IMPLEMENTATION OF JIGSAW TECHNIQUE IN CHINESE READING COMPREHENSION AT CHUNG HUA PRIMARY SCHOOL

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ABSTRACT

Cooperative learning, a well-documented pedagogical practice, poses challenges to teachers in classroom execution (Molla, 2015). This study aims to investigate the benefits of Jigsaw, the challenges faced by teachers in its implementation and the students' responses toward this pedagogical technique in Chinese reading comprehension in Chung Hua Primary School. Based on the data obtained from observations, interviews and questionnaire, the research findings of this study revealed ten benefits of the technique, along with some major challenges faced in using this technique. The result also showed that generally, the students tend to be supportive of cooperative strategies in teaching and learning related to reading comprehension. The students were more active and confident to share their ideas.

Keywords: *Jigsaw, cooperative learning, reading comprehension, Chung Hua Primary School*

INTRODUCTION

Cooperative learning is a pedagogical practice that enhances learning (Molla, 2015). Many teachers of all levels use it in their classrooms. It aims at creating learner-centered learning to increase the level of understanding and reasoning, develop critical thinking and increase the accuracy of long-term retention (Koppenhaver & Shrader, 2003). In cooperative learning, learners work in small groups or teams which contain three to six students with heterogeneous capabilities. These learners work together until the goal is attained (Megahed & Mohammad, 2014). Several studies suggest that students who work together in groups tend to have better learning outcomes, more positive interpersonal relationships, and improved mental health when compared to purely individualistic learning (Attle & Baker, 2007). Other evidences from studies by Nejad and Keshavarzi (2015), Zhang et al. (2013), and Zhong et al. (2001) have also proven that cooperative learning has a higher effect on reading comprehension skills when compared to traditional teaching. However, in actual language classrooms, chalk and talk method is mostly used in class (Hossain, Tarmizi & Ayub, 2012).

Problem Statement

Compared to traditional learning methods, cooperative learning improves interaction in groups, promotes individual responsibility for learning, and meta cognitive awareness (Dallmer, 2007). By implementing cooperative learning, Malaysian students, in their process of learning, will have the opportunity to develop interpersonal, teamwork and leadership skills as they learn to work together. They learn to share ideas and to be accountable to one another. These skills are essential to the students to be successful in their future careers.

Nevertheless, the present primary educational system in Malaysia is still exam-oriented with a strong emphasis on individual achievement. Teachers are pushed to an extent that finishing the syllabus and drilling students with exam answers and questions became their utmost concern (Hashim & Laha, 2013). Data collected through informal interviews or dialogues with some Chung Hua Primary School teachers showed similar points of view on this matter. A particular teacher from one of the Chung Hua Primary School mentioned that most of the time, she had to rush through specified topics in the curriculum to prepare students to sit for the public examination [Primary School Assessment Test, also known as *Ujian Penilaian Sekolah Rendah* (UPSR)] in September. Thus, time saving teacher-centered strategies like chalk-and-talk and drilling were more preferable to her. On top of this, participation and responses were less encouraging in class activities. Most of the students tended to chit chat in the group instead of discussing the topic given. As a result, the better students in the group were 'pushed' to bear the responsibility of completing group task.

As educators, our utmost concern is to enhance our students' learning. Obtaining information about our students' learning preferences could be one of the ways in enhancing their learning. We need to find out the learning preference that is specific to our own group of students in local setting. Thus, teachers are encouraged to deliver knowledge in such a way that enable students to learn process skills and values while acquiring academic knowledge for their academic and professional development (Tarmizi & Ayub, 2012).

Jigsaw technique is one of the cooperative learning techniques that is used to stimulate students to acquire the knowledge as well as to create interpersonal and team skills. In the Jigsaw environment, learning revolves around interaction with peers, students actively participate in the learning process and thereby help to build inter-personal and interactive skills among themselves. Teachers who want to implement Jigsaw also find it easy to learn, and enjoy working with it. According to Adams (2013), the Jigsaw technique can be effective even if it is used for just an hour per day and can also be used simultaneously with other teaching strategies. However, there is still a challenge that many teachers have difficulties in accomplishing that (Molla, 2015).

