USING THE PEER SOCRATIC QUESTIONING (PSQ) TECHNIQUE IN GROUP DISCUSSION ACTIVITIES

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Abstract: Among others, the 21st Century learning focuses on collaboration, cooperation and teamwork skills among students. These skills can be promoted through group discussion activities which are quite popular in higher learning institutions. Students could be trained to conduct effective group discussion by using the questioning technique. This paper presents the result of a study which was conducted to investigate how a technique called the Peer Socratic Questioning (adapted from the Socratic Questioning technique by Paul (1993)) helped to improve group discussion activities of pre-service teachers at an Institute of Teacher Education (ITE) or also known as Institut Pendidikan Guru (IPG). The study employed a qualitative method and it involved 20 second semester first-year pre-service TESL teachers who were doing their degree programme. The data was collected from transcripts of six group discussions from three groups, the reflective journal entries and the focus group interview transcripts. The data collection took about 11 weeks to complete. The transcripts were analysed for the types of Socratic questions used by the participants. The perceptions of participants were analysed from their reflective journal entries and the transcripts of the focus group interview. The analysis was done by using the ATLAS.ti software for qualitative study. The results indicated that the participants perceived that the PSQ technique had improved their group discussion activities and critical thinking levels. Generally the PSQ technique helped the participants to ask questions that enabled their peers to give answers at HOTS levels and improved their self-efficacy, cooperation, engagement and personal development. They found the technique very helpful and wished to continue using it in subsequent discussions.

Keywords: critical thinking, group discussion, self-efficacy, Socratic questions

INTRODUCTION

Now everywhere around the world there is a focus on the 21st century learning with the emphasis on the 21st century skills. Among the foci in the 21st century learning are critical thinking and problem-solving skills, collaboration, leadership, teamwork, cooperation, facility in using virtual workspaces and information and communication technology (ICT) literacy (Hidden Curriculum, 2014). Questioning techniques, for example the Socratic questioning and using the Bloom’s taxonomy keywords to ask questions, were also recommended for 21st century learning to encourage critical thinking skills (Norhailmi, 2017). Towards achieving 21st Century teaching and learning, multi-dimensional abilities are now required for students to be successful in school, work, and life. These skills can be promoted through group discussion activities which are quite popular at higher learning institutions including at Institute of Teacher Education (ITE) or also known as Institut Pendidikan Guru (IPG).

At IPG collaborative learning through group work in particular group discussion activity is commonly practised. Group discussion activity offers many benefits. However, lecturers usually do not specify how the students are supposed to discuss their work and studies have shown that it is important for teachers to guide their students in group discussion (Corden, 2001; Brookfield, 2012; Juan, 2014). In addition, Brookfield (2012) asserts that many teachers
at colleges fail to model to students how to engage in discussion with peers. Since there is lack of guidance on how to carry out group discussion to achieve full benefits, the Peer Socratic Questioning (PSQ) technique was applied in this study to guide the students in their group discussion. Therefore, this study was conducted to explore the experience of students in using the PSQ technique in conducting their group discussion and to investigate the students’ perceptions on how the technique had improved their group discussion activity and their perceptions on the challenges they faced while using the technique.

**MATERIALS AND METHODS**

This paper is based on several theories that are related to group discussion activities and Peer Socratic Questioning (PSQ) technique. The main theory and approach that guided the research were the Social Constructivism theory and collaborative learning approach. This paper also discusses group discussion and its benefits and explains the Peer Socratic Questioning (PSQ) technique that was used in this study.

**Social Constructivism theory**

Constructivism or also known as cognitive constructivism began with the work of Jean Piaget (1896–1980). Cognitive constructivism posits that students learn through active construction of their own knowledge. Knowledge is not seen as a commodity which is transferred to learner from expert, but rather as a construct which is pieced together through an active involvement process and interaction with the environment. According to this theory, learners would use available building blocks in an on-going process of construction, evaluation, and modification of constructs to build knowledge that is viable and meaningful for them. The activities, the context of the activities and the enveloping culture shape the learners’ developing knowledge (Schcolnik, Kol, & Abarbanel, 2006). Piaget asserts that learners interpret the environment by using their cognitive structures and in doing so they assimilate new information into their existing cognitive schemas. They understand the information only to the extent allowed by the existing schemas. At the same time as the learners interact with the environment, the cognitive structures of learners change. The new information which is assimilated into the cognitive structures then leads to the modification of these structures (Schcolnik et al., 2006).

