

## Enhancing EFL Reading Comprehension through the Jigsaw Technique: A Systematic Review

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### ABSTRACT

Numerous studies have examined reading comprehension in English as a Foreign Language (EFL) classroom; however, inconsistencies remain regarding the effectiveness of cooperative learning strategies, particularly in fostering social interaction and individual responsibility. Although the jigsaw technique has frequently been recommended, few studies have explored how its core aspects influence reading outcomes. This study aims to investigate, through a systematic literature review using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, how the application of the jigsaw technique improves reading comprehension in EFL classrooms. A total of 24 relevant articles published between 2016 and 2025 were selected and systematically analyzed. The findings reveal two main aspects of the jigsaw technique's implementation in the classroom: (1) building new knowledge through discussion and exchanging opinions, and (2) fostering a sense of individual responsibility in cooperative learning. The implications of these findings are that teachers can implement the jigsaw technique as a learning strategy to sharpen students' reading comprehension by leveraging the aspects of collaborative discussion and individual responsibility inherent in the learning process.

**Keywords** : Jigsaw, Reading Comprehension, EFL Classroom, Systematic Review

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### INTRODUCTION

Difficulties in reading comprehension remain a major issue in English as a Foreign Language (EFL) learning. A lack of student engagement and limited interaction are the reasons why many students struggle to comprehend texts effectively. In order for students to be able to conclude, interpret, and analyze reading texts, good reading comprehension skills are needed (Nurjanah, 2018). According to Grabe and Stoller (2001), reading comprehension is defined as the ability to absorb information from a text and relate it to existing knowledge (Grabe and Stoller, (2001) as cited in Je et al., 2025). By reading the text, readers connect the written words with their meanings. Several studies suggest that teachers apply the cooperative learning language method in teaching. Cooperative learning is a learning method in which students work together in small groups to participate in games and activities that have pedagogical objectives. Students who successfully complete these tasks receive rewards or recognition based on their group's performance, which is the result of the combined efforts of the students (Slavin, 1980). One of the techniques that is often used from this method is the jigsaw. The

jigsaw method facilitates an active learning environment where students collaborate to overcome language barriers (Le et al., 2018).

Jigsaw includes cooperative learning in which students are divided into small groups. Each group has one member who plays an important role, namely finding and solving problems. The jigsaw method is in line with several widely known language learning theories and educational psychology theories (Wang et al., 2023). This is supported by Vygotsky's social constructivism theory, which emphasizes that learning is a social process. According to this theory, students construct knowledge through interaction, particularly with peers who have a greater understanding. In jigsaw classes, students actively take on the roles of both learners and teachers, motivating them to construct meaning through discussion. Through discussions in pairs or in small groups, students listen to each other, share ideas, and opinions. This helps them learn to work together in groups as well as hone their communication skills (Chorna & Tsapro, 2022). In addition, the Jigsaw technique makes students more comfortable, freer to discuss with their groups, and presents a new and fun atmosphere in the classroom. (Herman et al., 2020)

The approach that will be used in this study is the Systematic Literature Review. The study using systematic literature review has been conducted. Syafputri et al. (2025) mentioned in their study that jigsaws have proven to be effective in improving students' reading skills. With cooperation and group discussions, students become more active and can exchange information. However, the study focuses on Indonesian subjects. On the other hand, a study from Cochon Drouet et al. (2023) said that jigsaws have been proven to be effective but the results are not always consistent. It depends on how many samples are used and their implementation. Even in the results, only three articles showed the positive effects of the jigsaw on students. Previous research has shown that the jigsaw technique can improve reading comprehension, though the results are not always consistent. Furthermore, no studies have yet explained how the aspects of the jigsaw technique contribute to improving reading comprehension, particularly in EFL classrooms.

Therefore, this study aims to fill this gap by reviewing previous studies using the PRISMA framework. This study offers a new contribution by synthesizing the latest research and focusing on English as a Foreign Language (EFL) learning. This study aims to answer the research question: What aspects are highlighted in previous studies regarding the implementation of the jigsaw technique in improving reading comprehension in EFL classrooms?

