

# Jigsaw Technique As Effective Way Of Promoting Co-Operative Learning Among Primary School Pupils In Awka South LGA

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*Abstract: The focus of the study was using Jigsaw Technique as a way of promoting cooperative learning among primary school pupils in Awka South LGA. Four research question guided the study The research design was a descriptive survey. The population comprises all the 604 primary school teachers in Awka South LGA. The sample size for the study was 200 teachers who were selected using simple random sampling technique. The instrument for data collection was a 22 item questionnaire developed by the researcher titled Using Jigsaw Technique as an Effective Way of Promoting Co-operative Learning Questionnaire (UJTANEWOPCL). The questionnaire was validated by two experts in Early Childhood and Primary Education and one expert from Educational foundations, measurement and evaluation to be precise both in Nnamdi Azikiwe University, Awka. The reliability was determined using Pearson Product Moment Correlation which yielded a coefficient of 0.85 which was considered high enough to be used for the study. Mean scores was used to answer the four research questions. Findings indicate that Jigsaw cooperative learning strategy improved academic performance of pupils because pupils are active participants in the learning process, also that teachers encounter problems such as, that it is time consuming and some bright pupils may dominate the discussion among others. The study, therefore, recommended that teachers should rather concentrate on teaching techniques or teaching methods like jigsaw technique which will enable pupils to properly understand the concepts taught in class and not allow the bright pupils to dominate the class. Each jigsaw group must be assigned a leader.*

## I. INTRODUCTION

There are many methods and measures in impacting knowledge to pupils but the obvious fact is that not all the methods favour all the pupils at same time because of individual differences. Jigsaw which is one of the cooperative learning techniques invented by a social psychologist Elliot Aronson in 1971 is the primary focus of this study. In cooperative learning, pupils work together in small groups on a structured activity. They are individually accountable for their work and the work of the group as a whole is also assessed. Cooperative groups work face-to-face and learn to work as a team. Cooperative learning is defined as pupils working together to attain group goals that cannot be obtained by working alone or competitively (Adams 2013). It is a process which requires knowledge to be discovered by learners and transformed into a concept to which the learner

can relate. Adhami and Amir (2014) posit that cooperative learning is a teaching strategy in which teams each with pupils of different levels of ability, use a variety of learning activities to improve their understanding of a subject.

By combining teamwork and individual accountability, pupils work toward acquiring both knowledge and social skills. It is a teaching strategy which allows pupils to work together in small groups with individuals of various talents, abilities, and backgrounds to accomplish a common goal. Each individual team member is responsible for learning the material and also for helping the other members of the team learn. Huang, Liao, and Chen (2014) described cooperative learning as one which enables learners to work collaboratively. They further maintained that one of the methods of cooperative learning is the jigsaw technique.

Pupils of an average sized class 26 to 33 pupils are divided into competency groups of four to six pupils to work

collaboratively on structured activity. 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 taking the role of a teacher for their sub-category. Oludipe (2012) opined that jigsaw technique is a cooperative learning method whereby the teacher breaks the pupils into different groups and assigns each group a particular topic to discuss amongst themselves and make preparations on such topics under the guidance of their group leader. Novianti (2013) also described the jigsaw technique as a learning model that consists of organizing pupils into small groups and giving every pupil in the group chance to apply their idea and explain the subject matter to other members of the group. For this study Jigsaw technique can be defined as a learning process where pupils are portioned into small groups to learn and prepare a part of assignment outside the classroom to teach other peer members.

The jigsaw strategy is a cooperative learning technique appropriate for all category of pupils. According to Gocer (2010), each pupil becomes both a learner and a teacher as well. The teacher is not the sole provider of knowledge because most of the work is done by the pupils themselves which makes it an efficient way to learn. Jigsaw technique is beneficial in teaching because learning revolves around interaction with peers, pupils are active participants in the learning process and thereby help to build interpersonal and interactive skills among pupils. The use of this technique also makes teachers find it easy to learn, enjoy working with it, it can be used in conjunction with other teaching strategies and it can be effective even if it is used for just an hour per day.

There can be some obstacles while using the jigsaw technique. One common problem is the dominant pupil. In order to reduce this problem, each jigsaw group has an appointed leader. Dominance is eventually reduced because pupils realize it is not in the best interest of the group. Another problem is a slow pupil in the group. It is important that each member presents the best possible report to the group, as it is important that individuals with poor study skills do not present inferior reports to their jigsaw group. In order to reduce this problem, the jigsaw technique relies on expert groups. This expert group is given a chance to discuss their reports and gather suggestions from other pupils to modify their reports as needed.

According to Adams (2013), jigsaw technique has its strongest effect when introduced in elementary school. If there is exposure to the jigsaw classroom at an early age, only an hour per day is needed to maintain the impact of cooperative learning in later schooling. If Jigsaw is first introduced in the later years of schooling, it can often be an uphill battle.