Objectives of the Study

Based on the issue mentioned, this study aims to explore the benefits of Jigsaw technique, the challenges faced by teachers in its implementation and the students' response toward its implementation in Chinese reading comprehension in Chung Hua Primary School. Hopefully, the findings could be used in promoting and improving cooperative learning in Chinese reading comprehension in Chung Hua Primary School.

Research Questions

This research is conducted with the purpose to find answers to the following questions.

- What are the benefits of Jigsaw technique in Chinese reading comprehension in Chung Hua Primary School?
- What are the challenges faced in the practice of Jigsaw technique in Chinese reading comprehension in Chung Hua Primary School?
- How is the response of the students toward the implementation of Jigsaw technique in Chinese reading comprehension in Chung Hua Primary School?

LITERATURE REVIEW

Cooperative Learning

Johnson, Johnson, and Stanne (2000) suggested that cooperative learning is to be absorbed in the mainstream of educational practice because it is a theoretically-based approach which has been proven to be highly effective in enhancing student learning and improving social relations. Active participation in the learning experience will also result in an improvement in academic performance.

Compared to traditional learning methods, cooperative learning improves interaction in groups, promotes individual responsibility for learning, and meta cognitive awareness (Dallmer, 2007). The benefits of cooperative learning also include increased cooperation and more well-developed social skills, motivation, and retention of knowledge (Davidson & Major, 2014). It yields increased efforts among students, promotes more positive interpersonal relationships, and improve mental health when compared to purely individualistic learning (Attle & Baker, 2007). Al-Munawwarah (2013) also found that students who have been exposed to cooperative learning know how to work cooperatively, besides being active and confident to share their ideas.

In addition, Norah Mashouj (2015) also stated in her research that students who had cooperative learning experiences were more positive towards academic learning, had higher academic expectations and were more appreciative of the ideas and opinions of other students. As such, learners improve their critical thinking and intellectual skills by learning from one another (Jbeili, 2003).

Jigsaw Technique

In education, Jigsaw is a teaching technique invented by social psychologist Aronson (1971). Jigsaw technique emphasizes cooperative learning by providing students an opportunity to actively help each other build comprehension (Marhamah & Mulyadi, 2013). Students of an average sized class (26 to 33 students) are divided into groups of four to six students. Individual members of each group then break off to work with the "experts" from other groups, researching a part of the material being studied, after which they return to their starting group in the role of instructor for their sub-category. These features of Jigsaw technique enhance development of students' meta cognitive awareness and learning through teaching peers in a small group in reading comprehension (Jing Meng, 2010). Mengduo and Xiaoling (in Crist, 2012) also stated that Jigsaw classroom reduces students' reluctance and anxiety to participate in the classroom activities while increasing self-esteem and self-confidence. In addition, Aronson and Patnoe (2011) also pointed out that Jigsaw technique increases students' liking for school and their enthusiasm about learning, provides a way to help students to be actively involved in classroom activities. By involving in the activities, the students focus on listening, speaking, cooperation, reflection, and problem-solving skills (Marhamah & Mulyadi).

Through Jigsaw technique, Jing Meng (2010) in his study had proven that the students in the experimental class benefited from the cooperative learning approach as it fostered the interest of students towards their English study, aroused their motivation, and improved their reading ability. Furthermore, undergraduate students also showed that they were more cooperative, and had significantly greater improvement in their achievement. They believed that Jigsaw is an effective cooperative learning technique that promotes positive attitudes and helps in developing inter-personal skills. By using Jigsaw in teaching and learning activities, students' attention is more focused and they are expressive. Students who are shy will automatically respond to all assigned tasks, are more active and confident and willing to share their opinions. These students can also listen to the opinions of their friends and respond immediately. For the group leader, the soft skills to work in groups will be sharpened (Marhamah & Mulyadi, 2013).

Although the benefits of Jigsaw technique in cooperative learning are well documented, implementing this pedagogical practice in classrooms is a challenge that many teachers have difficulties accomplishing (Molla, 2015). Molla in his study revealed that the major challenges in the implementation included lack of training on how to successfully implement cooperative learning, lack of students' accountability for their learning and the learning of others, lack of motivation, students' reservation to get actively involved in cooperative learning, lack of awareness and absence of clear guidelines for assessment, students' competition to score better grades, and negative attitude of teachers towards the instructional approach. Moreover, another study by Adams (2013) indicated that pupils have problems in actively

participating in lessons and did not know how to learn in groups. Lack of understanding of collaborative and cooperative learning was the pupils' disadvantage too.