Social constructivism theory, on the other hand, emphasizes on collaborative learning. Vygotsky believes that cognitive constructivist like Piaget overlooked the “essentially social nature of language.” According to Liu and Chen (2010), based on Vygostsky’s social learning theory, it is believed that “psychological phenomena” arise from social interaction and formed by social relationship. Besides an individual directly giving impact to a learner in the learning activity, his or her learning environment, which includes other things around the learner, could influence his or her learning.

Vygotsky (1978) asserts that there are two levels of a child’s cultural development where every function appears twice; first, the social level and then the individual level. The first level is between people or also known as inter-psychological level and the second level is inside the child, or known as the intra-psychological level. These two levels apply equally to voluntary attention, logical memory and the formation of concepts and all higher functions come from real interactions between people. Vygotsky (1978) also distinguished between two developmental levels: the actual development and the potential development which is also known as the “zone of proximal development” (ZPD). The first level is the level at which the learner already has the capability to solve problems independently; the level of development at which the learner has already reached. On the other hand, the learner reaches potential development level with guidance from the teachers or in collaboration with peers. At this level the learner has the capability to solve problems and understand materials that they are not able to do at their level of actual development. The level at which learning takes place is actually the level of potential development. At this level, the cognitive structures of learner are still in the process of maturing but they can mature with guidance of or in collaboration with others (Cremin & Arthur, 2014).
Applefield et al. (2000) state that social constructivism views that knowledge construction originates from people’s interaction which involve sharing, comparing and debating among learners and mentors. Via a highly interactive process, learners refine their own meanings and help others find their own meanings hence, knowledge is mutually constructed. In social constructivism, learning is believed to be influenced by four fundamental characteristics. First, learners construct their own learning; second, the new learning is dependent on the learners’ existing understanding; third, the role of social interaction is critical and finally the authentic learning tasks for meaningful learning is a necessity. Other than the element of social interaction, all the other three characteristics are similar to cognitive constructivism characteristics.

This study was guided by the social constructivism theory where students work with their peers in their respective groups to understand and complete the tasks given to them by their lecturer. In this study, the participants interacted with their peers by asking and answering the Socratic questions. By working together in groups and by using the PSQ technique, they were encouraged to share their knowledge and opinions in order to have better understanding of the topics. In this case, the concept of ZPD as proposed by Vygotsky was applied whereby those who were more able helped those who were less able and together they reached the potential level of development as suggested by Schcolnik et al (2006). The lecturer helped these students by providing the necessary input during lectures and structured the tasks in a way that participants should be clear of what they were supposed to discuss.

**Collaborative learning**

As posited by Panitz (1996), collaborative learning is a learning approach that requires students to work in groups and group discussion is one of such activities. In collaborative learning, usually two or more students of mixed ability working together in a group and it is the responsibility of each group member to learn the content taught in class as well as help other group members learn. As emphasised by Social Constructivism theory, communicative learning theory and collaborative learning, group work is one of the activities that can promote and help develop participants’ communicative competence as participants can have meaningful and purposeful interaction with one another and work collaboratively to use the language to establish and to negotiate meaning (Richards, 2006). Working together in groups is the fundamental requirement of Social constructivism as a means for the participants to construct their knowledge and understanding by working together to solve problems as highlighted in collaborative learning by MacGregor (1992) and Panitz (1999).

**Group discussion**

Brilhart (1986) defines a group as three or more people interacting with one another in such a way that each member in the group influences and is influenced by each other. According to Brilhart (1986), a small group discussion refers to a small group of people having a face-to-face interaction to reach mutually dependent goal, such as improved understanding, organisation of activity, or a solution to a common problem. In IPG, a group usually consists of three to four members which are agreed on by the participants themselves.

Among the benefits of group discussion given by Brookfield & Preskill (1999) are it helps participants explore many different viewpoints, recognize and investigate their assumptions, increases intellectual agility, develops habits of collaborative learning and develops synthesis and integration skills. Research also suggests that when learners working in groups together, they may construct more powerful understanding than when they are alone (Hadjioannou, 2007 in Eggen & Kauchak, 2012). However, Eggen and Kauchak (2012) argue that putting students together does not mean that they are working together. Therefore, group work requires a structured task by the teacher to ensure they discuss what they are supposed to discuss in their groups.

