

## Grade 8 students' academic achievement in World History using jigsaw

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### Abstract

*This study assessed the academic achievement of twenty-five Grade 8 Diligence students at Banahao National High School in World History using the jigsaw method. Employing a mixed-method design, the study utilized pre-and post-assessments to evaluate students' academic performance before and after implementing the jigsaw. The Wilcoxon signed-rank test was applied to determine the significant differences in scores between the pre-and post-assessments. Results showed an increase in median values from 16 in the pre-assessment to 28 in the post-assessment. The results indicate the effectiveness of the intervention in improving the academic performance of the students. Also, the p-value is less than 0.05, showing that there is a significant difference in the class performance. A thematic analysis was also used to examine students' experiences with the jigsaw. Students' responses from the FGD show that the jigsaw has enhanced students' class performance. It encourages cooperation and participation, builds and develops students' interaction, and promotes fun and practical learning. Both findings indicated improved academic achievement, with most students attaining satisfactory scores in the post-assessment. Additionally, there was notable active participation during class discussions and positive feedback from students regarding their learning experience with the method.*

**Keywords:** jigsaw; World History; academic achievement; teaching strategy

### INTRODUCTION

Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university (Steinmayr et al., 2014). In addition, class performance, an integral aspect of the educational paradigm, reflects students' academic achievements and the intricate interplay of various factors that shape their learning experiences, encompassing grades, assessments, participation, and overall mastery of educational content.

Moreover, in line with the K-12 curriculum, every student should be able to analyze and interpret information and research, be communication savvy, and fulfill additional ethical standards to achieve the goal of the Social Studies curriculum. Pana and Escarlos (2017) stated that Social Studies has been noted as one of the important factors in



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Makabayan, serving as an interdisciplinary subject that lays the foundation for inculcating nationalism, patriotism, and responsible citizenry among students. However, [Mensah and Frimpong](#) (2020) found that despite these intentions, most students still perceive Social Studies classes, especially World History, as uninteresting, dull, and insignificant to their lives. Due to the highly oriented context of World History, it is taught comprehensively, a struggle among many Social Studies teachers on how and when to finish it. Learners' feedback proves to be an additional problem because they think this is uninteresting subject ([Ramos & Inocian](#), 2022). Likewise, [Obeidat et al.](#) (2011) found that the cause of students' reluctance to study history subject was that most history teachers in secondary schools with long experiences are still following the teacher's traditional role in which the teacher has the positive role as a sender and the student as a receiver.

Furthermore, [Mauricio et al.](#) (2017), cited that student still need to pay more attention to humanities and Social Studies-related subjects such as World History. They enumerated that the dependence on books, too much weight on memorization, and prior dislikes of students on the topic are the significant challenges of Social Studies teachers. He also added that the need to use different strategies and approaches should be performed. Likewise, [Pecson](#) (2015) found that students need help learning History as they often find the subject broad, tedious, and complicated to understand. Such reality is evident in the Pre-tests results of Grade 8 Diligence students in the first quarter which was only at 55% indicating the need for improved teaching strategy. Furthermore, observations also indicate that many students find World History unengaging. Significant number of them were not participating actively in the discussion. One notable reason for this is students find the discipline difficult to understand because they find it has no relevance to their lives. This could be attributed on how its contents are presented. Students mentioned that they find traditional lecture method boring and prefer interactive activities which affects their academic performance.

Consequently, a cooperative learning strategy is one of the methods for improving students' performance in class. It enables students to work with their peers socially and practice the skills required for development ([Dollard & Mahoney](#), 2010). Learning is said to be cooperative when students learn concepts or ideas through instructional group work, bringing students together to achieve a shared goal ([Johnson et al.](#), 2014; [Tran](#), 2014). Also, [Pusa](#) (2021) cited that Cooperative learning is helpful for students' learning process because it manifests teamwork, collaboration, and maximum participation. There are several cooperative learning strategies available in the literature, such as think-pair-share, thinking-aloud pair problem solving, the three-step interview, STAD (Student Teams Achievement Division), Jigsaw, TGT (Teams Games Tournaments) and GI (Group Investigation) cited by ([Jainal & Shahrill](#), 2021). From this list, the researchers utilized the jigsaw strategy to assess students' academic achievement in learning world history.

