking and active interaction, which will facilitate learning. In a collaborative conversation between the teacher and the students using the Socratic Method, the teacher takes the initiative by posing difficult questions. Students actively engage in the discussion by asking their own questions. The inquiry's goal is to elicit the underlying presumptions upon which each participant rests their claims and arguments. According to Knezic et al. (2010), The Socratic Dialogue develops dialogic abilities, which are crucial for interpersonal competency. Sorvatzioti (2012) contends that the dialectic method engages them in fruitful dialogue. The teacher serves as a guiding coordinator who encourages ongoing questioning among the students in order to help

them reach the "ultimate reasonable conclusion" through "logical inferential reasoning," throughout the problem-solving process. With the help of this method, students are able to see the educational content as a further collaborative tool that helps them comprehend the subject that was taught in class.

In Malaysia, Socratic Method has also been applied by teachers (Miri et al., 2007; Nadara & Chew, 2018; Saad et al., 2012; Zare & Mukundan, 2016). According to these studies, critical thinking skills and students' self-confidence in their questions and ideas have improved. One of the key factors that must be carefully taken into account while using the Socratic method is the teachers' capacity to pose insightful questions that prevent misinterpretation. Studies by Saad et al., (2012) and Nadara and Chew (2018), who found that instructors' poor questioning abilities are a key barrier to using the Socratic approach in the classroom, support this. They also discovered that teachers lacked both subject-matter and questioning-related knowledge, which prevented them from asking students high-level, open-ended questions that were suitable (Riffel, 2014; Vincent Hogshead, 2017). As a result, this research will add to the body of knowledge regarding the use of SQT to improve the critical-questioning skills of ESL teachers.

3. Research Questions

Awareness on improving the teaching pedagogy to infuse critical thinking skills of the teachers is highly recommended. Taking this issue into consideration, this paper attempts to present the findings of one part of the research by exploring the use of Socratic Questioning Technique (SQT) in enhancing in-service teachers' critical questioning skills when writing reflection. The bigger research project embarked on the following objectives:

- i. To investigate ways to help teachers reflect at a critical level
- ii. To examine the processes involved in learning to write critical reflection

This paper presents the findings derived from document analysis of online postings and reflections. The results of this study are supposed to advance understanding of ESL In-Service Teachers' questioning techniques.

4. Research Methods

In this study, an action research design based on Zuber-Skerritt (2001) was employed. Action research designs "are systematic procedures used by teachers (or other individuals in an educational setting) to gather quantitative and qualitative data to address improvements in their educational setting, their teaching and the learning of their students" (Creswell, 2012, p. 22). Acting, observing, reflecting, and refining a plan of action are all components of the action research method. The initial step in acquiring data was to identify and catalogue any existing issues with the topic of the study. More thorough literature was obtained during the second phase, often known as the "identifying" stage, in order to find a connection between earlier studies and the problems being confronted. The planning of the data gathering methodology and procedure comes next, along with the identification and selection of appropriate strategies that could aid the instructor in honing their critical-questioning skills. The

researchers took part in this action research as participants and worked cooperatively with the students to enhance the feedback procedures. The Socratic Questioning Method and improving the critical-questioning abilities of postgraduate students will be covered by the researchers in this paper.

4.1. Participants

This study involved 13 students who were enrolled in a Master of Education programme in English Language Teaching at one of Malaysia's public universities in the north. According to Creswell (2012), in a qualitative inquiry, a researcher "may select ordinary cases, accessible cases, or unusual cases" (p. 100). In the context of this study, the researchers utilised "purposeful sampling" based on accessible cases. The participants were made up of one male and twelve female students from various ethnic backgrounds, with teaching experience ranging from one to twenty years. To create focus groups, they were split into three groups of pupils. The decision was made based on 'friendship group' and 'voluntary' basis. The participant profiles in this investigation are shown in Table 1.