## **METHODS**

This study uses a systematic literature review (SLR) guided by the Preferred Reporting Items for Systematic Reviews (PRISMA). Through this method, data from various studies in the review are collected and evaluated so that they can be understood more comprehensively (Budianto et al., 2022). This method consists of four components: (1) selection criteria, (2) search formula strategy, (3) systematic review process, and (4) data analysis.

### **Selection Criteria**

The inclusion and exclusion criteria are date, language, setting, and database. We limited the journals published from 2016 to 2025 so that the papers analyzed were not too old and the results were still relevant when writing this study. Furthermore, the papers are written in English. Next, we only focus on paper which explicitly mention what are the aspects of the jigsaw technique in improve reading comprehension in EFL classes. If a study uses other techniques than jigsaw, not in an EFL class, and do not explicitly mention the aspect of jigsaw in improves reading comprehension, it is included in the exclusion criteria. Finally, the data to be analyzed was obtained from Scispace and Google

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Scholar with the help of the Publish or Perish tool. Scispace and Publish or Perish were selected as databases because Scispace has a feature that displays the abstracts and findings of each article. After inputting the keyword in the search bar, the title, author, abstract, and findings of each article appear, making it easier for the author to select articles. The identification process becomes more effective without the need to read the full text of each article. Publish or Perish was chosen as a tool based on the consideration that several reputable databases, such as Scopus, ERIC, and others, provide limited literature results after inputting keywords, both in terms of quantity and topic relevance. To maintain the quality and validity of the results, the literature selection process is conducted rigorously by following pre-established inclusion and exclusion criteria.

**Table 1.** Eligibility Criteria

Criteria	Included	Excluded
Date	Papers published from 2016 to 2025 were included	Papers published before 2016 and after 2025 were excluded
Language	English	Papers not written in English
Setting	Papers that explicitly mention how and what the aspects of jigsaw technique in improve reading comprehension in EFL classroom	Papers that do not explicitly mention how and what the aspects of jigsaw technique in improve reading comprehension in EFL classroom
Database	Scispace and Google Scholar using the Publish or Perish tool	Other databases

### Search Formula Strategy

The table and picture below show the research strategy used when searching for data in Scispace and Publish or Perish tool. Searching for articles on Scispace uses Boolean operators (AND). An example of a search strategy is “jigsaw” AND “reading” AND “effective” AND “enhance” AND “improve” AND “develop” AND “EFL classroom” AND “EFL university,” then input into the literature review search bar. The years to be displayed are also narrowed down to only 2016 through 2025. Unlike Scispace, on Publish or Perish, you can directly input the required keywords into the keyword bar without needing to use Boolean operators. The total number of articles found was 1022, consisting of 100 from Scispace and 922 from Google Scholar.

**Table 2.** Search Formula Strategy

Database	Research Strategy	Result
Scispace	“jigsaw” AND “reading” AND “effective” AND “enhance” AND “improve” AND “develop” AND “EFL classroom” AND “EFL university”	100
Google Scholar using the Publish or Perish tool	jigsaw, reading, efl classroom	922
Total		1022