This method was chosen because this requires each student to become an "expert" on a piece of topic and ensures that everyone is engaged and accountable. Students taught using jigsaw not only retained and improved their academic performance than those in conventional classes but also felt a sense of empowerment regardless of their academic level ([Michael et al.](#), 2022). In addition, [Adams](#) (2013) points out, most teachers find jigsaws easy to learn because the teacher is not the sole provider of knowledge, which makes most teachers enjoy working with them. This method enables students to take ownership of their work and achievement, fostering a sense of responsibility. Learning becomes a dynamic process of interaction among peers, making students active participants in their own learning.

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The jigsaw strategy can be likened to a workplace where everyone has a role in achieving a common goal. It is a strategy that transforms students into experts and knowledge receivers. The learning experience is divided into stages or sections by the teacher, who then assigns sub-topics to individuals in a group. Students from various groups studying the same subject come together to discuss it between groups. Each group has been given a different subtopic to research (Chukwu & Arokoyu, 2019). The jigsaw strategy successfully minimizes students' reluctance to participate in classroom activities and creates an active learner-centered environment. Moreover, the strategy encourages the development of higher-order skills, including social skills, and fosters a culture of collaboration and teamwork among students.

With these observations, researchers aimed to improve Grade 8 Diligent students' academic performance using the jigsaw strategy. Specifically, this study sought answers to the following questions:

1. What is the level of academic achievement in learning World History before and after implementing the jigsaw strategy?
2. Is there a significant difference in students' academic achievement before and after the implementation of the jigsaw strategy in learning World History?
3. What are the students' learning experiences using the jigsaw learning strategy in World History?

## METHOD

This study has utilized a mixed-method research design. This type of method combines the elements of qualitative and quantitative data for the broad purposes of breadth and depth of understanding and corroboration (Johnson et al., 2007). Furthermore, this design helps to collect and analyze survey and FGD results to support the findings of the study.

## Respondents

The study's respondents were the Grade 8 Diligence students of Banahao National High School during the second quarter of the SY 2023-2024. The school is located at Barangay Banahao, Baybay City, Leyte. Twenty-five students, 13 males and 12 females, received the intervention.

## Data analysis

The researchers analyzed all the data collected from the respondents using different statistical tools. A thematic analysis of Collaizzi was used to analyze the qualitative data gathered through FGD. Researchers have independently identified themes without consulting the others and findings were discussed to solve any discrepancies. Codes were refined based on comparisons to address any inconsistencies. On the other hand, the quantitative data generated from the pre-and post-assessments were analyzed using Wilcoxon signed-rank test. It was used to compare the pre- and post-assessment scores to measure the significant difference in learning World History before and after the implementation of the strategy.

## Research intervention and procedure

According to Field (2006), to make History more interesting and meaningful, students must be involved in hands-on learning processes that promote personal growth and facilitate

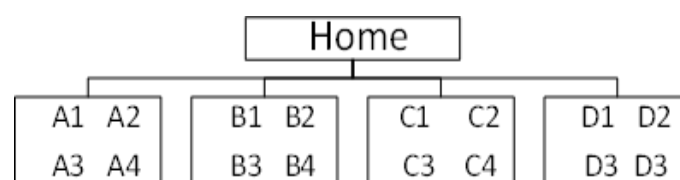
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understanding. In addition, Yapici (2016) found that cooperative learning using the jigsaw technique increases academic achievement in incredibly high-level perception, builds trust among students, and contributes positively to students' attention and attitudes towards lessons.

Among the various cooperative learning strategies, the researchers chose to implement the jigsaw technique to enhance the academic achievement of grade 8 students in World History. Developed by psychologist Elliot Aronson in the early 1970s, the jigsaw strategy is unique in its approach to breaking down complex topics into manageable chunks. It promotes critical thinking, the ability to draw connections between disparate pieces of information, and active engagement and shared responsibility among students.

Every student plays a vital role in the learning process, regardless of their academic background, making the strategy inclusive. The jigsaw is an effective and inclusive teaching technique, much like putting together a puzzle; each piece is essential for the overall picture. These students were divided equally into small, heterogeneous "home groups." Then, each student in a home group becomes an expert on a specific subtopic within a more prominent topic assigned to them by their leader. Then, these "expert" students in their respective subtopics come together to research, analyze, discuss, and deepen their understanding of the subtopic. After this, they return to their home groups to create a complete puzzle of understanding the topic through collaboration.