JIGSAW TECHNIQUE PROCEDURES

In this study, the Jigsaw technique procedures were adapted from Dycus (1996) and the total time for these procedures is estimated to be 90 minutes. These procedures comprised of a few activities as described in the following.

Home Group Activity (Time: 20 minutes)

1. The class is divided into 7 home groups with 6 members in each group.
2. Students are briefed on the rules apply to this activity and they note the rules.

Combined Group Activity (Time: 20 minutes)

1. When the students are ready, each member of the home group will be given a task. They read the task and move to form a new group with the same task. Each new group (expert group) has at least one member from each of the other groups. They then discuss and note down the content and questions raised in the discussion. The members will be the experts of the given task. Take for example, each home group member with task 1 will be in the expert group of task 1.

Home group activity (Time: 30 minutes)

1. The students take turns reading, paraphrasing, explaining and answering questions about their sections, as well as asking the questions they wrote down in their previous groups. These students are encouraged to stop each other, ask questions and do whatever is needed to come to a conclusion and to discuss any interpretations that come to mind.
2. The students write down a brief description of what the text is about. This should not take too much time. They may skip it if running out of time.

Full Class Discussion and Wrap-up (Time: 20 minutes)

1. Students stay in their home group. Representative from each group takes turn to explain what they have discovered. Understanding about certain points may varied from group to group. And this can be exploited for discussion purposes (e.g. to point out where comprehension broke down).

METHODOLOGY

Design of the Study

This case study employed both qualitative and quantitative research method to collect data on the implementation of Jigsaw technique in reading comprehension in Chung Hua Primary School.

Participants

This research was conducted in a Year Six class in one of the Chung Hua Primary Schools whereby Chinese is one of the major subjects. A total

of 34 participants consisting of 16 boys and 18 girls were randomly selected to participate in this study.

Instrument

The data collecting techniques consisted of observation, interview, questionnaire and the participants' written work. In an observational study, the major data-gathering technique is participant observation supplemented with formal and informal interviews and review of documents (Bogdan & Biklen, 2007). The observation table used as instrument in this study was adapted and modified from the studies by Furtwengler (1992) and Kibuye Wadawi (2013).

Data Analysis

Analysis of observational data

Based on Burns (1999), observational data is analyzed through assembling the data, coding and comparing the data, building interpretation and reporting the outcomes.

Analysis of questionnaire data

The items in the questionnaire were analyzed using the Statistical Package for Social Sciences (SPSS). For every item, its frequency, mean and percentage were taken.

Analysis of interview data

Semi-structured interviews were conducted after the analysis of the questionnaires. The aim of the interview was to get in-depth information about the implementation of Jigsaw technique. The interviews were transcribed and analyzed by the researchers. Content analysis (the process of identifying, coding and categorizing the primary patterns in the data, Patton, 1990) was used for coding data and identifying the categories within data.

Analysis of written work

Students' works were assessed and marks were recorded for analysis purpose.

FINDINGS AND DISCUSSION

This study aims to explore the benefits of Jigsaw technique, the challenges faced by teachers in its implementation and the students' responses toward this pedagogical technique in Chinese reading comprehension in Chung Hua Primary School.

Based on the data obtained from observation, interview and questionnaire, the research findings of this study revealed ten benefits of the technique, along with some major challenges. The findings also showed that generally, the students tended to be supportive of cooperative strategies in

teaching and learning of reading comprehension. The students were more active and confident to share their ideas.

The 10 benefits of implementing Jigsaw technique include (i) develop higher level thinking skills in comprehension reading, (ii) promote higher achievement and class attendance, (iii) create an environment of active, involved, exploratory learning, (iv) increase students' satisfaction with the learning experience, (v) build self-esteem in students, (vi) promote a positive attitude toward the subject matter, (vii) develop oral communication skills, (viii) build more positive heterogeneous relationships, (ix) foster and develop interpersonal relationships, and (x) develop students' responsibility for each other, and model societal and work related roles in the Jigsaw environment. These benefits were similar to the findings by Norah Mashouj (2015), Marhamah and Mulyadi (2013), Davidson and Major (2014), Jing Meng (2010), and Attle and Baker (2007).

