

A Case Study on Collaborative Learning to Promote Higher Thinking Skills (HOTS) among English as a Second Language (ESL) Learners

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Abstract

This qualitative study explores how collaborative learning experience promotes higher thinking skills among four students in Universiti Malaysia Pahang. Three research question are posted in the study and these are: How do learners of ESL take responsibility after thinking critically over an issue in collaborative learning?, How is it possible for ESL learners in admitting their initial opinion to be incorrect or partially flawed in collaborative learning environment? And what are the strategies that learners of ESL use in working collaboratively after thinking critically over an issue?. Several themes are discussed in relation to the research questions stated.

Keywords: collaborative learning, higher thinking skills, ESL learners

INTRODUCTION

Collaborative Learning, Cooperative Learning and Problem- Based Learning are among the approaches in learning. These series of learning differ from one another in accordance to their methods, devices, styles and others. In language learning, teachers in the classroom adopt one of the methods or may combine these methods to enliven the teaching- learning processes. In my eight years experiences of teaching in Universiti Malaysia Pahang (UMP), I observe that collaborative learning displays positive impact in the way I teach English; though the other two also play significant roles in the class. Observing students arguing, commenting and refuting views made by their course mates, to me is “worth” of an effort in letting them to making “noise” in the class. Suresh (1999), states that this interactive partnering enables realistic social contexts to be formed. Moreover, maintaining such an environment would help sustain the student's interests and would provide a more natural learning habitat (Suresh, 1999).

In UMP, collaborative learning experiences of students in English class can best be observed when students work in group rather than in pairs. Gokhale (1995), comments that maintaining a small size of group members can make students at various performance levels work together to reach a common goal. The small group size in collaborative learning is given credit in a study conducted by Chang (2008), where students work in group of three for Online Expert Group as well as in Online Project Group.

The opportunity learning in collaborative learning can also give rooms for students to think critically since ideas can be evaluated by all members in the group. Students become critical thinkers since they take responsibility for their own learning when discussions are conducted in the class (Gokhale, 1995 in Totten, Sills, Digby, & Russ, 1991). Relating to the statement with the situation in English class, it is observed that students do not seriously play their roles; putting effort to think critically of the subject matter being discussed. More importantly they are not interested to display higher level thinking skills wherein they need to find solutions to a problem, discover the pros and cons of the issue at hands and finally make reasonable conclusions (Chang & Yang, 2009). Consequently, this leads to dry discussion.

Statement of the Problem

In a typical English as A Second Language (ESL) class, individual or group presentation is carried out for students to present ideas and thoughts after they summarise materials they read. As such in speaking activity (or presentation) specifically, the benefits of understanding the content of the text is to the students who present the ideas only- they communicate ideas after summarising the content of the text. Students who listen to the content on the other hand, seldom benefit from it due to the activity is merely reviewing the texts.

Moreover, should there be any question after the presentation; it does not illustrate the higher level of thinking abilities. Questions or comments receive by audiences or other students in the class do not show that they use their critical thinking skills particularly analysis, synthesis and evaluation to ask for the presenter's feedback.

The collaborative learning where "the expansion of critical thinking through discussion, clarification of ideas, and evaluation of others' ideas, encouraging the practice of higher level cognitive thinking skills" (Totten, Digby, & Russ, 1991, p.2) do not co-exist with the content that students deliver in the class, although the issue that they are discussing is thought provoking. Therefore, there is a need to "understand why individual students do what they do (Ary, Jacobs & Razavieh, 2006, p. 440)" in this regard.

Research Questions

The study attempts to answer the following research questions in relation to the use of high level thinking skills (in Bloom Taxonomy) in collaborative learning experiences among ESL learners in UMP:

1. How do learners of ESL take responsibility after thinking critically over an issue in collaborative learning?
2. How is it possible for ESL learners in admitting their initial opinion to be incorrect or partially flawed in collaborative learning environment?
3. What are the strategies that learners of ESL use in working collaboratively after thinking critically over an issue?