Table 1. Demographic Background of the participants

Group 1	Codes	Race	Gender	Experience (years)
1	Zain	Malay	M	More than 5
1	Jan	Indian	F	Less than 5
1	Zue	Malay	F	More than 5
1	Naz	Malay	F	Less than 5
Group 2				
2	Na	Malay	F	More than 5
2	Iqah	Malay	F	More than 5
2	Linee	Malay	F	More than 5
2	Som	Thai	F	More than 5
2	Fina	Malay	F	More than 5
Group 3				
3	Thilla	Indian	F	More than 5
3	Anis	Malay	F	More than 5
3	Sara	Malay	F	No experience
3	Etta	Malay	F	More than 5

4.2. The Course

For the Master of Education (English Language Teaching), there is a course called SGDB 6013 ELT Professional Concerns Seminar. This course covers crucial topics for English Language Teaching (ELT) practitioners, including teacher preparation, different education models (private vs. public), ELT administration, to name a few. This student-led seminar's major goal is to give them the opportunity to reflect deeply on one aspect of their professional experiences and on their professional experiences as a whole. Students are required to submit reflections on topics covered in class as part of the assessment.

4.3. Methods

Data were qualitatively collected from a number of sources, including online postings, peer feedback, researcher reflections, and student reflections.

4.3.1. Participants' reflections

In this study, participants were observed and asked to reflect on their reflective exercises. They had to do weekly reflections on the topics covered in class regarding English language teaching. Using emergent coding, data from their engagement and learning during in-class discussions and online were gathered. There were 27 reflections in total that were gathered and examined. The data were then transcribed, analyzed and arranged thematically. The participants' reflections were collected before, during and after training (after every class).

4.3.2. Peer feedback and online postings

The participants were encouraged to post their weekly feedback online such as using Whatsapp, facebook and email. They were asked to comment on their friends' reflections. The online postings might only be accessible to group members. Examining the type of feedback provided to their peers was the goal.

4.3.3. Researchers' reflections

Researchers looked at the participants' feedback and took it into consideration. This is essential since they had to determine the issues the participants were facing and devise a suitable solution to address them. In all, pre-intervention, during-intervention, and post-intervention reflections from the researchers were gathered. After every data analysis in each of the three cycles, the researchers also took stock of their findings.

4.3.4. Focus group interview

The participants in the focus groups were interviewed twice: once at the start of the study to look at the issues they were having when writing reflections and to investigate the different feedback practises, and secondly at the end of the study after the intervention to evaluate how much the intervention had improved their writing.

4.3.5. Data collection procedures

Three phases of data collecting were involved. A focus group interview with the participants was done in the first stage to discuss problems with writing reflection. For a period of two weeks, this was done. The action research cycles were carried out in the second phase. The researchers planned, took action, observed, and reflected during these procedures. Every week, reflections on the topics taught in class were expected of the students. They then published it online for review by other scholars and peers. They would revise their reflection in the subsequent class in light of the feedback. Each course included a

half-hour period for face-to-face revision of the reflection. In actuality, there were two rounds of intervention: the first using Gibbs (1988).

4.3.6. Data analysis

Thematic coding, which was used to analyse the data and provide the findings' summary, was based on concept-driven theme analysis (Braun & Clarke, 2013). SQT was used to analyse the nature of feedback in the students' reflections during collaborative feedback. The nature of questioning technique and feedback practices. The data were analysed using SQT as a framework of analysis (refer to Appendix 1).

4.3.7. Ethical issues and trustworthiness

Knowing there are many ethical concerns with qualitative research, the researchers carefully went over confidentiality concerns and the participant's right to withdraw from the study with them at the beginning of the study (Braun & Clarke, 2013). The researchers were able to protect the identities of the participants by assigning them pseudonyms, indicating that the purpose of the action study was to improve their reflective writing, and stating that the data would only be used for research. Action researchers frequently use critical friends (Anderson et al., 2007) peer debriefing. This is because they are active in the process on so many different levels and in so many different ways. Critical friends are typically peers or co-workers who are prepared to share their experiences with the researchers and work together to make sense of the data. The debriefing procedure gave an external review and provided new input to the study. Apart from that, methodological triangulation was also used to enhance trustworthiness of the study.