Richards (2006) believes that participants can learn by listening to the language used by their friends when doing activities in a group; hence, producing a greater amount of language. It
is also likely to increase their motivational level and the chance to develop fluency. Adams and Galanes (2012) argue that typically groups make decisions which are of higher-quality than individuals when working on problems with several solutions. One of the reasons is because groups usually can choose more possible solutions than individuals. By correcting each other’s misleading information, fallacies and unsound reasoning, members in the group can help one another think critically. Furthermore, compared to an individual working alone, a more thorough exploratory research can be conducted if there are several members. Scholars also agree that one of the benefits of working in groups which include group discussion activities is to enhance critical thinking skills. Adams and Galanes (2012) believe that group discussion can enhance critical thinking skills depending on how members view information, gather information, evaluate and make judgments on the information gathered carefully, how alert they are on how to facilitate group processes that foster critical thinking.

**Peer Socratic questioning (PSQ) technique**

Peer Socratic Questioning (PSQ) technique is adapted from the original Socratic questioning introduced by Paul (1993). Paul (1993) develops the taxonomy of Socratic Questioning which covers six types of Socratic questions. They are the questions about conceptual clarification, the questions that probe assumptions, questions that probe reasons and evidence, questions that probe viewpoints and perspectives, questions that probe implications and questions about questions. According to Eggen and Kauchak (2012), by questioning, students are encouraged to put their understanding into words and the most effective way for them to develop this ability is by responding to question. According to (Wilcomb & Wilcox, n.d.), through Socratic questioning participants will have the capacity to recognize contradictions and correct any incomplete or inaccurate ideas; hence, leading to progressively greater truth and accuracy.

In Socratic questioning, teachers should be asking the questions and participants should be doing the talking, discussing and writing. Usually, Socratic questioning is used by instructors, teachers, or facilitators to lead discussions. They ask the questions to direct participants’ thinking. The Socratic Questioning is commonly used to ask questions by using the probing questions so that the students will give more elaborate and deeper answers. However, the researcher believes that if the teacher models and trains the participants with this type of questions they can be guided to use the technique on their own when conducting group discussion activities. They can ask each other probing questions to complete their tasks or to solve problems so that they can help each other to use their critical thinking skills.

**Research Design**

This study employed a qualitative research design as suggested by Merriam (1998) and Ary, Jacob and Sorensen (2010). The main instruments used were the video recordings and the reflective journals.

**Participants**

The participants for this study were chosen from a unit of TESL students consisting of 20 students. There were 14 female and six male students in the group and they were in their second semester of the first year degree programme. The participants were divided into five groups of four and they were given the freedom to choose their own group members.

**Data collection**

The data collection in this study took 11 weeks. The data was collected by using video recordings of group discussion, the participants’ reflective journal entries, and the video recording of the focus group interview. They were also asked to write their reflective journal entries after every discussion. After the participants had finished all the tasks, 10 of them were selected to conduct the focus group interview.
Before the data collection began, the participants were introduced to the PSQ technique in two workshops. In the first workshop, the participants were introduced to the six types of Socratic questions and practised using the questions with the researcher and then among themselves in their respective groups. After the first workshop, they were asked to record their discussion for practice. Then, they practised the questioning again in another workshop and guided on how and what to write in their reflective journal entries. After the second workshop, they were given six group discussion tasks to complete and were required to record their discussions. They were also asked to write their reflective journal entries after each discussion to reflect on the strengths and challenges that they faced while using the technique. They were also asked to give suggestions to improve the technique. The focus group interview was conducted after all the tasks were completed and recorded to triangulate the findings from the video recording transcripts and the reflective journal entries.

Data analysis

All the data was analysed by using the ATLAS.ti software for qualitative research. The data was analysed by using the content analysis of the video recording transcripts of the group discussions and the focus group interview and the document analysis of the reflective journal entries. The video recordings were transcribed verbatim and then analysed for the type of questions asked during their discussions. The reflective journal entries were analysed under the main themes strengths and challenges in using the PSQ technique as well as suggestions to improve the technique. The focus group interview was also transcribed verbatim and then analysed under the main themes strengths, challenges and suggestions. The perceptions of the participants were then presented in the form of narratives.

RESULTS AND DISCUSSION

In this paper, the results and discussion of the research findings are only focused on the perceptions of the participants on the strengths and challenges they faced in using the PSQ technique in group discussion activities.

Strengths of the PSQ technique

From the analysis of the reflective journal entries and the focus group interview transcripts, the participants revealed that the PSQ technique had helped them improve their group discussion in many ways. The participants perceived that the use of the Peer Socratic Questioning (PSQ) technique had improved their critical thinking and their group discussion by making them more engaged, increased their self-efficacy, developed themselves personally and became more confident.