REVIEW OF RELATED LITERATURE

This section discusses two main issues in understanding the topic of the study. These are collaborative learning and critical thinking skills. It is viewed that these are the 'essence' of the study since I intend to study these two elements respectively.

Collaborative Learning

Collaborative learning is the umbrella term where 'a joint-venture' of teaching-learning experience is depicted in class. In this environment, students and teachers benefit from the discussion in searching for mutual understanding, solution or meanings, or creating a product (Smith & MacGregor, 1992). Examples of implementations of collaborative learning use in classes can be seen in the writing group, peer teaching and problem-structured instruction to name a few (Smith & MacGregor, 1992). The approach also allows students learning the language in a discussion group to "guess meaning from their background knowledge and letting-it-out though they might encounter occasional

mistakes compared to having no attempt in discussing the topic at hand” (Arnold, 1999, p.15).

Owning the Learning in Collaborative Learning

Yacizi (2005), states in collaborative learning, teachers should encourage students to make informed choices since they portray the traits of independent learners and willing to accept responsibilities for their own learning (p. 226). Volery & Lord (2000), support the argument by saying that teachers’ roles are crucial in effective collaborative learning. They serve as the catalyst by having students to be the manager of their learning experiences. In their study of online education among graduate students taking business course, they found out that “the level of interaction between the students and the lecturer appears *predominant* in online delivery” (Volery & Lord, 2000, p. 222).

Flawed or Incorrect Initial Opinion in Collaborative Learning

In an article entitles, “Empowerment, Coercive Persuasion and Organizational Learning: Do They Connect?” by Schein (1999), it is stated that employees need magnitude of changes in learning organisation and this can be achieved by working collaboratively in networks regardless of shifting teams and task forces. However, should one of the employees in the team denies his or her mistakes in the tasks given, the ‘clue’ to the mistake may not be realised. Instead he may just *rationalize* that his or her flawed would shortly be cleared up. Interestingly, Borthick et.al (2003) reveal that the situation can be overcome with the help of others in the group. They lead their claim to Vygotsky’s (1978,1986 in Schein 1999) Mental Function .

“... that developing mental function depends on learners internalizing the performance of the capabilities they are learning. Internalization occurs faster when learners have assistance for the specific task aspects they cannot yet perform on their own. this can be overcome” (p.3)

In a study by Gokhale’s (1995), 48 undergraduate students in his study value mistakes and partially flawed opinions make by their fellow friends. This is because the collaborative learning experience by his students, enables them to produce opinions after thinking critically that go beyond mere statements since they have to give reasons for their judgments.

Strategies to Effective Collaborative Learning

There are several ways to make collaborative learning an effective experience to all students involved in it. Ingram & Hathorn (2004), suggest using such strategies as giving the group a meaningful goal, instructing them to collaborate, providing a process for collaboratively doing the task, holding individual accountable for collaborative work for effective collaborative learning. Buckelew (1999), suggests that teachers need to play their parts in the learning process. She states that collaborative learning allows peer groups to act as teachers while the teacher her/ himself works as a director or coach.

