

Original Article

The Significance of Applying a Jigsaw Cooperative Learning Approach for Imparting Creativity for the Framework of the Rock Cycle Lesson Plan

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Manuscript ID:
IBMIIRJ-2025-021019**Submitted:** 08 Sept. 2025**Revised:** 12 Sept. 2025**Accepted:** 10 Oct. 2025**Published:** 31 Oct. 2025**ISSN:** 3065-7857

Volume-2

Issue-10

Pp. 88-91

October 2025

Abstract

Cooperative learning techniques like the jigsaw method are commended for improving student participation, engagement, and inclusivity, all of which lead to improved academic achievement. Cooperative learning is a model that encourages cooperation and self-esteem among students to achieve learning goals. It involves small, collaborative groups of four to six people, with a heterogeneous structure. The methodology uses various activities to enhance students' understanding of a subject. Good environmental and student input lead to better learning outcomes. Jigsaw is a cooperative learning strategy that encourages deepening learning material through home group methods. The Jigsaw cooperative learning model consists of origin and expert groups, with the origin group comprising learners with diverse abilities and backgrounds, and expert groups involving members from different origin groups. Thematic unit explores earth's structure, incorporating reading, writing, and home work experiences. Activities promote basic skills, critical thinking, and cooperative learning.

Keywords: Jigsaw Method, Cooperative Learning, Collaborative groups, Expert groups, Thematic unit, Critical thinking.

Introduction

An interactive group activity is called a "jigsaw" activity in the educational context. Geography is a science that explains the relationships between life and the earth, focusing on the Earth's surface, its relationship to the Sun, its surrounding atmosphere, and the distribution of plants, animals, and minerals. It offers opportunities for judgment, generalization, inference, and comparison. Climate is a crucial aspect of our surroundings, and geography is a prominent branch of education that focuses on visible and familiar objects. Geography encompasses the gradual development of topographic forms, their impact on life, and the effects of temperature and moisture. It integrates principles of descriptive Geography, Physiographic, and Economics. In addition to analyzing student and staff opinions, the study presents a cooperative learning approach based on jigsaws for millennial students with the goal of promoting critical thinking, effective communication, and good attitudes toward learning. Jigsaw-style cooperative learning makes learning easier by facilitating student-to-student discussion and enhancing teaching and communication abilities. The Jigsaw approach is a cooperative learning strategy that encourages students to work together, learn deeply, and develop collective competency, creating an improved environment in healthy learning environment. According to Zaduqisti (2014), the learning model can increase student engagement, which makes learning more worthwhile, significant, and capable of enhancing students' learning competencies. Student learning outcomes, which are typically represented by grades, are a good indicator of a successful education. The skill and accuracy of teachers in selecting and implementing instructional strategies have a significant impact on the caliber and effectiveness of student learning. Because the teacher learning approach reduces student engagement in learning activities, the teacher learning model is starting to be abandoned in favor of a more contemporary one. Jigsaw is a cooperative learning strategy that encourages active learning and helps master learning material. It is also known as cooperative by experts, as each group faces different problems but the same topics. The generalities of geography, including earth's form, motions, latitude and longitude relations, relief, climate, and life, are crucial for practical thinking.

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How to cite this article:

Pathade, U. A. (2025). The Significance of Applying a Jigsaw Cooperative Learning Approach for Imparting Creativity for the Framework of the Rock Cycle Lesson Plan. *InSight Bulletin: A Multidisciplinary Interlink International Research Journal*, 2(10), 88-91.
<https://doi.org/10.5281/zenodo.17620997>



Quick Response Code:

Web. <https://ibrj.us>DOI: [10.5281/zenodo.17620997](https://doi.org/10.5281/zenodo.17620997)

DOI Link:

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The school curriculum consists of five geographic subjects: Elementary Geography, Physical Geography, Physiography, Meteorology, and Geology. Elementary Geography covers the earth and its inhabitants in primary, intermediate, and lower grammar grades. Physical Geography focuses on earth's physical features, atmosphere, and ocean, while Physiography focuses on our physical environment. Geology explores the structure and historical context of the earth, while meteorology deals with atmospheric phenomena. The study aims to enhance observational power through geographical research. This article provides an overview of Jigsaw cooperative learning ideas on the Rock Cycle.