First of all, the Jigsaw technique develops higher level thinking skills in comprehension reading, promotes higher achievement and class attendance as shown in Table 1.

Table 1

Use of Jigsaw and Improvement in Understanding of Comprehension Passages

Statements	**Items / Frequency (N=34)**		
	Disagree	**Agree**	**Strongly Agree**
15. Jigsaw cooperative learning has enhanced their comprehension reading	5	15	14
16. Able to comprehend passage easier and answer comprehension questions faster when they worked with group members	4	12	18
17. Peer interaction has helped them to obtain a deeper understanding of the passage in comprehension reading	2	17	15

The findings from the questionnaire (Table 1) has shown that 14 out of 34 of the participants strongly agreed and 15 of them agreed that cooperative learning has enhanced their comprehension reading (S15), whereas 15 out of 34 of them strongly agreed, and 17 out of 34 of them agreed that Jigsaw stimulated the students' critical thinking, helped them to clarify ideas and obtain a deeper understanding of the passage in comprehension reading (S17). Besides, 18 out of 34 of them strongly agreed and 12 out of 34 of them agreed that it is easier and faster for them to comprehend passage and answer comprehension questions through jigsaw group (S16). These students also responded in the interview that their level of understanding and

reasoning improved in the process. They have better understanding of the passage given and they were able to look for specific information from the passage. This is in line with the findings by Megahed and Fathia (2014) and Ibrahim (2003) that cooperative learning environment has encouraged learners to learn together and improved their critical thinking and intellectual skills by learning from one another.

Table 2 shows the researchers' observation during the implementation of Jigsaw technique.

Table 2

Observation on Jigsaw Technique

Group facilitation	
Cohesiveness	
Interest to learn from their group members	□ Listen to more organized students □ General interest is well shown through questions and general contribution of most of the group
Trust from members to seek clarification from the group	□ The more organized and prepared group members asked more questions □ The less organized asked interrogative type of questions
General cheer and support from group members	□ Group members show interest to help their members
Presentation of the content	
Communication ability of the students	□ Some groups are well prepared for presentation and the presenters had clear and loud voice. □ Most students communicated well
Confidence of the presenter	□ Well prepared students had more confidence in presentation □ Confidence is also related to group cheer and support □ Interest to learn from members gave the presenters more confidence and courage
General and instant formative assessment of the leaning outcome	□ Class participation expressed a positive formative assessment □ Most of the students completed their task without leaving them blank

As shown in Table 2, most of the students discussed actively within the group in the jigsaw learning environment and were willing to share their opinions and listened to the content presented by their group members in comprehension reading class. They were willing to follow the instructions given and they were more attentive in class. They stayed on task more and are less disruptive. In completing their assessment test, most of them were able to give simple answers instead of leaving it blank. This feedback was supported by their subject teacher. This has shown that involvement in

cooperative learning is a strong predictor of a student's academic performance (Tsay & Brady, 2010). This finding is in line with the findings by Sophia Fithri (2013) that cooperative learning can engage pupils in reading activity and provides students with opportunity to achieve higher level of engagement in learning activity. Besides, students in Jigsaw classes were absent less frequently, stay more in the school yard and performed better in exams (Adams, 2013).

Other evidences like the studies by Nejad and Keshavarzi (2015), Zhang et al. (2013) had also proven that there is a higher effect on reading comprehension skills when compared with the effects of traditional teaching methods. Zhong et al. (2001) have even proven that cooperative learning has a better effect on slow learners in reading comprehension. As such, Chukwuyenum, Nwankwo and Toochi (2014) recommended that cooperative learning strategies should be given emphasis in the curriculum of teacher education so as to improve students' achievement.

Jigsaw technique creates an environment of active, involved, and exploratory learning. It uses a team approach to problem-solving while maintaining individual accountability. The students in a group use their collaborative skills to help each other learn and to encourage each other to participate in problem solving and cooperative learning. This also helps to encourage a diversity of understanding. They have greater ability to view situations from others' perspectives. In fact, classroom studies show that the amount and breadth of students' reading is strongly related to social interaction as well as strategy teaching (Guthrie, Schafer, Wang and Afflerbach, 1995).

From the findings (Table 3), 17 out of 34 of them strongly agreed, and 15 out of 34 of them agreed that they were given more opportunities to share their points of view (S13).