Thinking Skills

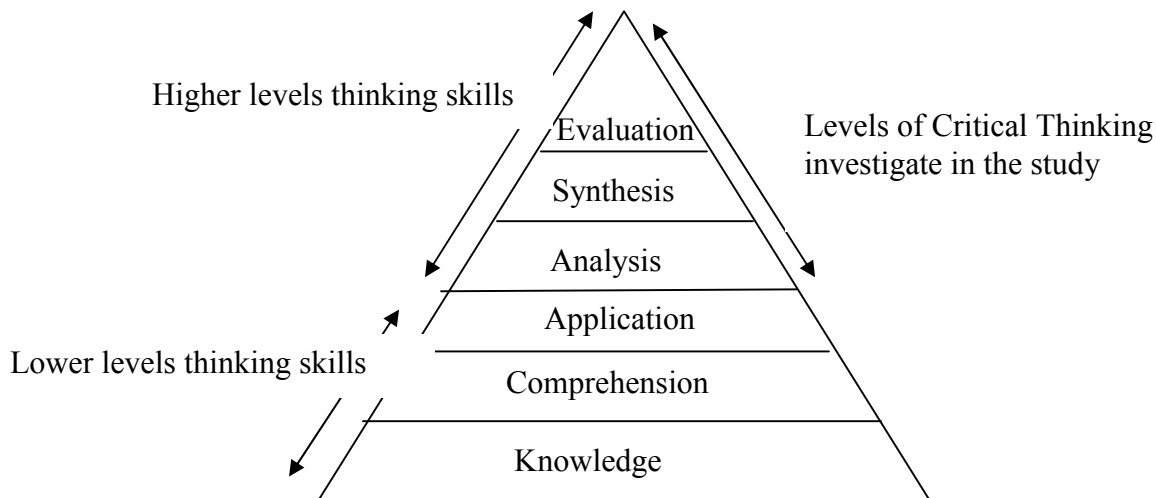
A study conducted by Keith & Angela (2004), on peer tutoring of reading and thinking reveals that students enjoy the social aspect of the activity (peer tutoring of reading and thinking) where they have the chance to collaborate (pairing with other students) with one another in exchanging their thoughts, feelings and etc. Consequently, students in the study having a wide range of abilities are able to develop reading comprehension skills into higher-level thinking skills. The study also states that the activity, “went beyond the author's intended meaning, went beyond the book read among others” (Keith & Angela, 2004, p. 4). Teachers who are tutors in the study assert that they have to judge what questions to ask and when to ask them, to explain or give answers when necessary, and to give appropriate thinking time to the students (Keith & Angela, 2004) in respect to obtaining higher level thinking skills among students.

In the literature of a handbook produced by Ohio State Department of Education, it is stated that learners (adult) should be exposed to dialogue and questioning (of analysis, synthesis and evaluation) to reflect higher order thinking skills. Unfortunately, the handbook reveals that many teachers in adult learning classroom expose students to questions that contain lower level thinking skills which are of knowledge and comprehension (Gall, 1984).

Bloom's Taxonomy of Critical Thinking

The study uses a model by Benjamin Bloom to see the application of high level thinking skills among students involved in the study. Atherton (2005), defines taxonomy as classification. According to him in using the taxonomy, the learning objectives are of attempts to classify forms and levels of learning (p.1). Johnson & Lamb (2007), refer to the three upper levels in the Bloom Taxonomy as HOTS (Higher Order Thinking Skills); wherein the critical thinking can be thought of activities requiring left-brain to be more functioning than the right brain (for creative thinking activities). In this study, the higher level thinking skills are the priority since I believe students can value opinions of others by analysing, synthesising and evaluating. It cannot be denied that the lower thinking abilities have their importance; however the difficulty levels of the writing assignment given, require them to think beyond the lower level thinking skills.

Figure 1: Benjamin Bloom's Taxonomy of Critical Thinking



Most of the study in the review of related literature on collaborative learning in this section emphasise the effectiveness of using the method for learning. However, only the study by Gokhale's (1995) investigates the core subject matters in the current study i.e. collaborative learning and critical thinking skills (specifically higher level thinking skills) to his students taking Basic Electronics course. This study therefore, attempts to see how the subject matters can be integrated in the language learning.