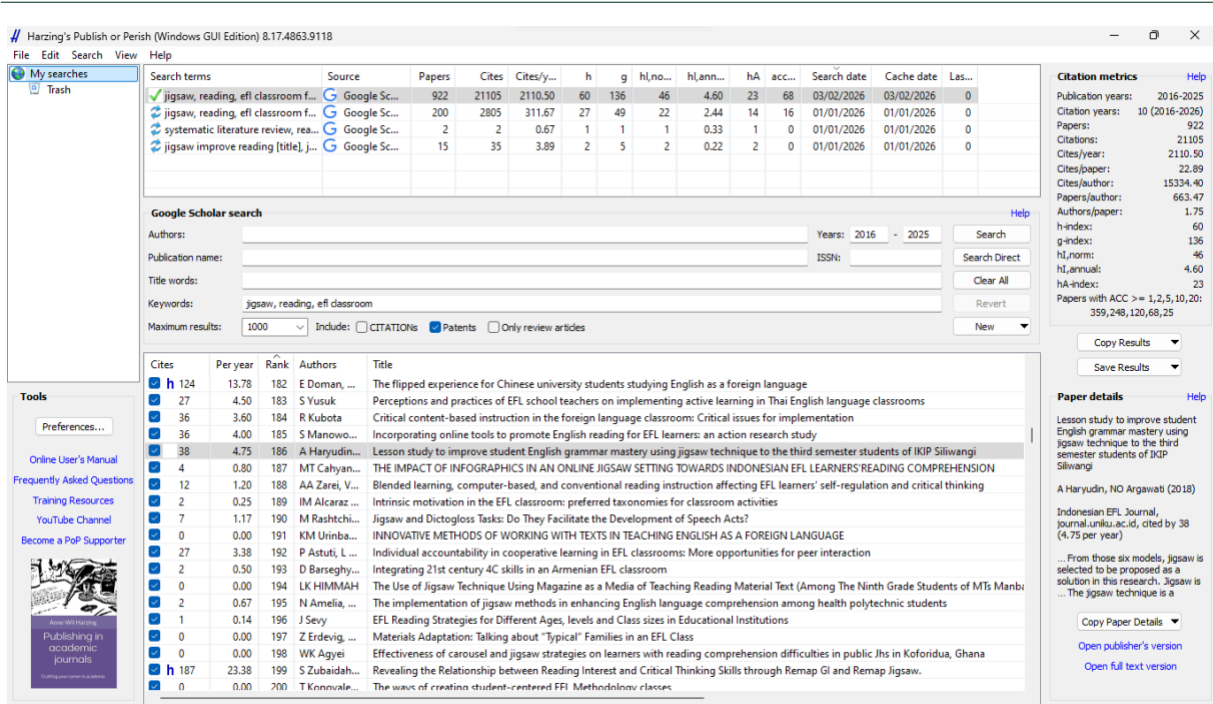


Figure 1. Search Strategy of Publish or Perish

### Systematic Review Process

The picture below shows the process of analyzing data from the beginning to the end, starting from identification, screening, and eligibility.