Table 3.

The Use of Jigsaw and Learning Environment

Statements	Items / Frequency (N=34)		
	Disagree	**Agree**	**Strongly Agree**
8. Students learnt to work with classmates who are different from them.	0	18	16
13. Students were given more opportunities to share their points of view.	2	15	17
14. Students learnt to accept others' point of view.	3	14	17

They learnt to work with classmates who are different from them (S8) and learnt to accept others' points of view (S14). 16 out of 34 of them strongly

agreed and 18 of them agreed with S8, while 17 of them strongly agreed and 14 of them agreed with S14. A total of 31 out of 34 participants also agreed that jigsaw class had enhanced their participation. The data collected from the interview with the subject teacher and class observation have also reflected that most of the students participated actively in groups. Each group member in the group played their own roles in encouraging their members to share their opinions for their mutual target in the Jigsaw group. According to Jolliffe (2010), in a Jigsaw class, the teacher is not the sole provider of knowledge as most of the work was done by the students that made it an efficient way to learn. Students took ownership and achievement in their work. Hence, students must be held accountable as individual and as a group for their performance. This kind of 'primitive interaction' provides the conditions for learning to occur and to thrive when individuals encourage each other to achieve the group goals. This in turn incorporates group and individual reflection where groups monitor and assess their functions underpinned by skills of encouragement, management communication and conflict control (Jolliffe). With the exploration of individual differences in a safe, positive and nurturing environment, students recognized that each individual is different and unique. Understanding of diversity helps to move beyond simple tolerance, acceptance and respect.

The Jigsaw technique also increases students' satisfaction in their learning experience, builds self-esteem in students and promotes a positive attitude toward the subject matter as shown in table 4.

Table 4

The Use of Jigsaw and Improvement in Attitude, Interest and Creativity

Statements	Items / Frequency (N=34)		
	Disagree	**Agree**	**Strongly Agree**
2. Cooperative learning can improve their attitude towards reading comprehension.	0	18	16
11. Group activities had made comprehension reading more interesting.	2	15	17
12. Their learning in comprehension reading was also better organized when they were in a group.	3	14	17
19. Students were more creative in group setting.	5	17	12

From the findings (Table 4), 18 out of 34 participants strongly agreed and 11 out of 34 of them agreed that group activities had made comprehension reading more interesting (S11); they were more creative in group setting (S19). 12 out of 34 of them strongly agreed and 17 out of 34 of them agreed with statement in S19. These findings showed that Jigsaw technique has fostered the interest of students in their study (Jing, 2010)

In addition, their learning in comprehension reading was also better organized when they were in a group (S12). Most of the students either strongly agreed (N=11) or agreed (N=17) with statement in S12. Both the subject teacher and students' interviews showed that in jigsaw group, the group discussion was well-organized by the group leader and each member in the group has a chance to share their answers and opinions. Most of them interacted actively with each other and carried out the activities according to the instruction given. Their understanding of the implementation of cooperative learning and interaction in the activities have improved compared to the implementation of jigsaw cooperative learning at the beginning. This is in line with the findings of Jing (2010) that jigsaw cooperative learning has improved their reading abilities. In the process, students were motivated. They more self-confident, able to express themselves better and participated more confidently. Jigsaw cooperative learning has helped to increase students' motivation to practice actively in the activity (Al-Munawwarah, 2013; Adams, 2013; Jing, 2010).

Furthermore, Table 4 has shown that all the students agreed that cooperative learning can improve their attitude towards reading comprehension (S2). According to the subject teacher, good ones were willing to teach the weaker ones in a jigsaw group. In the same light, 55.8% of the teachers agreed that bright learners scaffold slow learners, till these slow learners become independent in cooperative learning (Molla, 2015). In a cooperative learning environment, weaker ones were more willingly to voice out their problems and asked help from the good ones, low achievement students also improve their ability in reading comprehension. In general, the opinions towards classroom atmosphere were positive. On top of that, there is an increase in efforts among students, more positive interpersonal relationships and improved mental health when compared to purely individualistic learning (Attle & Baker, 2007). These finding are in line with the finding of Mashouj (2015) that students who had cooperative learning experiences were more positive towards academic learning, had more academic expectations and more appreciative of the ideas and opinions of other students. Evidence also suggests that Jigsaw promotes positive attitude and helps in developing inter-personal skills (Marhamah & Mulyadi, 2013). This helps to yield higher self-esteem. High self-esteem leads to better performance and interpersonal success, which in turn leads to improved happiness and healthy lifestyle associated with increased self-efficacy, body image and leadership (Megahed & Mohammad, 2014). This in turn has increased their satisfaction in their learning experience.