In the implantation of the 4A's lesson plan, the strategy was applied and conducted in the activity phase. Students must understand their piece and be able to teach it to others. The jigsaw strategy was appropriate since the topic was all about the world's ancient civilizations. Every week, one ancient civilization is discussed- its politics, religion, beliefs, culture, and economy. The researchers divided the class into four groups according to the sub-topics. They were paired to study one chunk of the lesson. There were instances when students were grouped unevenly, so the researchers decided that the group leader would be assigned to study one chunk of the lesson, and the time allotted for the strategy was 15 minutes. Five minutes to study the lesson independently in their home group and another 5 minutes to discuss the lesson assigned to them in their expert group. After the collaboration by each expert group, students return to their home groups, combining all discussions to make the final jigsaw. In this case, they had to discuss and combine four evaluative points from their discussion in their respective 'expert' groups to create their notes. The strategy was implemented throughout a month of teaching the grade 8 Diligence students of Banahao National High School. A post-test was administered after the last implementation of the strategy in which the students used the knowledge they had learned during the implementation of the jigsaw. Figures 1 and 2 below show the grouping procedure in implementing the intervention.



Note: For every variable, it stands for paired students (A1= 2 students).

Figure 1. The distribution of the students in the home groups where Jigsaw was applied

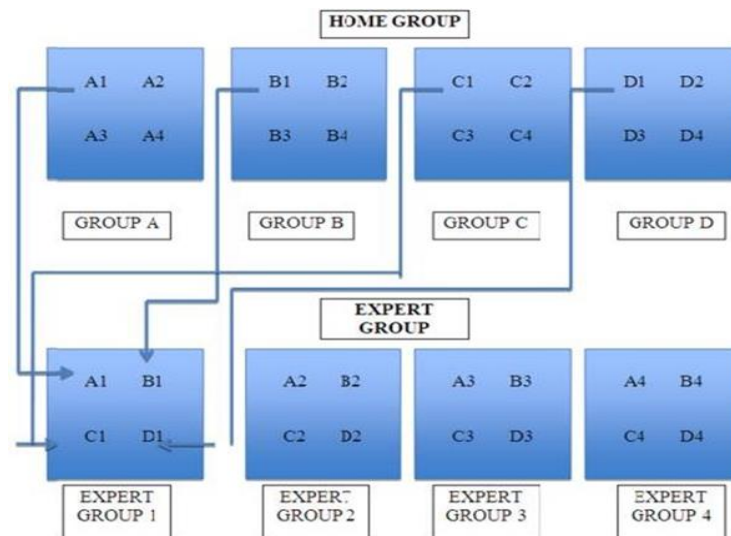


Figure 2. The distribution of the students from the home groups into the expert groups

## RESULTS AND DISCUSSION

### Students' academic achievement in World History before and after the implementation of jigsaw

Table 1. Level of students' academic achievement in learning World History

| Number of Students |                 | Score Interval       |
|--------------------|-----------------|----------------------|
| Pre-Assessment     | Post-Assessment |                      |
|                    | 5               | 40-33 (Outstanding)  |
| 3                  | 15              | 32-25 (Satisfactory) |
| 8                  | 5               | 24-17 (Average)      |
| 14                 |                 | 16-9 (Low)           |
|                    |                 | 8-0 (Poor)           |

Before implementing the jigsaw, 56% of the total population, consisting of 14 students, obtained scores below the average level. In addition, 32%, or eight students, got average scores, and 12%, or three students, obtained satisfactory scores. This result implies that students' level of academic achievement was low.

However, after implementing the jigsaw strategy, there was a positive shift. Sixty percent, or 15 students, obtained scores at a satisfactory level. At the same time, five students' scores belonged to the outstanding group, and the other five obtained average scores. Importantly, no student obtained scores below average. Thus, the results imply a significant increase in students' academic achievement, in line with the study by Michael et al. (2022), which found that students taught using jigsaw cooperative learning strategies retain and improve academic performance and knowledge more than those in conventional classes.

Table 2. Wilcoxon Signed Rank Test on the statistical difference before and after the implementation of jigsaw strategy

|                 | n  | Median | SD    | Md | Wilcoxon<br>z | P-value |
|-----------------|----|--------|-------|----|---------------|---------|
| Pre-assessment  | 25 | 16     | 5.572 | 12 | -4.378        | <.001   |
| Post-assessment | 25 | 28     | 5.642 |    |               |         |

Table 2 reveals the significant difference in the class performance of Grade 8 students in World History before and after implementing the jigsaw. This was reflected in the increase of the median values of the two variables, which ranged from 16 in the pre-assessment to 28 in the post-assessment. The increase in median values and difference serves as a quantitative indicator of the effectiveness of the intervention. Also, the p-value is less than 0.05, showing a significant difference in the class performance of the grade 8 students in favor of the post-assessment scores. This implies that the jigsaw strategy enhanced the academic achievement of grade 8 students at Banahao National High School.