Hypotheses

Geography is a discipline gaining much importance not only in the discipline itself but also in multi discipline point of view. It interrelates many branches which are either directly or indirectly related to the socio-economic activities of a common man. Geographers are very much concerned about the space and dealing with a space, which is not an easy task because, the different geographical space have different characteristics and is not unique.

Objectives

1. To Know the meaning of Jigsaw Learning
2. To understand geographical activities.
3. To comprehend geography collaborative learning strategies
4. To Explore the Geographic Context and Jigsaw Methods
5. Avails Rock sample techniques developed using a jigsaw lesson plan

Methodology

This study emphasizes the significance of both primary and secondary data in the systematic development of lesson plans. It explores the implementation of diverse teaching techniques and the integration of relevant literature, highlighting their roles in educational planning and instruction.

Literature Review

- a. Alan Crawford's (2005), book on 'Teaching and Learning Strategies for the Thinking Classroom Annotation', provides a practical guide to teaching strategies that encourage critical thinking and reading and writing. It provides core lessons, assessment ideas, lesson planning, and classroom management techniques, and can be used across the curriculum, from primary to secondary schools.
- b. The book "Teaching Geography" by Phil Gersmehl (2005) offers a thorough foundation for efficient teaching in middle and secondary schools. It emphasizes learning about land, climate, economy, and culture while improving spatial thinking abilities. The book is a perfect pre-service or in-service resource because it contains 100 interesting exercises, standards-based curriculum materials, and assessments.
- c. Ernest T. Stringer's (2009) book "Integrating Teaching and Action Research" discusses the application of action research in teaching and learning from elementary to high school. It offers lesson plans and examples, guiding teachers in planning, instruction, assessment, and evaluation while accommodating diverse student abilities and learning activities.
- d. Roberta Sejnost's book, 'Tools for Teaching in the Box,' provides research-based strategies aimed at helping teachers move from feelings of apprehension to confidence within a 90-minute block school setting.

Description of Study

Observational geography should precede other forms of geographical study to develop the power and habit of geographic observation, give pupils true and vivid ideas, and arouse a thirst for geographical knowledge. It should begin with observation of nearest features, such as natural and artificial features, and focus on surface changes like winds, rain, and thawing. Repertoire geography, such as descriptions, sketches, maps, and models, should be used to create productive ability and advance mental power. This helps students understand various modes of expression and read maps easily, which is the basis of sound geographical progress.

Jigsaw Strategy: Topic or Unit of Study: Earth / Interior of Earth/ Formation of Rocks

1) Instructional Setting

- A standard classroom setting will be used to teach this, with roughly 30 participants in each lesson.
- Explain the physical location of the earth's interior and crust
- Outlining the introduction of various rocks and minerals, including their types, sizes, shapes, and other characteristics.
- Identifying the physical and rock formation of specific locations; describing the physical background and features of rocks; and outlining the impacts of Earth systems, including the hydrosphere, lithosphere, and atmosphere

2) Lesson Goals

- Give students the freedom to express themselves as teachers; foster a sense of personal accountability in them; and allow them to collaborate on focused lessons.
- Help student become proficient in identifying five of the twenty distinct mineral types by developing their capacity to recognize them.
- Encourage the participation of students, use, and interest in the lab portion.

3) Lesson Objectives

- Students will be able to describe the origin and creation of rocks with 90% correctness after finishing the Jigsaw exercise. The student will classify rocks and minerals, perform research, and apply relevant technology to develop an understanding of their composition and applications.

4) Content

- Weathering, erosion, metamorphic rock, sedimentary rock, and igneous rock

5) Material

A science journal, five labeled rock samples, trays, and a hand lens. The only physical items needed are samples of 20 different minerals, enough for the number of groups in the lab part.

6) Teaching Notes and Tips

Students should be divided into groups at random and then placed in specific "expert" groups. Give each part of the activity a specific time limit. Make use of pupils who complete a section ahead of schedule by assigning them to assist students who are falling behind.

Introduction

This activity involves students using hand lenses to observe five rock samples in a geology laboratory section. The Jigsaw Strategy is used to encourage cooperative learning, promoting listening, engagement, and empathy. The activity focuses on identifying minerals and promoting teamwork among students. The "cooperation by design" approach fosters interaction and value among students, ensuring they all contribute to the common task of content learning.