First, the participants perceived that the PSQ technique had improved their critical thinking. This is because in order to formulate questions and provide the answers, they were required to think deeply based on facts as they knew their answers would lead to more questions and answers. Instead of just providing the facts and examples from their notes (remembering), they had to be ready to give their opinions, reasons and evidence as well as justifications and make assumptions (analysing and evaluating) when asked by their peers. Instead of relying solely on the module provided by their lecturer, they began to search for more materials to add to their understanding so that they could provide or support their responses with more explanations, elaborations and evidence. Besides, they were expected to think more deeply and give their opinions based on experience and evidence and not just providing facts by recalling what they learned in classroom or from the modules provided for them by their lecturer. In fact, this is the aim of Socratic Questioning as proposed by Paul and Elder (2007) – to probe students’ thinking with questions in order to activate their critical thinking.

Besides improving their critical thinking, the participants of this study perceived that the technique had improved their discussion in many ways. First, it had improved their
engagement in discussion. From the focus group interview, the participants revealed that before they learned to use the PSQ technique, their discussions were mainly to divide their tasks for presentation. Their presentations were merely focused on facts or knowledge. Nobody asked questions after presentation in class for fear that their friends might not be able to answer even though they did not understand.

With the use of the PSQ technique, they were discussing the tasks as they were required to. They perceived that they were more engaged in their discussion. This was shown by their active participation, cooperation and sharing of information among them. Everybody took part in the discussion and they made sure that everyone took part by calling their names and asking them questions or asking them for more elaboration and explanation. So, everybody had to participate in the discussion. Since they had to be alert at all time to ask and answer the questions, they would not have time to day-dream or think of other matters.

Research shows that questioning strategies, particularly Socratic questioning has proven to be effective strategies to engage students in discussion. For example, a study by Cleveland (2015) showed that the questioning technique used in Socratic Circle had promoted participation in student-centred dialogue. This is also supported by the findings from a study done by Copelin (2015) which indicated that Socratic Circles influenced not only student participation but also classroom climate, social skills and content connection. Students reported that they experienced opportunities to interact with their peers, participated more and had better understanding.

Another improvement that could be seen from the use of this technique was it had improved their self-efficacy. As defined by Bandura (1997) self-efficacy is individual’s beliefs in his or her capabilities to plan and perform the expected courses of action and to manage prospective situations. The participants believed that they were able to understand the topics of their discussions better after using the PSQ technique. Their self-efficacy had also increased because they felt that they were able to ask more and better questions, answer more questions and contributed more to the discussion. They were able to give better and more elaborate explanations when asked by their peers. Since their peers kept asking to explain more and more, they felt that they became better at giving explanation.

The participants also felt that they had developed their confidence and also developed themselves personally. At the beginning, some participants admitted in her reflective journal that she was not confident to discuss fully in English as they used to communicate outside classroom in their native dialects and standard Malay. However, after a few discussions, they gained their confidence and felt that they had actually improved their English language proficiency. Even though they were TESL students, they were just in their second semester and were still getting used to speaking English fully in discussion. After using this PSQ technique, they gradually felt more and more confident discussing fully in English. As proven by Roberson (2013) in his study, the use of Socratic Seminar was very motivating in the areas of confidence and participation. Similarly, a study by Diaz (2013) also showed that students perceived Socratic Method had helped in promoting their academic freedom, increasing their confidence levels, obtaining voice and the feeling of being understood.

In addition, the participants also felt that they had improved their English proficiency with the help from their peers. For example, a participant felt that her English had improved because her group-mates would help her whenever she was stuck with the words, or helped her to rephrase her words or sentences and also the overall organisation of her thoughts. Another personal development perceived by the participants was in terms of their social skills. They felt that they had improved themselves when they learned to cooperate with one another, listened to one another’s ideas and learned to contribute their own ideas during the discussions. They also felt that they had improved personally because with PSQ technique, they were able to organise their thinking better.

It was also observed that some very shy and quiet participants had shown improvement in their participation and confidence. A quiet student in the classroom, for example was very shy at the beginning of the study that she was very conscious of the recording and she had the tendency to mumble or speak very softly. It was observed from the recordings that at the beginning, she wanted to cover her face or mouth when speaking. However, that changed after
her friends kept asking her questions and for her opinions. She showed more confidence when she answered the questions asked by her group-mates. Besides, as they were only among their peers, they felt very comfortable with one another. They admitted that they felt more confident to express themselves and ask questions as compared to when they were in classroom. In a study by Jensen (2015) using the Socratic Seminars among Hispanic students also discovered that the classroom environment and social aspect of the class were greatly improved. Two students who were uncomfortable or quiet at the beginning started to speak up during the Socratic seminars.