5. Findings

5.1. Students' perspectives on difficulty in giving feedback

During the focus group interview, the participants reported some difficulties in giving feedback to their peers which include: difficulty in giving constructive criticism, difficulty in asking critical questions, lack theoretical knowledge, lack confidence, trust, and culture.

The participants reported that they had difficulties in giving feedback to their peers based on a few reasons: they did not know how to give constructive criticism, could not ask critical questions, lacked theoretical knowledge, and lacked confidence to give feedback. The issue of trust was also mentioned where they were unsure whether their friends were truthful when giving feedback. Finally, cultural influence was also one of the factors mentioned whereby junior participants were a bit reluctant to comment on their senior counterparts. One of the participants mentioned that most of the problems faced by the participants was on 'how to give feedback' as they were not sure on how to give constructive feedback. Similarly, Zue mentioned that she had problem in 'developing constructive criticism'. Below are the responses provided by the participants.

5.2. Difficulty in giving constructive criticism

One of the main concerns raised by the participants is the issue in giving constructive feedback. Iqah mentioned that she was “quite uneasy in commenting others’. To her, writing reflection is somewhat ‘personal’ and when she was asked to give feedback to others, she felt unsure or not confident to give comments to others. Unlike Iqah, Zue mentioned that she had problem in giving constructive feedback because she did not want to demotivate her peers. She said, the “issue is we do not want to demotivate our peers”.

Most of the problems faced by our group members are more to how to give feedback. Normally, we treat reflection as somewhat personal. However, we are required to comment and give out feedback to other’s reflection. At first, we were quite uneasy in commenting others. After introduced to Socrates Questioning Technique, we are more confident to ask and give feedback to certain parts in the reflection. (Iqah)

Problem in developing constructive criticism- the situation or issue is we do not want to demotivate our peers. (Zue)

5.3. Difficulty in asking critical questions

The participants also mentioned about their difficulty in asking critical questions. Some participants could not construct critical or analytical questions. Some kept thinking about their grammar constrictions and some mentioned that they were not in the habit of asking analytical and critical questions, therefore it took some time for them to understand the technique. They also mentioned that culture somehow influenced their way in asking questions. They claimed that they tended to beat around the bush. In the extracts below, the participants described the difficulty they had in asking question. Jan for example said she had problem in giving opinion and asking questions to her friend’s reflection. Similarly, Fina said she was “weak in questioning technique” and that she could not “create questions”. In a similar vein, Etta mentioned that she did not know “what to ask” and “it was hard to be critical”.

My problem is I am having problems in giving opinions or ask question to my friend’s reflection. (Jan)

To give feedback also quite difficult as sometimes I don’t know what to ask. When I read my friend’s writing, everything to me looks fine. It’s hard to be critical.

The participants mentioned that they were not only concerned about what questions to ask but they were also worried about the sentence structure. Na said “I struggle on how to ask questions, what questions should i ask and i am also concerned about the sentence structure”. Similarly, Linee mentioned that it was hard for her to construct questions because “there are too many rules and regulations regarding grammar spinning in my brain which make me doubt with my questioning sentences”. Apart from that, it

took a while for them to get used to the Socratic Questioning technique as it is new and they needed more time to apply critical questions. Na said, “It is not in my habit to ask that kind of questions so i need more time and practice to adapt the questions when giving feedback”, while Iqah mentioned that “It takes some times before we could adjust to Socrates Questioning Technique”.

My problem in giving feedback is that I am very weak in asking questions. I struggle on how to ask questions, what questions should i ask and i am also concerned about the sentence structure.

Another problem that I face in giving feedback is the questioning techniques. Sometimes, I found it hard for me to construct questions. Perhaps there are too many rules and regulations regarding to grammar spinning in my brain which make me doubt with my questioning sentences. To overcome this, I seek help from my group members in term of giving corrective feedback. (Linee)

Another problem arose was how to question critically? It takes some times before we could adjust to Socrates Questioning Technique.

