PERSPECTIVE

Augmenting the effectiveness of jigsaw method by overcoming potential challenges

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ABSTRACT

The jigsaw method is a teaching-learning approach to promote collaborative learning among medical students. In this method, students are encouraged to take responsibility for their learning and contribute to the group's collective knowledge. Apart from problem-solving and critical thinking skills, this method is also useful in improving communication skills, teamwork, and leadership skills, all of which are crucial to be a successful healthcare professional. The jigsaw method has been linked with a wide range of benefits for medical students, especially with regard to improving their comprehension, problem-solving abilities, and critical thinking. The success of the jigsaw method in the attainment of educational outcomes depends on identifying the potential challenges and measures employed to overcome them. All these identified challenges can be potentially handled by training teachers in conducting such sessions, informing students well in advance, and promoting better group dynamics. However, to optimize the benefits to medical students, there is an indispensable need to invest in training teachers and improving group dynamics.

KEYWORDS

Jigsaw Method, Group Dynamics, Medical Education

INTRODUCTION

The jigsaw method is a teaching-learning approach to promote collaborative learning among medical students, wherein through group work teachers foster active engagement, peer teaching, and critical thinking (1). As students work together towards the attainment of shared learning goals, they interact with peers, exchange knowledge, apply knowledge in clinical practice for problem-solving, and subsequently even reflect on their experiences (1,2). In this method, students are encouraged to take responsibility for their learning and contribute to the group's collective knowledge (1). Apart from problem-solving and critical thinking skills, this method is also useful in improving communication skills, teamwork, and leadership skills, all of which are crucial to be a successful healthcare professional (1-3).

Implementation of the jigsaw method

In this method, students are divided into small groups of 4-6 members each, with each member assigned a different part of the topic to study (4). This is followed by the creation of an expert group, wherein students assigned the same sub-topic come together, share their insights, clarify doubts, and enhance their understanding for a fixed period of time (4,5). After this, students return to their original group, and each one of them teaches their

sub-topic to the group so that everyone can completely understand the whole topic (4). The teacher monitors group dynamics throughout and ensures that equal participation happens, and intervenes to guide discussion or clear confusions (4,6). At the end of the activity, groups present their findings to the complete class, followed by discussions to reinforce key learning points. Teachers are also expected to provide feedback to students individually as well as in groups regarding their participation and performances (4). Further, even assessments can be carried out to measure the extent of learning and measures should also be taken to ascertain the attainment of learning outcomes (4-6).

Identified challenges and Potential solutions

The success of the jigsaw method in the attainment of educational outcomes depends on identifying the potential challenges and measures employed to overcome them (Table 1). One of the primary concerns is about the suitability of the method in all subjects or topics, and we must realize that not all topics can be divided into sub-topics (in other words, suitable for jigsaw learning) (5). This calls for the need that the curriculum committee and subject experts must meet and finalize those topics that are suitable for cooperative learning. From the students' perspective, the concerns include unequal participation (few students dominate while others contribute less to the discussion), and varying levels of preparedness which can be either due to the quality of the students as a whole or their familiarity with the learning resource materials shared (2,4). At the same time, this form of teaching can prove to be either time-consuming (if time limits for expert discussion and group discussion are not defined) or resource-intensive (if teachers fail to use the existing resource materials within the curriculum) (5,6).

From the teachers' side, their competence levels in conducting and facilitating such sessions plays a crucial role in the success of the method (4). The effectiveness of session depends a lot on the group dynamics, as any kind of conflict or lack of cooperation between group members can significantly impact the learning process (7,8). On a similar note, if the students in the expert group fail to engage with the learning resources, it will result in a direct impact on the quality of information that is subsequently shared with the original group (2,5,6). This calls for the need to encourage students to actively engage and there also lies the importance of the role of the teacher in addressing any potential concerns in the group (9). All these identified challenges can be potentially handled by training teachers in conducting such sessions, informing students well in advance, and promoting better group dynamics, as detailed in Table 1 (2,3,5-9).