The Jigsaw technique develops oral communication skills, builds more positive heterogeneous relationships, as well as foster and develops interpersonal relationships. Peer interaction in the jigsaw environment has helps them to socialize and promotes friendship among the students. From the findings (Table 5), 21 out of 34 of the participants strongly agreed and 13 out of 34 of them agreed in the questionnaire that Jigsaw technique has

helped them to socialize more in reading comprehension class (S6). A total of 17 out of 34 participants strongly agreed and 15 out of 34 of them agreed that it has promoted their friendship in the process. In short, Jigsaw technique has fostered the interest of students in their study, aroused their motivation, and improved their reading ability (Jing, 2010) .

Table 5

The Use of Jigsaw and Interpersonal Relationships

Statements	Items / Frequency (N=34)		
	Disagree	Agree	Strongly Agree
6. Cooperative learning helps me to socialize more.	0	13	21
7. Cooperative learning promotes friendship among us.	2	15	17

Students can develop responsibility for each other, practice modeling societal and work related roles in the Jigsaw technique. The data in the questionnaire (Table 6) has clearly revealed that Jigsaw technique has forced them to take on more responsibility in comprehension reading class (S4). Out of 34 participants, majority of them strongly agreed (N=15) and agreed (N=17) with this statement. All of them agreed that it has enhanced good working relationships (S9).

Table 6

The Use of Jigsaw in Enhancement of Responsibilities and Working Relationships

Statements	Items / Frequency (N=34)		
	Disagree	Agree	Strongly Agree
4. Jigsaw approach has forced them to take on more responsibility in comprehension reading class	2	17	15
9. It enhances good working relationships	0	18	16

Besides, 10 students in the interview (Table 7) revealed that the group leaders would play their role in the group and the group members with higher competency would also help the group members in the jigsaw cooperative learning environment. This is in line with the findings of Molla (2015) bright learners scaffold slow learners, till these slow learners become independent. Cooperative learning environment has increased cooperation and more well-developed social skills, motivation, and retention of knowledge (Davidson & Major, 2014).

Table 7

Summary of the Interview with Students (N=10)

Students practice modeling societal and work related roles: Q1 How do you all work in the jigsaw cooperative group?					
Answer	Discuss together	Encourage group members to take part / help group members	Solve problems together like quarrel, difficulties, uncooperative	Choose the best	Leader monitor the group
N	all	2	4	2	4
Q2 How did your group leader lead your group in discussion?					
Answer	Give opportuni-ties to share opinion	Vote for the best answer	Leader explained especially to the weak ones	Leader lead the groups to share their opinions part by part	Leader strict and organized
N	3	2	6	1	1

N= number of students out of 10
Note: A few students had shared more than one point of view

From the findings, 10 benefits have been identified in this study with the aim to promote and improve cooperative learning in Chinese reading comprehension in Chung Hua Primary School.

However, the data gathered from both the observation and the implementation of the jigsaw cooperative learning indicated that there were some major challenges in the practice of jigsaw cooperative learning in Chinese reading comprehension in Chung Hua Primary School. There is a great lacking in the following aspects: proper classroom organization, students' reservation to get actively involved in jigsaw cooperative learning, students' accountability for their learning and the learning of others, motivation, awareness, students' readiness, training on the implementation of cooperative learning and time allocation. Most of these findings were similar to Molla's (2015) findings in Ethiopia.

Table 9 shows the researchers' observation based on different parameters during the implementation of Jigsaw technique in this study.