### Students' experiences using Jigsaw strategy in World History

The qualitative data was gathered from the students' responses to the focus group discussion on their experiences implementing Jigsaw. Table 3 shows students' raw responses, including codes and themes that emerged therein.

Table 3. Grade 8 Student's active learning in World History using jigsaw

| Theme               | Code                  | Initial Code/Illustrative responses  |
|---------------------|-----------------------|--|
| Active Learning     | Cultivating knowledge | "Jigsaw learning strategy is effective because it helps us to learn the lesson through this activity. We gained new information from our home group, and it was explained in our expert group. So, we understand the lesson from our expert group and go back to our home group and discuss it there." - G8 – SM5  |
|                     |                       | "I can say that jigsaw is all about groups and sharing each other's insights about the lesson in araling panlipunan. Through sharing our understanding, making our other classmates know the topic and thus everybody in the group will pass the quiz after." - G8 – SF4   |
|                     |                       | "Epektibo ang jigsaw dahil nakaka-share ng idea ang bawat-isa sa grupo" (Jigsaw was effective because everyone can share ideas) - G8- SF6  |
|                     |                       | "Yes, nindot ang jigsaw strategy kay daghan kong na learn sa pagbalhin nako og laing grupo. Nakamao ko sa ilang mga nasabtan og mas nakasabot ko sa among topic tungod sa pagtinabangay. Lingaw siya kontra sa kanang si teacher ra permi magstorya, magdiscuss sa atubangan." (Yes, the jigsaw strategy was great because I learned so much when I transferred groups." I was able to understand more of the topic by working with my other classmates. It was more enjoyable than the traditional method of instruction in which our teacher usually spoke and discussed in front of the class) - G8 – SM4 |
| Engaging discussion | Engaging discussion   | "Wala na ko maglisod og sabot sa mga sinaunang kabihasnan og dagko na ko og score sa mga exam" (I didn't have a hard time understanding the topic about ancient civilizations and I scored well during quizzes) - G8 – SM11  |
|                     |                       | "Masaya ang jigsaw group dahil maglipat-lipat kami ng grupo upang maibahagi ang aming natutuhan tungkol sa aming gawain" (Jigsaw group was fun because we moved from our home to jigsaw group sharing and collaborating on what we have learned about the topic) - G8 – SM6  |



*"Jigsaw Learning Strategy is fun and exciting at the same time, kay magbalbalhin mi og grupo. Mo adto mi sa amo homegroup then expert group, maka agaw gyud siya sa amo attention og makawala sa kalaay. At the same time naa mi nakat onan."* (Jigsaw learning strategy was fun and exciting at the same time because of switching groups. Through transferring from home to a jigsaw group, it really grabbed our attention and got rid of boredom. At the same time, we learned more about the topic) - G8 – SF5

*"Yes, jigsaw was interactive because I learned to explain the assigned chunks of the topic to my other classmates and present them in front."* - G8 – SM4

*"Yes, interactive ang jigsaw kay murag naa mi physical activities, magbalhin-balhin og grupo (mo adto sa home group, then sa expert group and mo balik na sad sa home group) Dili na boring ang AP subject"* (Yes, jigsaw was interactive since it feels like we're engaging in physical activities when we go from the home group to the expert group and back again. After that, AP subject was no longer dull) - G8 – SF5

*"Yes, I find jigsaw strategy interactive. It is because I can see that my classmates participated and were active during our time in Kasaysayan ng Daigdig. Also, I learned that the jigsaw strategy was helping the students in our classroom."* - G8 – SF4

*"Yes, jigsaw is interactive kay mapa lawn ang amo understanding about sa topic tungod sa gi share sa amo mga ka grupo. Og makatangal sad sa ka laay kay makapabor mi og tinggog and ma share ang amo opinion, like nag brainsorming mi."* (Yes, jigsaw was interactive as each group's cooperation and sharing allowed us to gain a deeper comprehension of the subject. Furthermore, because we have the opportunity to converse and express our opinions, it eliminates boredom) - G8 – SM 5

**Increased confidence level**

*"Oo, kay tungod sa jigsaw di na ko mauwaw sa akong teacher ug classmates inig mangutana ko about sa topic"* (Yes, I'm not hesitant to ask my teacher and classmates questions about the subject because of the jigsaw) - G8 – SM6