METHODOLOGY

The discussions under this section are divided into two sub headings; Design of the Study and Institution and Respondent

Design of the Study

A case study was chosen for this qualitative research since I was interested in exploring one case within a bounded context (Creswell, 2007). In other words, I wanted to investigate the use of higher level thinking skills when students collaborate with each other in learning English. Fraenkel & Wallen (2003), state that a case study is a study of individual, classroom, school or programme. Thus for this study, four individuals undergoing a programme or a course were selected to investigate their collaborative effort after thinking critically in a given task. Relevant to the statement, I believed that the identifiable case (Creswell, 2007), that was to see how ESL students used critical thinking in collaborative learning, enabled me to understand deeply the boundaries in the case (Creswell, 2007). Moreover, the boundaries helped me to specify the amount of information that I would liked to collect about the case as Creswell (2007), stated that "...boundaries that are time, place, events and process need to be decided since they enable researchers to adequately know the information that needs to be search surround the case" (p. 76). In a similar regards, activity conducted in the study was another boundary in adopting a case study as assured by Fraenkel & Wallen (2003).

Institution and respondents

UMP was chosen as the location to collect the data for the study. As a teacher in the university, I believed that it was a good effort to study the situation; providing insights that will help other students to improve their critical thinking ability in collaborative learning environment. As was coined by Creswell (2007) this was one of the boundaries in the study while another boundary was the activity wherein I only investigated higher level thinking skills' levels that were analysis, synthesis and evaluation in their writing assignment.

I used purposive sampling namely typical sample in selecting the respondents because I believed they were typical or representatives of the subject matters (higher order thinking skills and collaborative learning) that I wanted to study (Fraenkel & Wallen 2003). In this case therefore, I chose respondents who are majoring in Chemical and Natural Resources and have experience in collaborative learning and use higher thinking skills to certain extent. In terms of English language proficiency, their levels were at medium and slightly low performance. It gave me the opportunity to see how these mix ability students can collaborate with each other in producing higher level thinking skills.

They chose to be called Smith, Ballack, Borhan and Farid when I asked them to provide pseudo names for the study. Concerning their demographic background, Smith is a Bumiputra student from Sabah. Farid is a Malay boy that comes from the same place as Smith. For Borhan, I assumed that he is from Kelantan due to his Kelantanese English slang. Finally, Ballack is a footballer fan and as such choose the name as he admires Micheal Ballack; the midfielder and a current captain of the German football national team.

Data collection procedures

This heading discusses major topics in data collection procedures. These are the researcher as the instrument, semi- structured interview, field notes and writing assignments in the course of collecting data from the respondents.

The researcher as the instrument

In collecting qualitative data such as in a case study, the qualitative researcher was the primary instrument for data collection and analysis (Siegle, 2008). He further stated that "data was mediated through this human instrument, rather than through inventories, questionnaires, or machines" (Siegle, 2008, p. 1). As the instrument, I assumed a non participant observer in the study. Thus, I made it clear to the respondents of my role as a researcher in the study (Fraenkel & Wallen, 2003) to ensure that they know what I expected from them out of the writing assignment given. To ensure my credibility in observing students engaging in the activity, I shared the experience of the observation with my colleagues who could recognise the description of the activities in the course of the study (Ary, Jacobs & Razavieh, 2006).

Semi Structured Interviews

To provide evidence of analysis for the study, semi- structured interviews was primarily used to observe someone else's experiences (Richards, 2005). In interviewing the

students, I devised a semi structured interview with a series of questions designed to elicit answers on the part of the respondents (Fraenkel & Wallen, 2003). Later, the data obtained was compared and contrasted (Fraenkel & Wallen, 2003) to build an in-depth picture of the case.

Using semi structured interview also was practical since I could 'net' the most useful information to answer the research questions at hand (Creswell, 2007). Because of inadequate recording procedure such as lapel mike to record the interview (Creswell, 2007), I replaced the device with my colleague's camera; Sony Cool Pix S550 and the voice recorder in my mobile phone; Nokia 3220. The technology offered by these devices, made me 'dismissed' the interview protocol in writing responses to the interviewees' comments (Creswell, 2007) conducted in one of the meeting rooms in the Centre of Modern Languages & Human Sciences (CMLHS).