Another interesting viewpoint mentioned by the participants is the issue of culture which somehow influenced the way they give feedback to one another. Iqah stated that in her Malay culture, people did not comment directly, instead they “beat around the bush”. In the Malay culture, people respect each other and they would rather not comment directly in order to save face.

Previously, we focused more on technical aspect of reflective writing. I believe culture has strong impact towards how we give feedback to others. We have the tendency to beat around the bush instead of giving feedback on critical aspect straight away. (Iqah)

Anis mentioned that her friends had some difficulty understanding her questions as she claimed them to be of high level and hard to answer.

My friends have problems to understand my question. They claimed that the question are quite high level and hard to answer. (Anis)

5.4. Lack of theoretical knowledge

Another reason why the participants had difficulty in giving feedback was due to lack of theoretical knowledge. Thilla mentioned that she was not confident to give feedback because she could not relate the comments with some theoretical aspect. Thus, she felt that she had to read more and equip herself with more knowledge before giving comments to her peers. Zue claimed that she was afraid to give comments for fear of inappropriate and inaccurate information.

I think that I am having problem in giving comments maybe because I am lack of knowledge of theory. That related to the problem or any statements, that given by my friends in their reflection so I think that I need to read and get the knowledge about my problems first then give comment. (Thila)

Fear of the information appropriateness and accuracy. (Zue)

5.5. Lack of confidence

They also felt that they lacked confidence in giving feedback to others. Jan said that she “felt low self-confident to give feedback to her peers. She questioned her authority in giving feedback. I felt who am I to give comments or feedback to them”.

As a group member I am required to give fb but I’m not good in giving fb to others. I felt low self-confident to give feedback to my peers. I felt who am I to give comments or feedback to them. (Jan)

5.5.1. Trust

Anis reported the issue of trust when the name was not made anonymous. She was worried that her friends would be shy, embarrassed or even sensitive when she gave a lot of comments. This somehow influenced her feedback.

Apart from that, another problem that comes in when giving feedback is concerned is when the name of me (my name) who provides the feedback/comments is not made anonymous in the online system. Thus, it is kind of influencing the feedback/comments been provided as I am afraid that my friends will be a little bit shy, embarrassed or sensitive if I gave too many comments. (Anis)

5.5.2. Types of questions asked after applying SQT

Table 2 shows the types of questions asked by the teachers after using SQT.

Table 2. Frequency and types of questions asked after using Socratic Questioning Technique

No	Types of questions	Frequency	Percentage
1	Clarification	10	37.1%
2	Reason/evidence	4	14.8%
3	Implication	4	14.8%
4	Viewpoint	6	22.2%
5	Origin/source	2	7.4%
6	Assumption	1	3.7%
	Total	27	100%

As indicated in Table 2 there were 27 questions recorded from two groups with 4 samples of students’ reflections were analyzed. As can be seen, they used more clarification questions (37%), followed by viewpoint (22.2%), reason and evidence (14.8%), and implication (14.8%) types when giving feedback. To further elaborate on this, Table 3 illustrates the questions used by the participants.

