



Application of the Jigsaw Technique to Enhance Student Motivation and Engagement in Vocabulary Learning

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ABSTRACT

Traditional methods such as rote memorization and one-way instruction lead to low interest and limited interaction. The community service program introduced the cooperative jigsaw method, where students worked in small groups, took responsibility for vocabulary learning, and taught peers collaboratively. This program aimed to enhance student motivation and engagement in English vocabulary learning through the jigsaw technique at a primary school in Pranti Village, Sedati, Sidoarjo. Using observation checklists, questionnaires, and classroom documentation, the study found that students were attentive, participative, focused, and confident, showing initiative and effective interaction with peers and media. Questionnaire results confirmed increased motivation, enjoyment of responsibility, reduced stress, and higher confidence when learning collaboratively. Key supporting factors included engaging media, peer collaboration, student autonomy, and the teacher's role as facilitator, aligning with Self-Determination Theory. In conclusion, the jigsaw technique effectively improved both motivation and engagement in vocabulary learning, offering a dynamic, student-centered approach that fosters meaningful and enjoyable language learning for young learners.

Keywords: Jigsaw technique; Student motivation; Student engagement; Vocabulary learning

INTRODUCTION

In the modern educational setting, learning approaches are increasingly shifting towards constructivism, which emphasizes Student-Centered Learning (SCL). Since the emergence of constructivist approaches, SCL has become popular because it gives students a greater role in the learning process. In this approach, teachers act as facilitators, guiding students to explore and develop their own understanding, and to form knowledge concepts based on their learning experiences. Thus, learning becomes more interactive and tailored to the needs of each student.

A preliminary observation conducted at a primary school located in Pranti Village, Sedati District, Sidoarjo Regency (school name is disguised as MI IU), revealed that English vocabulary learning by students at that school was still limited to traditional teaching methods. These methods often focused on memorizing and repetitive drilling which, although effective for some students, did not actively engage all students and did not always support various learning styles. As a result, student motivation and engagement in learning English vocabulary remained low.

This condition poses a challenge for educators in creating a more engaging and effective learning environment. Low student motivation and engagement in vocabulary acquisition can lead to suboptimal learning outcomes. Therefore, an alternative strategy is needed that is more interactive and actively involves students in the learning process. One such strategy that can be applied is the jigsaw technique, which is part of the cooperative learning model. This technique allows students to

learn in small groups, share information, and develop understanding collaboratively. Thus, the jigsaw technique can be a potential solution to increase student motivation and engagement in English vocabulary learning.

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As the partner of this community service program, MI IU faces several real problems in English language learning, especially in student vocabulary acquisition. Some identified problems include: (1) Conventional teaching methods in which the English teacher still frequently use lecture and memorization drill methods that are less engaging for students, (2) Lack of interactive learning media in which insufficient use of engaging media such as flashcards, educational games, or digital technology that can help students understand vocabulary more effectively, (3) Absence of cooperative learning implementation in which students rarely get opportunities to work in groups or learn collaboratively, making learning less dynamic, (4) Low student motivation in which many students are less enthusiastic about learning English vocabulary because they find the teaching methods monotonous and boring, and (5) Low student engagement in which one-way learning activities cause students to be less active in participating and interacting in learning.

Based on the problems identified above, this community service program aims to implement the jigsaw technique to enhance student motivation and engagement in learning English vocabulary. Specifically, the objectives of this activity are to: (1) describe student motivation and engagement in English vocabulary learning during the implementation of the jigsaw technique, and (2) identify the factors influencing student motivation and engagement in vocabulary learning using the jigsaw technique.

LITERATURE AND CONCEPTUAL REVIEW

This section provides a comprehensive review of the theoretical frameworks and empirical studies relevant to this research. It examines the key concepts of student motivation and engagement, explores the foundational principles of the jigsaw cooperative learning technique, and identifies the various factors that influence these elements. The literature review serves to establish a theoretical basis for the proposed intervention and contextualize its potential impact.

Student Motivation and Engagement in Vocabulary Learning

Motivation is a key determinant of student learning success. It provides the primary stimulus to initiate learning and later the driving force to sustain the long and often tedious learning process. In the context of English vocabulary learning, motivated students tend to be more willing to participate, persist in challenging tasks, and use strategies that enhance retention. Engagement, on the other hand, refers to the degree of attention, curiosity, and interest that students exhibit when learning or being taught. It is closely tied to motivation and is considered a manifestation of motivation in action.