Prior to conducting the interview, I obtained consent (Creswell, 2007) from the students to participate in the study. This was done in front of their English teacher whom was also a colleague of mine in the institution. That the consent was done verbally by having my colleague to witness their voluntary participatory, I then regarded it as a verbal informed consent by the students. The interview was completed within a limited time due to performing Friday Prayers on that day. In analysing the data, I transcribed, coded and categorised the data from the interview. In the later part, I formulated themes which helped me to organise and make sense out of a larger amount of data obtained (Fraenkel & Wallen, 2003) from this source.

Field Notes

Field note was used to check on the accuracy of a researcher's observation (Fraenkel & Wallen, 2003). I took a field note in the form of field diary as my personal statement towards my feelings, opinions and perceptions about the respondents' interaction, behaviour and attitude. I found that field diary was useful to write important notes while observing the respondents participated in the writing assignment carried out in the study.

Writing Assignment

I required respondents in the study to write a five paragraph essay in analysing the data from a graph. They were given 20 minutes to analyse it after spending ten minutes discussion with their friends. Since I did not have a proper assignment to give them, my colleague suggested that I could use the exercise in her collections of International Language Testing System (IELTS) Task 1, as the assignment for the students. In writing the assignment, I briefed them they did not have to follow the writing format in IELTS Task 1. Following the chart, they need to show the different types of goods and services purchased online in Australia, Canada and the United Kingdom. For the content analysis of students' written assignment, I checked on the descriptive information collected via this form and allowed categories to emerge as the analysis continued (Fraenkel & Wallen, 2003) in the writing assignment. In deciding the sampling plan, I examined the application of higher level thinking skills to obtain the representative sample of the unit to be analysed (Ary, Jacobs & Razavieh, 2006).

RESULTS

Creswell (2007), stated that in reporting data for case study, analysing case and its setting were crucial. Stake (2006 in Creswell 2007), added that the categorical aggregation enabled a researcher to seek a collection of instances from the data and thus provided meaning to the study conducted. In relation to the statements, the discussion that follows in this session answers the earlier research questions by reporting the themes emerge after the collection of data has been done. Table 1 shows the summary of the themes based on the research questions post in the study. Apart from the themes derived from the interview, written remark in the field note and finally the content analysis in the assignments also support the themes in Table 1.

Table 1: **Summary of themes according to Research Questions**

Research Question	Themes
How do learners of ESL take responsibility after thinking critically over an issue in collaborative learning?	The Sense of Togetherness in Learning
How is it possible for ESL learners in admitting their initial opinion to be incorrect or partially flawed in collaborative learning environment?	Display Tolerance in Accepting Other Views The ‘You Never Know if You Don’t Try’ attitude Positive Arguments Lead to Better Collaboration
What are the strategies that students of ESL use in working collaboratively after thinking critically over an issue?	Discussion in highlighting critical points Negotiation for Various Opinions

The Sense of Togetherness in Learning

Respondents in the study felt that in order to take responsibility of their learning, the feeling of togetherness must be instilled in the group. Being individualistic should not be the key to learning collaboratively for they have analysed, synthesise and evaluated all the ideas and opinions given by fellow friends in the group. An excerpt from Smith below indicated that the sense of togetherness could be demonstrated when his entire group member worked together to achieve the ‘best’ for a given task.

“..by *working together* we can actually maximize the way we can actually work in this kind of situation and all that. By *working together* we have this cooperation and all that.. So, cooperation and ideas, come from everyone. We can collaborate (sic) and *work together*. Find the *best solution* for everyone... and then you know what, one more thing, by *working together* we can actually go to this kind of experience”

Borhan said that the mentality to be the dominator or leader in a group at all occasions could not benefit the person (or member) involved in collaborative learning. Instead, they could not learn anything new because they denied the ideas or opinions of others

although it (ideas or opinions) was thought critically by other members in the group. To him, flexibility in accepting that at occasions one needed to become a leader and at other time, a member in the group, would bring togetherness among group members.