Table 3. Samples of Question Types after using Socratic Questioning Technique

No	Cases	Questions	Question Types Based on SQT
1	1	Case 1 G1PostHAZIQAHA: why new ideas are important?	Clarification
		Case 1G1PostSHAFINAZ: why do you need to implement this context in collaborative relationships or partnerships?	Clarification
		G1PostHAZIQAHA: Could you share examples of your practices?	Reason/evidence
		G1PostSHAFINAZ: Do you think by sharing knowledge through this type of workshop will enhance teacher's skill in teaching?	Implication
		G1PostHUSNA: What is your suggestion to overcome these problem?	Viewpoint
		G1PostHUSNA: Can you elaborate more and give examples?	Reason/ evidence
2	2	G1PostDalinee: During the in house training. How do the teachers react? Is it one way or two ways communication?	Clarification
		G1PostDalinee: Tell us more about OPS English. Organize by whom? Purpose? Do the students practice knowledge sharing during the OPS English activities?	Clarification
		G1PostHaziqah: How far you have improved your teaching practice after practicing knowledge sharing with other teachers?	Implication
		G1PostShafinaz: How do you conduct this programme to your students?	Clarification
		G1 PostHaziqah: Do the senior teachers always help you in solving your classroom problem?	Clarification
		G1PostHaziqah: Why do you think they refuse to share knowledge with others?	
		G1PostShafinaz: How would you tolerate with teachers who do not like to share their knowledge with others?	Clarification
3	3	(what do you mean by in-house training? (good examples)	Clarification
		(this is your view/instance from your experience, so, what/how would other groups of people respond this question? Why?)	Implication
		(what led you to that belief? knowledge management well. I	Reason/evidence

admire her way in not giving up in whatever (what caused you to feel that way?	Origin/source
(why would someone make this assumption? I believe that this is the most...	Assumption
(add in some theory related to the influence of culture/environment) amongst teachers (why do you think this is true?	Origin/source
what is an alternative?	Reason/evidence
	Implication/consequence

In summary, the analysis indicated that the participants have managed to apply various types of questions in their feedback as opposed to the previous feedback given at the beginning of the study. Even though most of the questions were clarification and viewpoint questions, they have started to use evidence, reasoning and implication questions. To some extent, this exercise has increased their awareness on critical questioning techniques. They have somehow improved their questioning techniques. This is supported by the participants' reflections.

5.6. Students' Reflections after the use of SQT

Students' reflections revealed that they learned to create and ask questions and to give feedback. They also became more confident in giving constructive feedback to others.

5.7. Learned to give feedback

But, after using the Socrates Questions, it helps me a lot in giving my feedback. Hopefully with my feedback, my friend would also improve her writing. (Etta)

Somehow, we learned to be more critical in reflecting and giving feedback. (Iqah)

5.8. Learned to ask questions

I'm really weak in questioning technique. But after several times of reflecting exercises, I finally managed to create questions. (Fina)

5.9. More Confident

Then after I learned about the Socratic Questioning Technique, I am more confident in posting comments on others' reflections. (Fina)

5.10. Need more time to apply SQT

However, one teacher mentioned that since SQT was new to them, she needed more time to practice asking critical questions and to give feedback to others.

At first I struggled to apply the Socratic questioning techniques in giving feedback because this technique is very new. It is not in my habit to ask that kind of questions so I need more time and practice to adapt the questions when giving feedback. (Na)

6. Discussion and Conclusions

This paper summarised the results of the study, which was to examine the use of Socratic Questioning Technique (SQT) in enhancing in-service teachers' critical thinking skills and questioning techniques using an Action Research for one semester. Data were collected using interview, reflection and online postings. The findings revealed that the participants had difficulty in giving constructive criticism and asking critical questions. They lacked theoretical knowledge, lacked confidence, and trust when giving feedback to others. These findings are supported with past studies conducted in Malaysia (Nadara & Chew, 2018; Saad et al., 2012) which asserted that instructor inquiries hampered the growth of students' critical thinking abilities. However, after being introduced to SQT, these teachers claimed that they learned to create and ask questions as well as to give feedback. They also became more confident in giving constructive feedback to others. These findings are similar to past studies which has reported positive impacts on students' critical thinking and self- confidence (Miri et al., 2007; Nadara & Chew, 2018; Saad et al., 2012; Zare & Mukundan, 2016). Exposure to a new technique such as SQT has increased the teachers' awareness on various ways to ask questions beyond the common WH questions. In order to help students develop their critical thinking abilities, it is believed that pre-service and in-service teachers should receive training on how to ask more challenging questions.