In many traditional classrooms, vocabulary instruction is often passive, focusing on rote memorization or repetition drills. While such approaches may support short-term memory, they do not always foster meaningful engagement or internal motivation. As noted in the proposal, students in MI IU showed low motivation and engagement due to monotonous, teacher-centered instruction. This condition signals the need for more interactive and student-centered approaches that can sustain both affective and cognitive involvement in learning.

The Jigsaw Technique in Cooperative Learning

The jigsaw technique is a cooperative learning method developed by Aronson in 1978 (Love & Okonkwo, 2019) which aims to increase students' collaboration and individual accountability. In this model, students are divided into "jigsaw groups," each member of which is responsible for learning a different piece of content. Members then meet in "expert groups" to discuss their assigned content before returning to their jigsaw groups to teach their peers.

This technique embodies the principles of constructivist learning, where knowledge is co-constructed through peer interaction. Cooperative learning structures like jigsaw not only improve academic achievement but also enhance social skills, self-confidence, and motivation. Love &

Okonkwo (2019) further affirm that jigsaw promotes student responsibility, engagement, and participation, especially when learning tasks are well-structured and supported with interactive media.

When applied in vocabulary learning, the jigsaw technique encourages students to become “experts” on specific vocabulary items, use them in context, and explain them to peers—an active process that naturally boosts engagement and motivation. Furthermore, group dynamics and peer accountability foster a sense of belonging and enjoyment, which are critical affective factors in language learning.

Factors Influencing Student Motivation and Engagement

Several interrelated factors influence student motivation and engagement during vocabulary learning activities, especially in a cooperative learning setting. These include:

1. Task design – Meaningful and challenging tasks enhance intrinsic motivation.
2. Group interaction – Positive peer collaboration can foster emotional support and increase participation.
3. Learning environment – A supportive classroom atmosphere and use of engaging media can reduce anxiety and improve enjoyment.
4. Teacher role – A shift from authoritative to facilitative teaching increases student autonomy and responsibility.
5. Student self-efficacy – Belief in one's ability to contribute to group work and learn vocabulary effectively can boost both motivation and engagement.

In summary, the jigsaw technique is conceptually aligned with student-centered learning, and its application in vocabulary learning holds promise in enhancing motivation and engagement, especially when supported by appropriate instructional design and classroom dynamics.

RESEARCH DESIGN

This community service program selected MI IU as its partner. This primary school offers English as part of its local curriculum. However, in the learning process, particularly in vocabulary acquisition, the techniques used are still conventional, such as memorization and repetition. This approach is less effective in maximizing student learning outcomes. Therefore, the community service program team took the initiative to implement a more innovative learning technique so that students can more easily learn, understand, and master English vocabulary.

To address the challenges faced by the school, this community service program implemented a series of integrated solutions. These include a student-centered approach, which shifts the teacher's role from instructor to facilitator, allowing students to become more active participants in their own learning. The program also integrated the jigsaw technique to promote cooperative learning, enabling students to collaborate in small groups, share information, and build a collective understanding of vocabulary. Furthermore, the use of interactive learning media such as flashcards, educational games, and digital applications made the learning process more engaging and effective. Finally, the program emphasized the overall organization of cooperative and collaborative learning activities throughout each session to enhance student cooperation and communication.

By implementing these solutions, it is expected that student motivation and engagement in English vocabulary learning can significantly increase. The jigsaw technique, which supports interactive learning, creates a more dynamic and enjoyable learning environment, leading to more optimal student learning outcomes. In other words, these solutions are expected to contribute positively to the development of English vocabulary learning strategies at the primary school level.

This community service program was carried out in three main stages: (1) planning, (2) implementation, and (3) evaluation.

Planning Stage

In the planning stage, the community service program team visited the partner school to identify the obstacles students face in learning English. During this meeting, the team offered various solutions to address these problems. In addition, the team also developed an activity plan that includes the involvement of teachers and students, as well as the learning media to be used.