There are many methods, techniques, and strategies in impacting knowledge to pupils but not all the methods of teaching adequately promotes pupils’ understanding. Due to individual differences, teachers owe it as a duty to employ varieties of techniques in teaching and learning in order to reduce the problem of boredom and more importantly enhance pupils’ understanding of what is taught. It was observed that pupils hardly get the opportunity to do collaborative learning. They are therefore denied the golden opportunity of learning in groups and all its associated benefits.

Some of the pupils clearly demonstrated a lack of understanding of what was taught using traditional teaching method where the teacher most often does the talking. Pupils who do not get the opportunity to learn in groups tend to become antisocial and not able to achieve the needed knowledge of why they were sent to school. Therefore, the researchers undertake a study on the use of jigsaw technique as a way of promoting cooperative learning among primary school pupils in Awka South Local Government of Anambra State.

## RESEARCH QUESTIONS

- ✓ What are the principles involved in the use of jigsaw technique?
- ✓ What are the benefit of using jigsaw technique in teaching?
- ✓ What are the challenges involved in the use of jigsaw technique?
- ✓ What are the solutions to the challenges encountered in the use of jigsaw?

## II. METHODS

A descriptive survey design was adopted for the study. The target population used for the study include all the 604 primary school teachers in Awka South LGA. The sample size for the study was 200 teachers who were selected using simple random sampling. The instrument for the study was a 22 item questionnaire titled Jigsaw Technique as Effective Way of Promoting Co-operative Learning among primary six pupils in Awka South LGA (JTAEWPCCL). The questionnaire was validated by two experts in Early Childhood and Primary Education and one expert from Educational foundations, measurement and evaluation to be precise both in Nnamdi Azikiwe University, Awka. The reliability was determined using the Pearson Product Moment Correlation which yielded a coefficient of 0.80 which was considered high enough to be used for the study. A four-point scale rated Strongly Agree (4 points), Agree (3 points), Disagree (2 points) and Strongly Disagree (1 point) was used in research question 1, 2, 3 and 4. Mean values was used to answer the research questions. Mean scores of 2.50 and above were accepted while mean scores below 2.50 were rejected.

**RESEARCH QUESTION 1:** What are the Principles Involved in the Use of Jigsaw Technique?

s/n	Steps are :	X	Decision
1.	Positive interdependence (group effort)	2.80	Agreed
2.	Face-to-face interaction	3.00	Agreed
3.	Individual and group accountability	3.20	Agreed
4.	Interpersonal skills	3.00	Agreed
5.	Group processing	2.50	Agreed

*Table 1: Mean Scores of Teachers Response on the Principles Involved in the Use of Jigsaw Technique*

Data in table 1 above shows that items 1-6 has mean scores of 2.80, 3.00, 3.20, 3.00 and 2.50 respectively which indicates that all the items were accepted as principles involved in using jigsaw technique in teaching in the study area.

**RESEARCH QUESTION 2: What are the Benefits of Using Jigsaw Technique?**

s/n	Benefits :	X	Decision
1.	Pupils are more self-confident and like school better	3.80	Agreed
2.	Pupils take ownership of their work help to build inter-personal and interactive skills among pupils	2.78	Agreed
3.	Pupils are active participants in the learning process	3.00	Agreed
4.	improve academically	2.98	Agreed
5.		2.65	Agreed

*Table 1: Mean Scores of teachers Response on the Benefits of Using Jigsaw Technique*

Analysis in table 2 indicates that items 6, 7, 8, 9 and 10 has mean scores of 3.80, 2.78, 3.00, 2.98 and 2.65 respectively. This implies that the respondents agreed that all the items were accepted as benefits of using jigsaw techniques in teaching.

**RESEARCH QUESTION 3: What are the Challenges Encountered in the Use of Jigsaw Technique?**

s/n	Challenges encountered	X	Decision
11.	It is time-consuming.	2.80	Agreed
12.	Some bright pupils tend to dominate the discussion during the activities.	3.50	Agreed
13.	Limited source of information for pupils.	2.50	Agreed
14.	Because pupils have their groups, they will not have a cordial relationship with other pupils in that class.	2.45	Disagreed
15.	High number of pupils in the group can affect participation.	3.00	Agreed
16.	The nature of the time table does not allow enough time for pupils to do their presentation.	2.57	Agreed

*Table 1: Mean Score of Teachers Response on the Challenges Encountered in the Use of Jigsaw Technique*

Results in table 3 above shows that items 11, 12, 13, 15 and 16 which has mean scores of 2.80, 3.50, 2.50, 3.00 and 2.57 respectively were accepted as challenges encountered by teachers in the use of jigsaw technique while item 14 with a mean score of 2.45 was rejected.