In addition, the dialogic inquiry (Wells, 1999) taught the participants how to listen, formulate and reformulate, clarify, check for understanding, continue, probe assumptions, explicate them, and abstract and concretize. Additionally, the educational experience helped students comprehend the values that underlie the many practises and concepts used in the classroom. Through dialogic inquiry and collaborative co-construction of knowledge, they learned to make sense of the learning process. They gained an understanding of the nature of learning through dialogic inquiry and cooperative co-construction of knowledge. This could be seen when the participants have managed to apply various types of questions in their feedback as opposed to the previous feedback given at the beginning of the study. Even though most of the questions were clarification and viewpoint questions, they have started to use evidence, reasoning and implication questions. To some extent, this exercise has increased their awareness on critical questioning techniques. They have somehow improved their questioning techniques. Knezic et al. (2010) argue that the process of co-construction of knowledge is a complex process which involved understanding, being understood as well as being misunderstood.

In conclusion, The Socratic method of instruction may not be ideal for all subject areas or all types of classrooms. However, it is worthwhile to implement at every institution because it is a highly effective teaching strategy that will help students learn. It is also crucial to educate in-service and pre-service instructors on the methods that may be utilised to enhance their critical thinking and critical questioning abilities in order to help their students learn more effectively. As a result, it is recommended that SQT be utilised to train all teachers throughout the nation's teacher education courses including pre-service and in-service trainings.

Acknowledgements

We would like to thank the Research Innovation Management Centre Universiti Utara Malaysia for the collaboration 1 + 3 grant SO Code:14941, that made the publication of this work possible.

References

- Anderson, G., Herr, K., & Nihlen, A. (2007). *Studying Your Own School: An Educator's Guide to Practitioner Action Research*. <https://doi.org/10.4135/9781483329574>
- Braun, V., & Clarke, V. (2013). *Successful Qualitative Research. A Practical Guide for Beginners*. Sage Publications Ltd.
- Cheah, C. (2014, November 17). Graduates lack critical thinking skills, says CEO. *The Star*. Retrieved on January 2023, from <https://www.thestar.com.my/news/nation/2014/11/17/graduates-lack-critical-thinking-skills-says-ceo/>
- Creswell, J. W. (2012). *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (4th Ed.). MA Pearson.
- Dalim, S. F., Ishak, A. S., & Hamzah, L. M. (2022). Promoting students' critical thinking through socratic method: views and challenges. *Asian Journal of University Education*, 18(4), 1034-1047.
- Eggen, P., & Kauchak, D. (2012). Strategi dan model pembelajaran: Mengajarkan konten dan keterampilan berfikir edisi 6 [Learning strategy and model: Teaching content and teaching skills. 6th Edition]. Indeks.
- Espina, J. I. (2022). The Effectiveness of Critical Evaluation and Questioning Techniques to Increase Students' Critical Thinking Skill: A Case Study. *JELITA: Journal of Education, Language Innovation, and Applied Linguistics*, 1(1), 1-9. <https://doi.org/10.37058/jelita.v1i1.4283>
- Etemadzadeh, A., Seifi, S., & Far, H. R. (2013). The Role of Questioning Technique in developing thinking Skills: The Ongoing Effect on Writing Skill. *Procedia - Social and Behavioral Sciences*, 70, 1024-1031. <https://doi.org/10.1016/j.sbspro.2013.01.154>
- Fadhullah, A., & Ahmad, N. (2017). Thinking outside of the box: Determining students' level of critical thinking skills in teaching and learning. *Asian Journal of University Education (AJUE)*, 13(2), 51-70.
- Gibbs, G. (1988). *Learning by doing: A guide to teaching and learning methods*. FEU.
- Knezic, D., Wubbels, T., Elbers, E., & Hajer, M. (2010). The Socratic Dialogue and teacher education. *Teaching and Teacher Education*, 26(4), 1104-1111. <https://doi.org/10.1016/j.tate.2009.11.006>
- Kuhn, D., & Dean, D. (2004). Metacognition: A Bridge Between Cognitive Psychology and Educational Practice. *Theory Into Practice*, 43(4), 268-273. https://doi.org/10.1207/s15430421tip4304_4
- Miri, B., David, B.-C., & Uri, Z. (2007). Purposely Teaching for the Promotion of Higher-order Thinking Skills: A Case of Critical Thinking. *Research in Science Education*, 37(4), 353-369. <https://doi.org/10.1007/s11165-006-9029-2>
- Mohamed Nor, H., & Sihes, A. J. (2021). Critical Thinking Skills in Education: A Systematic Literature Review. *International Journal of Academic Research in Business and Social Sciences*, 11(11). <https://doi.org/10.6007/ijarbss/v11-i11/11529>
- Mustika, N., Nurkamto, J., & Suparno, S. (2020). Influence of Questioning Techniques in EFL Classes on Developing Students' Critical Thinking Skills. *International Online Journal of Education and Teaching*, 7(1), 278-287.
- Nadara, S., & Chew, F. P. (2018, October). Implementation Of Critical And Creative Thinking Skills In The Teaching And Learning Of Literature Component In Secondary School. In *International Academic Research Conference in Vienna* (pp. 1-4).
- Riffel, C. (2014). The socratic method reloaded: How to make it work in large classes? *Canterbury Law Review*, 20, 125-135
- Saad, S., Saad, N. S., & Dollah, M. U. (2012). Pengajaran kemahiran berfikir: persepsi dan amalan guru matematik semasa pengajaran dan pembelajaran bilik darjah [Teaching thinking skills: perceptions