*"Oo may pagbabago sapagkat hindi na sila nahihiya tuwing reporting at pagbabahagi ng kanilang nalalaman ng walang pag-aalinlangan."* (My classmates' behavior changed, such that they were no longer intimidated to report and freely shared what they knew) - G8 – SM7

*"Yes, jigsaw helps improve my performance in our class. Because it helps me build my confidence within myself and help me face my fears talking in front of my classmates"* -G8 – SF10

**Shared Responsibility**

*"Yes ma'am, na responsible na ang ako mga ka grupo kay naa man silay assigned nga sub-topic og need nila buhaton og ma share sa amo grupo."* (Now that they have a designated

subtopic to complete and share with the group, my group members are responsible) - G8 – SF8

*"Yes, naay kabag-uhan sa kinaiya og lihok sa akong mga klasmet basta oras na sa araling panlipunan. Dili man permanente kay usahay akong mga kagrupo mo tabang, usahay kay magpabadlong ra pero kung ting report na mo report man sad sila."* (During the Araling Panlipunan period, there was a shift in my classmates' attitudes and behaviors. They frequently declined to lend a hand, thus their progress was not continuous, although they did appear throughout reporting) - G8 – SF7

*"Di na pud ko ganahan mu-absent tungod aning jigsaw kay naa man koy part sa amo grupo unya kung mu-absent ko maapektuhan ang performance sa ako mga ka-grupo"* (I want to stop skipping lessons because of jigsaw. My absence will have an impact on the performance and thoroughness of our topic's thought process because we each have roles or responsibilities in our group) - G8 – SM12

#### Cooperation

*"Oo, mayroong kaunting nabago sa aking mga kaklase dahil nakikinig na sila sa klase at nakikipagtulungan na sa mga activity sa Araling panlipunan."* (My classmates' behavior had somewhat changed since they were participating in the activities and paying attention in class) - G8 – SF9

*"Oo, kay ang uban nako na classmate kay mutabang na sila sa grupo inig answer or inig naay activity."* (During group tasks, several of my students lend a hand by contributing ideas and answers) - G8 – SM9

According to the students' feedback, they consistently underscored the effectiveness of jigsaw learning. This method enhanced their understanding of the lesson, improved group dynamics, encouraged active discussion, boosted their confidence, and fostered a sense of shared responsibility and cooperation. The jigsaw was enjoyable for them since it allowed them to exchange and discuss ideas with their classmates. They also enhanced each other's learning by working together, which makes learning more engaging and less boring, removing the barrier of world history being characterized as such. The result is supported by [Drouet et al. \(2023\)](#) in their systematic review and meta-analysis titled "Effects of the Jigsaw method on student educational outcomes". They analyzed 69 studies on the impact of the Jigsaw method on various educational outcomes. The findings indicate that the method generally enhances students' academic performance and motivation. Additionally, the method fosters better social relations among students, promoting a more inclusive and cooperative classroom environment.

Movement between groups makes the learning process more enjoyable. Some students acknowledged their enthusiasm for the jigsaw by noting how it boosted their confidence. This result parallels the previous study of [Tran and Lewis \(2012\)](#), which states that the students will be more understanding and independent, studying much more confidently. They were more comfortable sharing their knowledge with their peers and reporting it to the class. It encouraged them to overcome inhibitions, making it more straightforward for them to interact with both professors and peers. Students become integral to the learning process, feeling essential and provided with opportunities. The



jigsaw method facilitated group formation and assignments, enabling students to practice learning and teaching with peers throughout the class. Consequently, students became more motivated as they acquired new and enhanced knowledge from each other. Positive perceptions of this strategy fostered a sense of group identity and created a supportive learning environment.

## CONCLUSION

The study showed that the jigsaw, as one of the cooperative learning strategies, enhances the academic achievement of the grade 8 students in World History. Implementing the strategy in the classroom enhanced students' performance, as reflected by their active participation, discussion engagement, and increased assessment scores. Additionally, it boosts the student's confidence in presenting their ideas, asking questions of each other, and collaboration. The students in this study were eager to learn using jigsaw since it gave them a different way of learning, making it interactive and keeping them interested in class.

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## AUTHOR CONTRIBUTION

Author 1: Conceptualization and Methodology. Author 2: Quantitative Analysis. Author 3: Thematic Analysis. Author 4: Review and Supervision.

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