▪ Development

Today, students will learn about three types of rocks: igneous, sedimentary, and metamorphic. Igneous rocks form when melted rock hardens, sedimentary rocks form from sediment at stream bottoms, and metamorphic rocks form from heat and pressure.

▪ Practice

Encourage students to organize lesson concepts using a graphic organizer on rocks, while modeling it using the Elmo.

▪ Accommodations

Students will collaborate in cooperative groups to categorize rock samples.

▪ Checking for understanding

Students are required to create a graphic organizer using rocks and attach them to their science journals.

▪ Closure

In today's lesson, students are asked to understand rocks, their classification, and the formation processes of igneous, sedimentary, and metamorphic rocks.

▪ Evolution

The teacher will gather journals and verify the accuracy of the graphic organizers.

Jigsaw Steps

Step 1: Divide the class into teams of three to five people.

Step 2: Divide team assignments into two to five, providing diverse readings, Data sets, samples, maps, and problems, and discussing various issues related to rocks types and field sides.

Step 3: Each team is assigned a different task in a small class.

Activity: 1 - Mentally Warm-up

Educationalists promote 'mental warm-ups' and kinaesthetic activity as starter activities. Research confirms that a 'warmed-up' brain leads to more effective learning. These exercises, especially for students with special needs, are valuable. Using a variety of learning styles helps students learn effectively. Geography provides context for creating starter activities, allowing teachers to access students' full range of learning strengths.

Activity-2 - Tools for Learning

Geography teachers prioritize visual stimulus in their learning, using various tools like photographs, diagrams, sketches, films, videos, cartoons, and maps. These starter activities engage students and draw them into the learning program, often being fun. These activities allow geographers to experiment with a more diverse range of learning methods.

Geography and Jigsaw Techniques in Context

Geographic studies help develop observational power by exploring surface forms, interactions with temperature, atmospheric movements, plant life, and human activities. They also involve the culture of imagination by visualizing geographical features like river basins, relief systems, and ocean bottoms. Geographic studies also provide material for reasoning powers by discussing features like wind, clouds, temperature changes, and city location, aiming to increase mental power and mastery.

Findings

The context of geography refers to the study of the physical, human, and environmental aspects of a particular area or region. The jigsaw cooperative learning approach is significant in enhancing creativity within the framework of a rock cycle lesson plan. This method fosters collaboration and active engagement among students, allowing them to explore different aspects of the rock cycle while promoting creativity through shared knowledge and collective problem-solving.

Conclusion

Cooperative learning fosters positive interaction among children in small groups, promoting motivation, and group skills, social and academic interaction. It is cost-effective, easy to implement, and improves student behavior. Teachers should focus on creating a classroom climate conducive to cooperation and mutual respect through short, high-interest activities. Collaborative learning is a crucial classroom practice in geography, utilizing student talk and small group work to encourage active participation and exploration of ideas. This approach is beneficial in all aspects of geography, including physical, human, and environmental aspects. Students are often more willing to contribute in smaller groups, making it easier for teachers to initiate discussions. By working on separate tasks or shared tasks, students can explore geographical data, reach common conclusions, and make judgments. This approach often leads to more effective problem-solving and evaluation of different ideas. Cooperative learning is an interactive method that encourages student group involvement and a positive classroom environment. It can be

applied to teaching geography, as it increases student motivation and knowledge. A variety of cooperative learning lessons can effectively increase students' engagement and knowledge in the subject.

Acknowledgment

The author expresses sincere gratitude to the Management and Principal of MVP's K.K.W. Arts, Science and Commerce College, Pimpalgaon Baswant, Tal. Niphad, Dist. Nashik (M.S.), for their continuous encouragement, institutional support, and motivation throughout the preparation of this research paper.

Heartfelt thanks are extended to the Department of Geography for providing a supportive academic environment, valuable suggestions, and constructive feedback that enriched the study.

The author also acknowledges the contributions of colleagues, students, and research peers whose active participation, classroom engagement, and valuable insights helped in developing the practical framework of the Jigsaw Cooperative Learning approach. Special appreciation is due to educational researchers and authors whose scholarly works on cooperative and geography-based learning methods inspired the conceptual foundation of this paper.

Finally, the author conveys deep gratitude to family members and well-wishers for their constant moral support, patience, and encouragement during the research and writing process.

Financial Support and Sponsorship

Nil

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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