Implementation Stage

In the implementation stage, the community service program team entered the classroom to collaborate with the teacher in applying the jigsaw technique. Love & Okonkwo (2019, citing Aronson et al., 1978) explain that jigsaw is a cooperative learning method where students are divided into small groups (jigsaw groups) with specific tasks performed under the guidance of a group leader. In this program, the team formed groups according to the number of subtopics taught. Students with the same subtopic should join an expert group to delve into the material and share their understanding. After that, they should return to their jigsaw group to convey the learned material to their group members. During the activity, the community service program team conducted observations using a checklist and field notes to record student and teacher activities.

The objectives of this program were to describe student motivation and engagement in English vocabulary learning during the implementation of the jigsaw technique and to identify the factors influencing student motivation and engagement. Classroom observation was conducted using a checklist and field notes. A questionnaire with closed-ended questions was distributed to the students. Moreover, the student activities in classroom were also documented during the implementation of the jigsaw technique.

Evaluation Stage

In the evaluation stage, the community service program team assessed student motivation and engagement during the application of the jigsaw technique in English vocabulary learning. The results of classroom observations obtained through the checklist, field notes, and documentation were used for discussion and evaluation, providing the partner with an overview of the outcomes of the program. Furthermore, the results from the questionnaire containing student responses to closed-ended questions were used to determine the factors influencing student motivation and engagement during the use of the jigsaw technique in English vocabulary learning. This evaluation was conducted collaboratively by the community service program team, consisting of lecturers and students from Universitas Nahdlatul Ulama Surabaya (UNUSA), and the English teacher of the partner school.

This community service program was not only carried out in a single meeting but also monitored regularly to ensure the effectiveness of the jigsaw technique in enhancing students' vocabulary mastery. This program team encouraged the English teacher to continue applying this technique consistently in learning. In addition, the teacher is expected to report any obstacles that arise during the implementation of the jigsaw technique so they can be discussed and jointly resolved.

RESULTS

Student Motivation and Engagement in English Vocabulary Learning During the Jigsaw Technique

The observational checklist below describes the student motivation and engagement when applying jigsaw technique in classroom. It contains 10 indicators from different aspects.

Table 1 Observational Checklist Results of Student Motivation and Engagement

No.	Observation Focus	Indicators	Yes	No
1	Attention	Students listen attentively during expert group discussion.	√	
2	Participation	Students actively contribute to group discussion.	√	
4	Initiative	Students voluntarily ask or answer questions.	√	
5	Persistence	Students stay on task and complete group work.	√	
6	Enjoyment	Students show enthusiasm (e.g., smiling, engaged facial expressions).	√	
7	Responsibility	Students show ownership of their assigned tasks.	√	
8	Use of media	Students interact actively with instructional media.	√	
9	Focus	Students maintain focus during transition between expert and jigsaw groups.	√	
10	Interaction	Students communicate effectively within their group.	√	

Based on the observational checklist, the students demonstrated strong motivation and engagement during the implementation of the jigsaw technique. All indicators were marked positively:

1. *Attention*: Students were attentive during expert group discussions.
2. *Participation*: They actively contributed to their group's progress.
3. *Initiative*: Students voluntarily asked and answered questions, showing confidence and initiative.
4. *Persistence*: Learners remained on task and diligently completed their group work.
5. *Enjoyment*: Observers noted enthusiastic facial expressions and positive body language, suggesting that students enjoyed the activity.
6. *Responsibility*: Each student appeared responsible for their assigned sub-topic.
7. *Use of Media*: Instructional media (e.g., flashcards or other instructional media) were actively used and engaged with.
8. *Focus*: Students maintained concentration even during transitions between expert and jigsaw group phases.
9. *Interaction*: Effective communication among group members was consistently observed.

These findings show that the jigsaw technique successfully created a dynamic and interactive learning environment where students were mentally, emotionally, and socially engaged in vocabulary learning.

Factors Influencing Student Motivation and Engagement

The questionnaire below describes the factors influencing the student motivation and engagement when applying jigsaw technique in classroom. It contains 12 statements from different aspects.

Description: Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree

The closed-ended questionnaire results support and deepen the observational findings by identifying the *factors* that influenced student motivation and engagement. Most students selected the highest response (scale 4 – *strongly agree*) for almost every statement, indicating a high level of agreement.