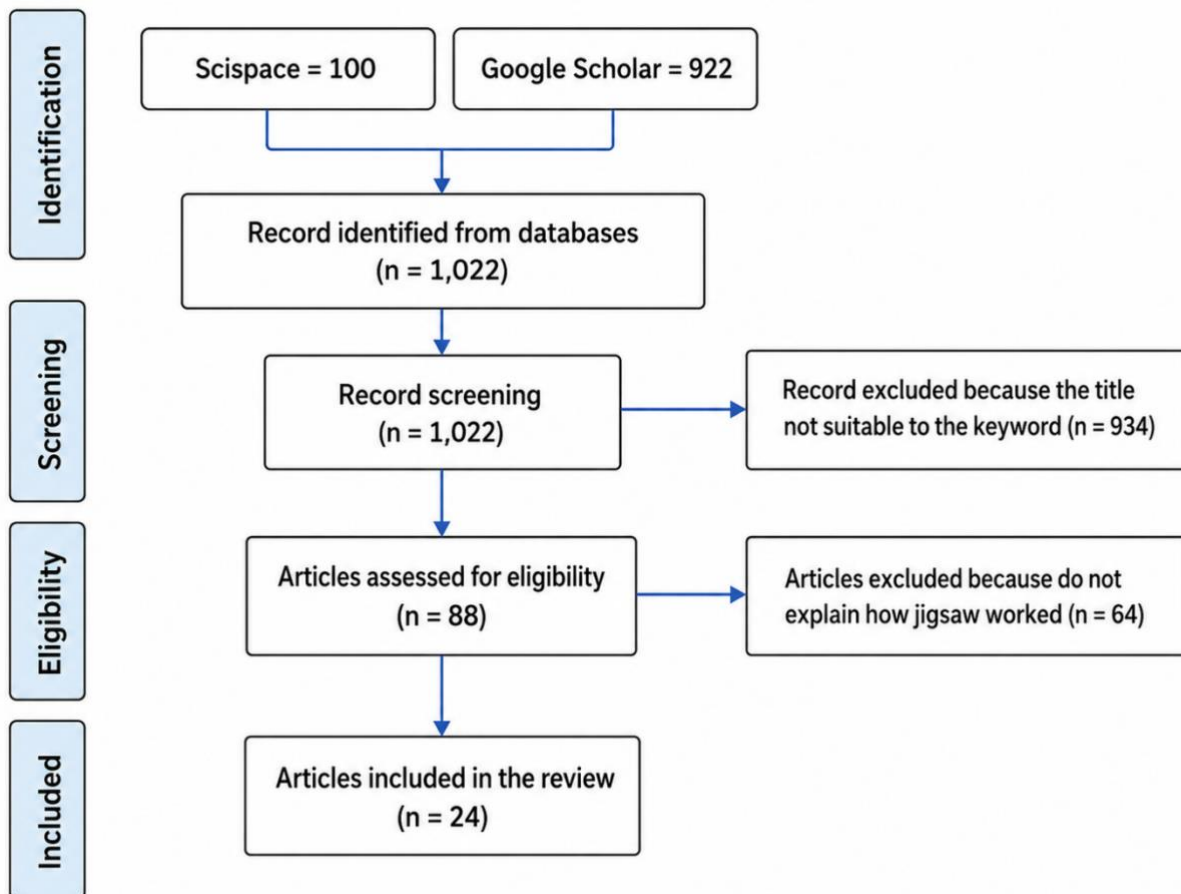
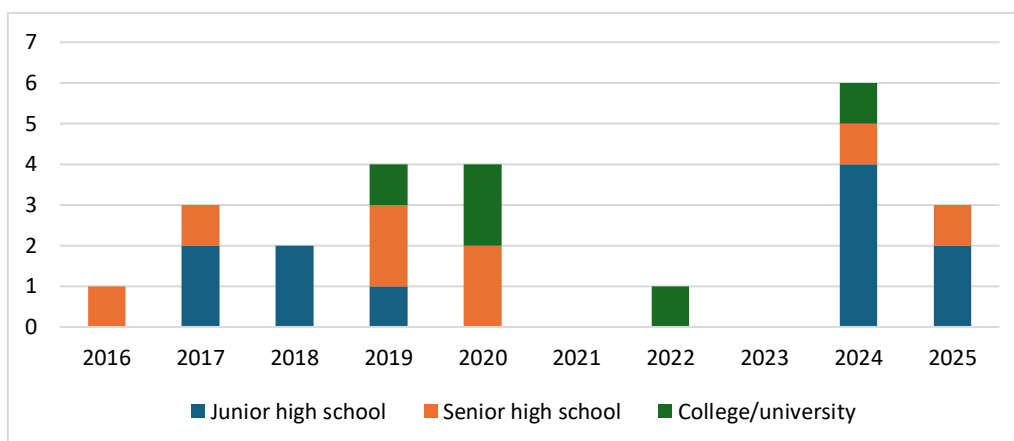


Figure 2. Systematic Review Process

The first step was to identify data by entering the research strategy and keywords into the Scispace and Publish or Perish databases. The data was limited to the period from 2016 to 2025. The results obtained were 100 data points from Scispace and 922 data points from Publish or Perish. From these results, a screening process was carried out by checking the titles to see whether they were relevant to the required keywords or not. After screening, 48 papers relevant to the required keywords were obtained in Scispace and 40 papers in Publish or Perish. There were 934 data excluded because the titles did not match the keywords. The next step was the eligibility process. At this step, the data obtained must focus on how jigsaw improves reading comprehension, especially in EFL classes. If the technique used is not only jigsaw, the focus is not only on improving reading comprehension, does not explain how jigsaw helps improve reading comprehension, and is not in an EFL classroom, then the data will be immediately eliminated. Then, in the final step, 24 data sets that met the criteria required for analysis were obtained and stored in the eligibility folder.