In conclusion, apart from improving their critical thinking, the participants perceived that the use of the Peer Socratic Questioning (PSQ) technique had improved their group discussion by making them more engaged, increased their self-efficacy, developed themselves personally and became more confident.

The Challenges in Using the PSQ Technique

The challenges that the participants faced while using the PSQ technique were not totally due to the technique itself but rather due to other problems. From the journal entries and the focus group interview transcript, the participant all agreed that they liked the technique and may use it again in the future. The biggest challenge was due to their unfamiliarity with the technique while other challenges were due to their English language proficiency, commitment, the quality of questions asked and the choice of topics for discussion.

The participants perceived that the biggest challenge they faced during group discussion while using the PSQ technique was they did not know when and how to use the technique properly. Even though they did use the technique and it had improved their discussion in many ways, they still had doubt about how and when to use the questions properly. This was true because from the analysis of the type of questions they asked they were mainly the conceptual clarification questions and the questions about viewpoints and perspectives. These questions were considered the easiest to ask and answer. The conceptual clarification questions required them to ask to clarify something by giving examples and elaboration or more explanation on what someone said while the questions about viewpoint and perspective required them to ask for opinion. However, for other types of questions such as the question that probe assumption, implication and rationale or reason, require deeper answers and they were not very familiar with these types of questions. This indicates that the participants still needed a lot of practice in using these questions and the researcher had to have more training for the participants on asking these types of question.

Another challenge perceived by the participants was their language proficiency. Since the participants were only in their semester two of their first year degree, they were still not used to conducting discussion fully in English even though they were TESL students. Even though they felt that their English had improved with the use of PSQ technique, the language proficiency was still one of the biggest challenges. Some of them felt that they could not convey their messages due to their proficiency either in asking or answering questions. They admitted that before using PSQ they usually conducted their discussion in Malay language, especially in their dialects because they were more comfortable communicating in their mother tongue. To use the Socratic Questions, they had to communicate in English. A study by Hernandez (2012) discovered that students who had negative views about collaborative work were due to their low linguistic ability. Other than that, they had also never really conducted a proper discussion as they usually met just to divide their presentation tasks and later, combine their parts.

Another big challenge as perceived by the participants was their lack of preparation. The participants perceived that their discussions could be much better if they were more prepared with the resources on the topics of discussion and were not too dependent on the module which was prepared by their lecturer. They admitted that they should have searched for more resources other than the notes and module provided by their lecturer and read them before conducting their discussion. This is supported by a study conducted by Copelin (2015) on using the Socratic Circles. The study reported that the teachers believed that it was important to build knowledge platform before a discussion could begin in order to solve the problem of students’
lack of general knowledge on the topic of discussion. In other words, teachers need to ensure that students are prepared before meeting for discussion.

The next challenge as perceived by the participants while using the PSQ technique was the quality of questions they asked. The participants admitted that the questions they asked lack variety. This was because they could not remember all types of questions. As mentioned earlier, the same types of questions were asked repeatedly with the most commonly asked questions being the clarification, and viewpoint questions. Some of the questions were also formulated by directly referring to the module so that the answers could be found easily. This problem happened because the participants were still unfamiliar with the technique and they did not have enough practice in using it.

The last challenge as perceived by the participants in using the PSQ technique is the topic of discussion. As mentioned earlier, some topics were too difficult for the participants to understand, so they could not say or discuss much. For example, the topic on Universal Grammar was considered very difficult and the concept was abstract for the participants to discuss and relate to their experience. On the other hand, other topics such as the curriculum – KBSR and KSSR were very much related to their life as students and they could relate it to their life. They felt that the topic for discussion should not be too factual so that they could give more thoughts or opinions regarding the topic.

In conclusion, the challenges faced by the participants while using the PSQ technique were not due to the technique itself, but rather, it stemmed from their personal problems such as their lack of preparation, lack of practice, low English language proficiency and lack of commitment. However, the benefits of using this technique outweighed the challenges they faced. With the right attitude, commitment, more time and practice, all the challenges could be overcome. Generally, they felt that the technique was very helpful especially in improving their critical thinking skills and also in improving their group discussion activities and they would like to use the technique again in their subsequent group discussions.
REFERENCES