Table 9

Observation on Cooperative Learning

Parameters of Observation	**Observation Comments**	
Classroom organization	**Benefits**	**Issues raised/ Challenges**
Room arrangement / material	Pupils are arranged in a small group of seven, discussion can be carried out smoothly.	room is too small to accommodate so many pupils and for group discussion
Group Size / composition	seven in a group	too many in a group. better 4-5 in a group
General organization of the group	□ 4 out of 6 groups exhibited very good organization – Elements of organization □ Most of the groups show maturity in groups	
Transitions Preparedness of the students	□ Most of the students prepared to take part in cooperative learning	pupils need time to put themselves in to the mode of cooperative learning teacher used to carry out conservative type of teaching
Use of time	90	classes usually arrange in 60min for two periods of time
Group facilitation		
Cohesiveness		
Interest to learn from their group members	□ Listen to more organized students □ General interest is well shown through questions and general contribution of most of the group	□ Less organized group do not attract attention of their group members □ Some pupils lack of general interest through questions – main reason : less acquisition or competence of the language
Trust from members to seek clarification from the group	□ The more organized and prepared group members asked more questions □ The less organized asked interrogative type of questions	□ A few group members ignored and did not asked any question
General cheer and support from group members	□ Group members show interest to help their members	□ A few come out to copy answers from their group members

Table 9 (cont'd)

Observation on Cooperative Learning

Presentation of the content		
Communication ability of the students	□ Some groups are well prepared for presentation and the presenters had clear and loud voice. □ Most students communicated well	□ Groups that presented with soft voice attracted less attention and content is not clear, the presenters had to repeat.
Confidence of the presenter	□ Well prepared students had more confidence in presentation □ Confidence is also related to group cheer and support □ Interest to learn from members gave the presenters more confidence and courage	□ some of the presenters lack of confidence and courage
General and instant formative assessment of the learning outcome	□ Class participation expressed a positive formative assessment	Need more time and activities for pupils to perform better
Monitoring		
Intervening	Teacher and coordinator will intervene and go round to make sure that activities are carried out smoothly	Pupils tend to be dependent. - Less intervention as time pass
Notes progress / problems	pupils take notes	Weak ones and less competence pupils did not take notes as take time to write out the words, tend to copy in the end
Re-teach / discussion	discussion runs smoothly	take too much time
Lesson summary		
Process / product effectiveness	Most of them succeed to follow and activities carried out smoothly	Some of them due to language in acquisition, unable to follow smoothly

Based on Table 9, there was a lack of proper classroom in the implementation. The classroom was not suitable to carry out group discussion as it was too small to accommodate so many groups. The students were frequently interrupted by the noise surrounding them. In addition, an effort to reduce the number of groups has resulted in the increase of the number of group members. According to Adam (2013), The number of students in the group can affect participation. In this condition, the group members needed longer time to wait for their turn and this has given them more opportunity to chit chat rather than discussed the task. This in turn has affected the students' reservation to get actively involved in jigsaw cooperative learning. As a result, these students lacked accountability for their learning and the learning of others, and lacked awareness as well. These findings were similar to Dr. Molla's (2015) findings.

Thus, there is a need to call for teachers' attention in training students on their roles for success of all group members (Molla, 2015). Attle and Bakeras (2007) has proven in their study that the students were not familiar with cooperative learning. In the process, the pupils have to know exactly what is going on as to them this is a new learning environment. Before the implementation of jigsaw cooperative learning, they were used to the conservative type of teaching. They needed more time to accommodate and get themselves ready in the mode of jigsaw cooperative learning. In the implementation process, though there were only a few pupils in the group who have less interest to learn from their group members, the organization in the discussion would be affected. Less organized group could not attract attention of their group members. This is in line with the findings by Adams (2013) that jigsaw technique helped most of the pupils to understand what the researcher was teaching but few of them might not get the concept, they may have less understanding of collaborative and cooperative learning. However, after a few rounds of implementation, the students have gradually understood their roles in the discussions.

Furthermore, these students lacked motivation. Table 10 revealed that weak ones and less competence pupils (slow learners in the group) did not take notes as to them Chinese characters took them too much time to write.

Table 10

Frequency of Statement 1 and 3

Statements	Items / Frequency (N=34)		
	Disagree	**Agree**	**Strongly Agree**
1. I willingly participate in cooperative learning activities.	1	15	18
3. I prefer that my teachers use more group activities.	1	19	14

Least competent and passive students mostly relied on the good ones to complete the task. In the presentation as well, some of the presenters lacked confidence and courage. The presenters with soft voice attracted less attention and the content presented was not clear, and they frequently repeated the content. Adams (2013) has shown in his study that not all students will have the courage to be involved. If suitable motivations were given and the students' abilities are enhanced, they may have more confidence and courage to share their points of view.