From 2016 to 2025, 24 articles were published. Articles involving junior high school students appeared in 2017 (two articles), 2018 (two articles), 2019 (one article), 2024 (four articles), and 2025 (two articles). Articles involving high school students appeared in 2016 (one article), 2017 (one article), 2019 (two articles), 2020 (two articles), 2024 (one article), and 2025 (one article). Then college students appeared in 2019 (one article), 2020 (two articles), 2022 (one article), and 2024 (one article). The year 2024 had the most publications, with six articles. No articles were published in 2021 and 2023. Of the 24 articles, junior high school students were the most frequently researched subject. Attached in Figure 3.



**Figure 3.** Diagram of Article

### Data Analysis

The selected studies were analyzed using thematic analysis. The analysis process involved reading and deeply understanding each data point, highlighting key sections, grouping codes that could potentially form major themes, verifying that the selected themes were truly present in each data point, clearly labeling each theme, and then summarizing the analysis results for inclusion in the research report. Key points analyzed include:

1. Author and year of publication
2. The studies' context focuses on EFL, ranging from middle school to university levels, across various countries
3. Use of the jigsaw technique
4. Explanation of how the author implemented the jigsaw technique in the classroom
5. Identification of aspects of the jigsaw technique that influence improved reading comprehension

## RESULTS AND DISCUSSIONS

### Results

Based on 24 articles that we have reviewed in depth, we found that jigsaw is proven to be effective in improving reading comprehension in EFL classes, and there are two main points on how this jigsaw technique helps improve students' reading comprehension. From all the articles reviewed, discussion or group work was the most frequently mentioned point, followed by individual accountability in relation to how jigsaw helps improve students' reading comprehension. A summary of the analyzed articles is provided in the table below, which includes the author and year, title, participants, and findings.

**Table 1.** Characteristics and Findings of the 24 Articles Included in the Systematic Review

No	Author (year)	Title	Participant	Finding
1.	Abed, T. B. B., (2019)	The implementation of jigsaw as a cooperative learning strategy to improve Birzeit University EFL students' reading comprehension	University students	Jigsaw helped promote individual accountability each student.
2.	Namaziandost et al., (2020)	Enhancing pre-intermediate EFL learners' reading comprehension through the use of jigsaw technique	University students	Jigsaw helped students to develop their cooperation through discussion.
3.	Nisa et al., (2025)	The implementation of jigsaw cooperative learning in teaching English reading comprehension	Junior high school students	Students are encouraged to think critically by listening to others and sharing their opinions in small groups.
4.	Barbosa et al., (2020)	Improving reading comprehension through jigsaw technique	University students	Students were motivated to speak and discuss their ideas and opinions.
5.	Yu & Saihong, (2024)	The use of jigsaw cooperative learning strategy to enhance English reading comprehension for higher vocational college students in Sichuan province, China	University students	Students take responsibility for specific content, share it with peers, and engage in meaningful discussions
6.	Rashed et al., (2022)	The effectiveness of implementing jigsaw technique on undergraduate students' achievement in reading comprehension skills	University students	Through jigsaw students have chances to participate meaningfully, and share knowledge with each other.
7.	Mada A et al., (2024)	A jigsaw technique as a stimulant for promoting reading comprehension among EFL high school students	High school students	Jigsaw promoting shared responsibility in the learning process.
8.	Gifarini et al., (2025)	Enhancing students' reading comprehension through the jigsaw method: evidence from	High school students	Through jigsaw, every participant became both a learner and a teacher, contributing actively to the