It depends on what I had [what I can become at that point in time]. I think if I can be that , aaa, I...I'm good on [in] that situation. So, maybe I can be a, can be aaa, leader. If I'm not, I don't know, I can just be members and I try to learn something new.

The sense of togetherness was also witnessed in my observation when I made the remark by writing in my field diary; "All respondents read content of the graph" "All of them write something on their notes" and "All of them concentrate on what they want to write" during writing assignment. The responses of togetherness showed by the respondents in this regard were commented by Brown (2001), stating that, "the feeling of being alone was overcome when students join together in a community of learners who supported one another" (p. 1). In his study of asynchronous educational administration courses by Lotus Notes through the Internet, it showed that people needed to come together voluntarily to be part of a community in collaborative learning. He further added that the sense of belongings derived when a classroom community examined or struggled the information, an issue, or an idea at hands.

Display tolerance in accepting other views

Ballack stated in the interview that cooperation (give and take) was the key element in accepting his friends' opinions and thoughts although he admitted it was not easy for him to comply with them. Borhan maintained that keeping the idea at some other time, showed his acceptance that his idea was not 'sellable' at that moment. Ballack also said that it was not easy for him to admit that his idea could not be accepted by the members in the group. Since his friends had stronger points compared to him, he withdrew from being 'stagnant' with the point he had. Thus, making him reserved his point at a later time. He commented:

In my opinion, to be honest.. it is quite difficult to... what..to accept others' opinion.. when yours ...yours... why you should accept it? But it's normal, we have to give and take.. you do something (sic) you pay. So, you're not alone.. you must (co)operate with each other...

Leo, et. al (2006), stated the aspect of displaying tolerance in collaborative learning in their Collaborative Learning Flow Patterns (CLFP). They claimed that one of the elicits of CLFP's that was 'attitudinal objective' made learners tolerate and respect [one another in learning]. It also derived from motivational and emotional competencies of the learners in collaborative learning. On the other hand, they further clarified that a procedural objective which was another CLFP's elicits enabled learners to promote analytical reasoning skills among them. Thus, the use of attitudinal object (motivation) and procedural object (critical thinking) were pivotal to ensure tolerance among group members.

The 'You Never Know if You Don't Try' attitude

Insisting that one's opinion was right as displayed in Smith's statement below provided answer to my research question on the readiness of admitting flaw of ideas after thinking critically.

... firstly before I go on with that, I will fight for my opinion first. If my opinion, really, really doesn't [don't] suit everyone, then I have to accept it myself...

Collaboration script could be used to 'reduce' Smith's 'stubbornness' in admitting his flaws as suggested by Dillenbourg (2002). He advised that learners should have a *collaboration script* where "The 'You Never Know if You Don't Try' attitude", could solve problems after they were thought carefully by all members in the group.

"One way to enhance the effectiveness of collaborative learning is to structure interactions by engaging students in well-defined scripts. A *collaboration script* is a set of instructions prescribing how students should form groups, how they should interact and collaborate and how they should solve the problem [by thinking critically of the subject matter] (p.1)"

Positive Arguments Lead to Better Collaboration

Farid believed that arguments were 'healthy' in collaborative learning process. In fact, he claimed that better conclusion could be derived when all members in the group focused on the issue at hands. He stated:

The strategies of collaborate in group...aaa... first we must ...aaa..know where the situation, know where the problem..what we [are] going to discuss.. so, when we know, after we know ... [it] after we know the main issue so we can get aaa.. we can discuss after that. We can discuss and discuss giving our thoughts, ideas and opinions without aaaa.... go over the line..it, mean like the issue we not talking about other issue, we just focus on that issue..aaa, so the discussion will be aaa...go along and aaa...the result is aaaa..i think maybe, the result ...is good

In Farid's statement above, analysis level was also demonstrated since members in the group analysed the situation by focusing on the problem and finding 'appropriate' thoughts, ideas and opinions to derive a conclusion (he referred conclusion to result).