Lastly, cooperative learning is time consuming (Adams, 2015). Time constraint was another challenge in the practice of cooperative learning. The activity took 90 minutes. Normally, classes are arranged in 60 minutes. The nature of the time table does not allow enough time for pupils to do their presentation.

To ensure the success in the implementation of Jigsaw technique, teachers not only have to overcome all the challenges faced, but also have to consider their learners' perceptions, views, attitudes and behaviors. These are the major determinants of the success of an instructional program. An analysis of the quantitative questionnaire (Table 10) showed that the students generally tended towards supporting the implementation of cooperative strategies in teaching and learning reading comprehension. A total of 33 out of 34 participants agreed when asked whether they were willing to participate in cooperative learning activities (S1). These students also preferred their teachers to use more Jigsaw technique (S3). As a whole, students became more active, more confident to share their ideas, and learnt how to interact with their peers cooperatively. In addition, the students' responses were positive. This finding is similar to the finding by Nima Farzaneh (2014). To conclude, it is recommended that Jigsaw technique as one of the techniques in cooperative learning can be implemented in teaching reading comprehension in the future (Al-Munawwarah, 2013).

CONCLUSION

The findings in this study highlight the benefits of Jigsaw technique, the challenges faced in the practice of Jigsaw technique and the students' responses toward the implementation of Jigsaw technique in Chinese reading comprehension in Chung Hua Primary School. Based on the data gathered from observation, interview and questionnaire, the research findings of this study discovered 10 benefits of the Jigsaw technique in teaching Chinese reading comprehension at Chung Hua Primary School. The Jigsaw technique (i) develops higher level thinking skills in comprehension reading, (ii) promotes higher achievement and class attendance, (iii) creates an environment of active, involved, exploratory learning, (iv) increases students' satisfaction with the learning experience, (v) builds self-esteem in students, (vi) promotes a positive attitude toward the subject matter, (vii) develops oral communication skills, (viii) builds more positive heterogeneous relationships, (ix) foster and develops interpersonal relationships, and (x) develop students' responsibility for each other, and model societal and work related roles in the jigsaw environment. These benefits were similar to the findings by Norah Mashouj (2015), Marhamah and Mulyadi (2013), Davidson and Major (2014), Jing Meng (2010) and Attle and Baker (2007).

Moreover, the data gathered from both the observation and the implementation of Jigsaw technique indicated that there were some major challenges in the practice of jigsaw cooperative learning in Chinese reading comprehension in Chung Hua Primary School. There is a great lacking in the following aspects: proper classroom organization, students' reservation to get actively involved in jigsaw cooperative learning, students' accountability for their learning and the learning of others, motivation, awareness, students' readiness, training on the implementation of cooperative learning and time allocation.

The result also revealed that the pupils generally tended towards supporting the implementation of cooperative strategies in teaching and learning related to reading comprehension. The students became more active, more confident to share their ideas with their peers. In addition, the students' responses were positive.

With the identified 10 benefits of Jigsaw technique, its challenges faced in the practice and the students' positive response toward its implementation, it is with hope that the findings in this study can help to promote and improve cooperative learning in general and Jigsaw technique in specific in Chinese reading comprehension at Chung Hua Primary School.

RECOMMENDATIONS

Based on the findings, the following recommendations are made. Firstly, reinforcement on the need for the embedded design of cooperative learning pattern language in teacher training and continuous structural support for the implementation of cooperative learning is needed. Secondly, teachers need time and structural support to develop curriculum units that embody cooperative learning approaches to teaching. Thirdly, external professional norms of cooperative learning competencies and incentives may encourage teachers to try innovative approaches like cooperative learning. And fourthly, stakeholders should assist and maintain rapport with teachers and encourage teachers to try on with Jigsaw technique. This will help them believe and change attitude towards the benefits of cooperative learning in maximizing students' learning and social skills.

DIRECTIONS FOR FUTURE RESEARCH

Although the findings in this study have presented valuable information, more research about implementation of Jigsaw technique is still needed. Limited by time and energy, the researchers could only gain this limited result in the study. There are many practical problems which call for teachers and researchers' attention and endeavor for further study. A teacher is supposed to be familiar with advanced teaching methods and strategies. Therefore, more efforts should be given to explore more effective ways of teaching.

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