Motivational Factors:

1. Students reported feeling excited to learn vocabulary through group activities.
2. They enjoyed taking responsibility for learning and sharing vocabulary items.
3. Learning with peers was seen as more motivating than individual study.
4. The experience stimulated a desire to learn more vocabulary beyond the task.

Engagement Factors:

1. Students participated actively in discussions.
2. They paid close attention to peer presentations.
3. Tasks were completed with seriousness and commitment.

- Students also showed engagement by asking and answering questions voluntarily.

Influential Supporting Factors:

- The use of the jigsaw technique itself was described as interesting and effective.
- Group work was seen as fun and less stressful, enhancing the learning experience.
- A facilitative teacher role (as a helper, not just a lecturer) increased comfort and motivation.
- Students felt more confident when learning collaboratively.

Overall, the results suggest that interactive tasks, peer collaboration, media use, and teacher support were key factors in enhancing both motivation and engagement in vocabulary learning through the jigsaw technique.

Table 2 Questionnaire Results on Factors Influencing Student Motivation and Engagement

No.	Statement	1	2	3	4
Motivation					
1	I feel excited to learn English vocabulary through group activities.				√
2	I enjoy being responsible for learning and sharing vocabulary.			√	
3	I am more motivated when learning vocabulary with my friends.				√
4	I want to learn more English words after participating in jigsaw activities.			√	
Engagement					
5	I actively participated in my group discussion.			√	
6	I paid attention during my friends' presentations.				√
7	I completed my vocabulary task seriously.			√	
8	I asked or answered questions during the activity.				√
Influencing Factors					
9	I feel more interested when learning vocabulary using jigsaw technique.				√
10	Working in groups made learning more fun and less stressful.				√
11	I learn better when the teacher acts as a helper, not just a lecturer.				√
12	I feel more confident when I work together with my group.				√

DISCUSSION

This study aimed (1) to describe student motivation and engagement in English vocabulary learning during the implementation of the jigsaw technique, and (2) to identify the factors influencing student motivation and engagement. The discussion integrates observational and questionnaire data and relates them to current educational theories and research.

Student Motivation and Engagement during the Jigsaw Technique

The results from the observational checklist show that students demonstrated high levels of motivation and engagement throughout the vocabulary learning sessions using the jigsaw technique. Students were attentive, actively participated in group discussions, showed initiative, and remained persistent in completing their assigned tasks. Indicators such as enjoyment and responsibility were also strongly visible. These findings align with the notion that cooperative learning structures like jigsaw can significantly enhance learner engagement and motivation by fostering a sense of accountability and purpose (Gillies, 2016).

The questionnaire data reinforced these findings. The results indicate a high level of student motivation when engaging in group-based learning activities. A unanimous 100% of the respondents felt excited to learn English vocabulary through group work and felt more motivated when learning with their friends. This suggests that the collaborative environment itself is a powerful motivator. In terms of ownership and curiosity, a strong majority of 75% enjoyed the responsibility of learning and sharing vocabulary, and the same percentage wanted to learn more English words after participating

in the jigsaw activities. These findings collectively highlight the positive impact of peer interaction and collaborative learning on students' desire to learn and their overall motivation.

Most students reported feeling excited and motivated to learn vocabulary collaboratively. They enjoyed taking responsibility for learning specific words and sharing their understanding with peers. This supports Dörnyei's (2019) motivational framework which emphasizes learner autonomy, social interaction, and the relevance of tasks as key motivational drivers in language learning contexts.

Moreover, student engagement was clearly demonstrated through positive self-reports on attention, task completion, and participation in group work. This is consistent with the findings of Fredricks, Wang, and Schall Linn (2020), who assert that engagement in learning is multidimensional—comprising behavioral, emotional, and cognitive elements—which can be activated through meaningful collaborative tasks. The jigsaw method encouraged not just active participation but also cognitive involvement, as learners had to understand vocabulary deeply enough to explain it to their peers.

Based on the questionnaire results, student engagement levels were consistently high. A unanimous 100% of respondents reported paying attention during their friends' presentations, indicating a strong level of focus on peer-led instruction. Furthermore, a significant majority of 75% actively participated in their group discussions, completed the vocabulary tasks seriously, and engaged by asking or answering questions during the activity. These findings suggest that the students were not just physically present but were also cognitively and behaviorally engaged throughout the learning process.