Table 1: Identified challenges and potential solutions

Identified challenges	Potential solutions
Unequal participation	The roles assigned to each member of the group should be changed in every jigsaw session Explain to all students about what is expected of them and that every member must participate Teachers can monitor the discussion and subsequently provide feedback to students for both individual and group participation Introduce peer assessments to hold each student accountable for their involvement
Time consuming	Share learning resources in advance to expedite the process Pre-define time limits for each phase of the process (viz. expert group discussions, group teaching, etc.) Use technology (like Google docs for collaborative working) for expediting the discussion
Difficulties in assessment	Employ individual assessments (like quiz) to measure the extent of understanding Formulate rubrics to measure both individual contributions and overall group performance Use a combination of peer and self-assessment to make assessment process comprehensive
Varying levels of student preparedness	Share learning resources in advance to ensure everyone has a basic understanding Create groups with students of different abilities so that stronger students can help less-prepared ones

Identified challenges	Potential solutions
	Teachers can monitor discussions and extend support to students who struggle with the learning resources
Poor group dynamics	Start with team-building activities to improve bonding before the jigsaw session
	Designate roles like “mediator” or “timekeeper” to manage group dynamics effectively
	Teacher can observe group interactions and intervene early to resolve any conflicts
Poor effectiveness of the expert group	Share structured templates for expert groups to ensure deep engagement with the material
	Teachers can monitor and guide students to ensure key aspects are covered
Concerns with facilitator role	Organize training sessions to empower teachers to conduct jigsaw sessions effectively
	Frame rubrics to help teachers assess group dynamics and performance
Resource intensive	Encourage use of digital resources (viz. online articles, videos) to reduce the need for physical materials
	Incorporate content from textbooks or already available curriculum resources to save time and effort
Relevance in all subjects	Curriculum committee and Subject experts should carefully select the topics that require collaborative learning
	Combine jigsaw with other learning techniques like problem-based learning when topics are too complex for simple division

Conclusion

In conclusion, the jigsaw method has been linked with a wide range of benefits for medical students, especially with regard to improving their comprehension, problem-solving abilities, and critical thinking. However, to optimize the benefits to medical students, there is an indispensable need to invest in training teachers and improving group dynamics.

Authors Contribution

All authors have contributed equally.

Conflict of Interest

There are no conflicts of interest.

Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven’t used any generative AI/AI assisted technologies in the writing process.

References

1. Jeppu AK, Kumar KA, Sethi A. 'We work together as a group': implications of jigsaw cooperative learning. BMC Med Educ. 2023;23(1):734.
2. Oakes DJ, Hegedus EM, Ollerenshaw SL, Drury H, Ritchie HE. Using the jigsaw method to teach abdominal anatomy. Anat Sci Educ. 2019;12(3):272-83.
3. Kaur M, Mahajan R. Inculcating critical thinking skills in medical students: Ways and means. Int J Appl Basic Med Res. 2023;13(2):57-8.
4. Chopra D, Kwatra G, Bhandari B, Sidhu JK, Rai J, Tripathi CD. Jigsaw classroom: Perceptions of students and teachers. Med Sci Educ. 2023;33(4):853-9.
5. Goolsarran N, Hamo CE, Lu WH. Using the jigsaw technique to teach patient safety. Med Educ Online. 2020;25(1):1710325.
6. Ozkan S, Uslusoy ECN. Outcomes of jigsaw technique in nurse education: A systematic review and meta-analysis. Nurse Educ Pract. 2024;75:103902.
7. Premo J, Wyatt BN, Horn M, Wilson-Ashworth H. Which group dynamics matter: Social predictors of student achievement in team-based undergraduate science classrooms. CBE Life Sci Educ. 2022;21(3):ar51.
8. Launer J. Collaborative learning groups. Postgrad Med J. 2015;91(1078):473-4.
9. Kassab SE, Taylor D, Hamdy H. Student engagement in health professions education: AMEE Guide No. 152. Med Teach. 2023;45(9):949-65.