**RESEARCH QUESTION 4: What are the Solutions to the Challenges Encountered in the Use of Jigsaw Technique?**

s/n	Solutions	X	Decision
16.	Each member in the group should be given enough time to contribute his or her idea	2.50	Agreed
17.	Teacher should be time conscious and creative	3.00	Agreed
18.	Each pupils should be allowed to operate at his or her own pace	2.88	Agreed
19.	Teacher must provide pupils with more source of information	2.57	Agreed
20.	All the pupils must be involved	3.20	Agreed
21.	Each member in the group should be given the opportunity to contribute during discussion.	3.50	Agreed
22.	Number in each group should be between four to six members in each group.	3.75	Agreed

*Table 1: Mean Scores of Teacher's Response on the Solutions to the Challenges Encountered in the Use of Jigsaw Technique*

Results from table 4 shows that all the items were accepted as the solutions to the problems encountered in the use of jigsaw technique

**III. DISCUSSION OF FINDINGS**

Findings from research question one indicate that positive interdependence, face-to-face interaction, individual and group

accountability, interpersonal skills, group processing are principles involved in the use of Jigsaw technique. These findings collaborate with the work of Adams (2013) and Kagan (2005), who posits that it is only under the certain condition that cooperative efforts may be expected to be more productive than competitive and individualistic efforts. These conditions are; positive interdependence (Sink or swim together). Each group member's efforts are required and indispensable for group success. Again each member has a unique contribution to make to the joint effort because of his or her resources and or role and task responsibilities. Face-to-face Interaction (Promote each other's success), this principle of cooperative learning is orally explaining how to solve problems, teaching one's knowledge to others, checking for understanding, discussing concepts being learned and connecting present with past learning is done during face-to-face interaction.

Another principle of cooperative learning is individual and group accountability and it is keeping the size of the group small. The smaller the size of the group, the greater the individual accountability may be. Again, given an individual test to each pupils, also, randomly examining students orally by calling on one pupil to present his or her groups work to the teacher (in the presence of the group) or the entire class. Observing each group and recording the frequency with which each member contributes to the group's work explains that the fourth principle of cooperative learning is the interpersonal and small-group skills. Social skills must be taught to promote leadership skills, making decision, trust-building, communication and conflict management skills. The last principle of cooperative learning is grouping processing. In this group, members discuss how well they are achieving their goals and maintaining effective working relationships, describe what members actions are helpful and not helpful and make decisions about what behaviors to continue or change.

Findings from research question two revealed that pupils are more self-confident and like school better, take ownership of their work, help to build inter-personal and interactive skills among pupils, pupils are active participants in the learning process and improve academically. The respondents greatly agreed to what the psychologist (Aronson, 2008) said concerning the benefits of jigsaw technique. According to him, learning revolves around interaction with peers and therefore pupils are active participant in the learning process and this helps build interpersonal and interactive skills. Jigsaw cooperative learning strategy improved achievement scores compared to the conventional teaching methods (Hanze & Berger, 2007). The results further confirm the assertion of Brat (2008) that Jigsaw cooperative learning strategy results in higher learners' achievement because they engage in challenging tasks in their expert groups with enthusiasm because they know they have to convey the information when they move back to their respective home groups. The Jigsaw cooperative learning strategy makes learning interesting. According to Baird and White (2010), jigsaw is highly interactive, pupils actively learn and it encourages responsibility in learning.

Findings from research question three shows the problems encountered by teachers in the use of jigsaw, that it is time-consuming, some bright students tend to dominate the

discussion during the activities, limited source of information for pupils among others. With these challenges, it implies that the use of jigsaw technique has not only benefits but it has some problems as well. This view given by the respondents on the challenges in using jigsaw technique agrees with that of Aronson (2008). According to him, the dominant student is an obstacle to a successful Jigsaw activity. To reduce this each jigsaw group is given an appointed leader.

Findings in research question four proffers solutions to the problems encountered by teachers in the use of jigsaw which include that each member in the group should be given enough time to contribute his or her idea and be allowed to operate at his or her own pace, all the pupils must be involved, each member in the group should be given the opportunity to contribute during discussion among others. This is in collaboration with the work of Adams (2013) who posits that obstacles in using jigsaw technique can be removed or reduced when the above suggestions are taken into consideration so that the use of the technique would be beneficial to both learners and teachers.

#### IV. CONCLUSION

The study revealed that jigsaw is a very useful technique. Through the use of the technique, pupils naturally developed the interest of working with their peers and through that, they learned from each other. They also cultivated good attitudes by learning social relationships with one another thereby increasing their chances in their learning environment for better academic performance.

#### V. RECOMMENDATIONS

- ✓ Primary school teachers should rather concentrate on teaching techniques or teaching methods like jigsaw technique which will enable pupils to properly understand the concepts taught in class.
- ✓ The Ministry of Education should organize seminars, conferences, and workshops at least bi- annually where teachers should be trained on the skills for effective implementation of jigsaw technique in schools.
- ✓ Teachers should appoint leaders for each jigsaw group to control dominance by bright students.

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