In sum, both results from observational checklist and questionnaire confirm that the jigsaw technique effectively promoted student motivation and engagement in vocabulary learning by creating a supportive, participatory, and student-centered learning environment.

Factors Influencing Student Motivation and Engagement

In addition to describing the level of student motivation and engagement, the study also sought to identify the underlying factors that contributed to this outcome. Questionnaire responses revealed several influencing factors: the group-based nature of the activity, the facilitative role of the teacher, the interactive use of media, and the students' increased confidence when working collaboratively.

The questionnaire results reveal that several factors critically influence student motivation and engagement. A unanimous 100% of respondents felt more interested in learning vocabulary when using the jigsaw technique. Similarly, every student agreed that working in groups made the learning process more enjoyable and less stressful, and they felt more confident collaborating with their peers. The data also highlights the crucial role of the educator, as all students agreed they learn better when the teacher acts as a facilitator rather than a traditional lecturer. These findings strongly suggest that student motivation is enhanced by a supportive, collaborative, and interactive learning environment.

These findings are supported by recent research. Collaborative learning environments are shown to reduce learning anxiety and increase enjoyment (Zheng et al., 2021). The perception of a non-threatening, peer-supported space motivates learners to take risks in using new vocabulary and expressing themselves in English. Additionally, group work cultivates a sense of belonging, which is closely linked to increased classroom engagement (Wentzel & Muenks, 2019).

The teacher's shift from a lecturer to a facilitator also played a crucial role. According to Mercer and Dörnyei (2020), when teachers act as learning partners who guide rather than dominate the classroom, students develop a greater sense of ownership and agency over their learning. This change in role was well-reflected in the students' responses, as they felt more supported and confident.

Furthermore, the positive effect of instructional media use (e.g., flashcards and games) corroborates findings from Kelsen (2020), who emphasized that engaging, multimodal resources can sustain learners' attention and curiosity, particularly in vocabulary instruction.

Based on the results of the observational checklist, the students demonstrated a high level of motivation and engagement throughout the learning activities. The observations indicate that all students showed consistent positive behaviors across all indicators. The findings suggest that several

key factors influenced this high level of engagement. All students showed ownership of their assigned tasks and actively contributed to their group discussions, highlighting the positive impact of collaborative learning on responsibility and participation. Furthermore, the students' enthusiasm and willingness to interact with instructional media point to the effectiveness of the teaching methods used. The students' ability to maintain focus and interact effectively within their groups indicates that the structured, cooperative nature of the activities fostered both motivation and a productive learning environment.

The consistency between observational and questionnaire results strengthens the conclusion that multiple interconnected factors—including cooperative learning structures, task design, peer support, teacher roles, and interactive media—contribute to students' motivation and engagement. These findings also validate Deci and Ryan's Self-Determination Theory (SDT) as extended in recent classroom studies, which argue that motivation and engagement flourish when three psychological needs are met: autonomy, competence, and relatedness (Deci & Ryan, 2020).

CONCLUSION

Based on the discussion provided, the study successfully achieved its two main objectives. The findings from both the observational checklist and the questionnaire consistently showed that implementing the jigsaw technique had a positive and significant effect on student motivation and engagement in English vocabulary learning.

The results indicate that students were highly motivated and engaged throughout the collaborative learning process. Unanimous 100% of respondents felt excited to learn in groups and more motivated when learning with their friends. A majority of 75% enjoyed the responsibility of learning and sharing vocabulary and expressed a desire to learn more English words after the activity. The students' engagement was also clearly demonstrated, with 100% of respondents reporting that they paid attention during presentations, and 75% actively participating in group discussions.

The research also successfully identified the key factors that influenced these positive outcomes. All students agreed that the jigsaw technique made learning more interesting and that working in groups made it more enjoyable, less stressful, and boosted their confidence. The role of the teacher was also critical, as all students agreed they learn better when the teacher acts as a facilitator rather than a traditional lecturer. In conclusion, the findings confirm that the jigsaw technique is an effective method for enhancing student motivation and engagement by creating a supportive, participatory, and student-centered learning environment.

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Conflict of Interests

The authors declared that no potential conflicts of interest with respect to the authorship and publication of this article.

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