- and practices of mathematics teachers during classroom teaching and learning]. *Jurnal Pendidikan Sains & Matematik Malaysia*, 2(1), 18-36
- Sam, H. K., & Jacob, S. M. (2012). Critical thinking and Socratic questioning in asynchronous mathematics discussion forums. *Malaysian Journal of Educational Technology*, 12(3).
- Sorvatzioti, D. F. (2012). The socratic method of teaching in a multidisciplinary educational setting. *International Journal of Arts and Sciences*, 5(5), 61.
- Venkatesan, S. (2020). Socratic Questioning Enabled Analysis of Problem Behaviours. *Journal Of Psychology*, 11(1-2). <https://doi.org/10.31901/24566292.2020/11.1-2.198>
- Vincent Hogshead, R. M. (2017). How An English Teacher May Draw From The Socratic Seminar Method In Order To Further Engage Tenth Grade Students During Discussion. https://digitalcommons.hamline.edu/hse_all/4319
- Vittorio, L. N., Murphy, S. T., Braun, J. D., & Strunk, D. R. (2022). Using Socratic Questioning to promote cognitive change and achieve depressive symptom reduction: Evidence of cognitive change as a mediator. *Behaviour Research and Therapy*, 150, 104035. <https://doi.org/10.1016/j.brat.2022.104035>
- Wells, G. (1999). *Dialogic Inquiry: Towards a Sociocultural Practice and Theory of Education*. Cambridge University Press. <http://doi.org/10.1017/CBO9780511605895>
- Wiggins, J. (2015). Constructivism, Policy, and Arts Education. *Arts Education Policy Review*, 116(3), 115-117. <https://doi.org/10.1080/10632913.2015.1038673>
- Xu, E., Wang, W., & Wang, Q. (2023). The effectiveness of collaborative problem solving in promoting students' critical thinking: A meta-analysis based on empirical literature. *Humanities and Social Sciences Communications*, 10(1). <https://doi.org/10.1057/s41599-023-01508-1>
- Zare, P., & Mukundan, J. (2016). The use of socratic method as a teaching/learning tool to develop students' critical thinking: A review of literature. *Language in India*, 15(6), 256-265
- Zuber-Skerritt, O. (2001). Action learning and action research: Paradigm, praxis and programs. In S. Sankara, B. Dick, & R. Passfield (Eds.), *Effective Change Management through Action Research and Action Learning: Concepts, Perspectives, Processes and Applications* (pp. 1-20). Cross University Press.