In my field diary, I wrote my observation of the 'healthy' argument of non verbal gestures as demonstrated by Ballack and Farid, "Ballack and Farid seem to be angry". Another non verbal gesture was displayed by Ballack; "Ballack interrupts... using his hands to show that he refuses to accept Smith's points". However, the tense arguments among them were ended when "Ballack makes a funny statement and they laugh".

The ‘healthy’ learning environment as coined by Farid and demonstrated by Ballack was supported by Baker et.al (2003) in the excerpt below where they stated that associated argument following the chain of argument can provide meanings to the arguments.

“Students broaden their understanding of a space of debate when they are better acquainted with societal and epistemological points of view, their *associated arguments* and value systems; they deepen it when they are able to go deeper into *argument chains*, to elaborate upon the *meaning of arguments*, and to better understand the notions involved (p. 1)”

Discussion in Highlighting Critical Points

All the respondents agreed that discussion was vital for collaborative learning strategy. Regarding this matter Borhan responded:

OK...emm, my opinion when we want to collaborate with one another, firstly we need to aaaa...to..aaa.. make a discussion..aaa...to get the idea, the point such as for what we do that... to improve the ..to improve and to make the task to be success.

His idea on discussion as one of the strategies in collaborative learning was supported by Ballack. In his statement below, respondents demonstrated the highest form of critical thinking i.e. evaluation in relation to having discussion with their friends.

Of course we have to discuss, we have to find more ideas and points and after we get the point we have to find out the advantage and disadvantage of the point...

In this regard Totten et. al (1991), claimed that “the shared learning gave students an opportunity to engage in discussion where they took responsibility for their own learning, and thus become critical thinkers (p.22)”. They added that it actually provided learners with opportunities to analyze, synthesize, and evaluate ideas cooperatively.

Negotiation for Various Opinions

In the writing assignments, all respondents showed that they negotiated the various opinions given by their fellow friends. In the introductory paragraph of their essay, all of them wrote similar content by highlighting that the graph is about different types of goods and services purchased online in Australia, Canada and United Kingdom. The example of negotiation in this remark is at the synthesis level where students were able to compromise on one way of writing the introduction.

CONCLUSION

Collaborative learning can be initiated should students be given the room to debate on an issue. By comparing (analysis level), categorising (synthesis level) and explaining (evaluation level), students can demonstrate higher thinking abilities. In the study it was witnessed that students were able to demonstrate both, collaborative learning and higher order thinking skills when they were put into a group. In language learning, collaborative

learning could assist low level proficiency students in coming out with ideas since high level proficiency students could offer assistance to them by way of correcting their sentences and clarifying the low level proficiency students' ideas and thoughts. The act of sharing opinions and ideas is essential in collaborative learning since analysing, synthesising and evaluation is much easier done with many heads rather than one. The remaining discussion in this section focuses on the Limitations of the Study and Suggestions and Recommendations for Further Study.

Limitations of the study

This section discusses several limitations derived from the study and they include the following factors:

- i. The study that was done in a meeting room seemed to be inappropriate location for the students to think critically in a collaborative learning experience.
- ii. Limited time period; 2 hours and 10 minutes hindered the input and data collection from the students
- iii. Non- appropriate timing where the study was conducted in the revision period of students' academic calendar

Suggestions and Recommendations for Further Study

Among the suggestions and recommendations for further study in this topic are per below:

- i. Various activities should be integrated in collaborative learning using higher thinking skills
 - a. Other activities such as giving parts of propaganda for students to *analyse*, requiring students to produce invention at *synthesis* level and critiquing their self- evaluation in *evaluation* phase should be explored by other researcher .
- ii. Integrating technology into the context of collaborative language learning is worthwhile since the effects of technology provide numerous insights into the way students can think critically.

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