No	Author (year)	Title	Participant	Finding
		a private senior high school in Palu, Central Sulawesi		group's comprehension of the whole text.
9.	Ameiratreni et al., (2017)	Improving students' achievement in reading comprehension through jigsaw strategy at SMAN 1 Abung Selatan	High school students	Jigsaw strategy created made students responsible in understanding the part.
10.	Khairunisa et al., (2019)	Improving students' reading comprehension on romance narrative text by using jigsaw	High school students	This method let students to focus in comprehending the specific materials needed from the text so then they will have the responsibility to the learning and make them become more active
11.	Nozohouri et al., (2016)	Investigating the effectiveness of jigsaw 2 model and traditional learning in reading comprehension of Iranian learners	High school students	Students cooperate with each other to maximize their own and encourages mutual interaction.
12.	Herman et al., (2020)	The effect of jigsaw technique in reading comprehension on recount text	High school students	Students have to understand the context of the text so they have the responsibility to explain what they get to their friends.
13.	Islam R, (2020)	The jigsaw technique on students reading comprehension across learning styles	High school students	Students find it easier to understand the text when working in groups, and they also become more active.
14.	Astuti et al., (2019)	Using graphic organizers to improve reading comprehension skill through jigsaw activity	High school students	Students are encouraged to understand the material so that they can take responsibility for it and explain it to their member group.
15.	Subhan et al., (2019)	Enhancing the VIII B students reading comprehension achievement on recount text by using jigsaw IV technique at SMP Muhammadiyah 3 Rambipuji	Junior high school students	Through the jigsaw method, students try to understand the content of the text and then discuss it together.
16.	Katamba & Samuel, (2017)	Improving students reading comprehension ability using jigsaw 1 technique	Junior high school students	Through jigsaw activities, students become more responsible and more active in solving problems.
17.	Fajria et al., (2025)	Teaching reading comprehension using jigsaw technique to eight grade students at SMP Negeri 16	Junior high school students	Group discussion helps students to more easily find important information and understand the structure of the story.

No	Author (year)	Title	Participant	Finding
18.	Sihombing et al., (2024)	The effect of the jigsaw teaching technique on the students reading comprehension at seventh grade of UPTD SMPN 5 Pematangsiantar	Junior high school students	Through discussion, students gain new perspectives from their peers and are able to quickly focus on a topic.
19.	Triyono et al., (2024)	The effect of using jigsaw type II technique on junior high school students reading comprehension achievement	Junior high school students	Jigsaw increases students' sense of responsibility for their learning.
20.	Nurbianta & Dahlia, (2018)	The effectiveness of jigsaw method in improving students reading comprehension	Junior high school students	Jigsaw promotes students to interact in peers or groups and share opinion.
21.	Agustina et al., (2024)	The use of jigsaw technique to improve reading comprehension of seventh grade students based digital text description	Junior high school students	Students become active in sharing and discussing their texts in their expert group.
22.	Aprilia et al., (2024)	The use of jigsaw technique to improve reading comprehension of the eighth grade	Junior high school students	Jigsaw activities boost creativity and problem-solving skills through discussion with peers.
23.	Hoerunnisa & Suherdi, (2017)	The effectiveness of jigsaw in improving students' reading comprehension	Junior high school students	Through discussions, students feel more confident because of the pleasant atmosphere.
24.	Yuhananik, (2018)	Using jigsaw model to improve reading comprehension of the ninth graders of SMPN 1 Karangploso	Junior high school students	Through discussion, sharing ideas, and listening to their peers' opinions, students find it easier to understand the text.

### 1. The Role of Collaborative Interaction

The first point is the role of collaborative interaction in helping students improve their reading comprehension. Cooperative learning involves students working together in small or large groups to complete tasks (Slavin, 1980). With the jigsaw technique, students find it easier to complete tasks because discussions and cooperation allow them to exchange opinions. This point was found in 13 papers, including (Aprilia et al., 2024; Agustina et al., 2024; Barbosa et al., 2020; Fajria et al., 2025; Hoerunnisa & Suherdi, 2017; Islam, 2020; Namaziandost et al., 2020; Nisa et al., 2025; Nozohouri et al., 2016; Nurbianta & Dahlia, 2018; Rashed, 2022; Sihombing et al., 2024; Yuhananik, 2018).

*“Students in the group share their interpretation and analysis of the text, so they gain a deeper understanding from different perspectives. This helps them capture nuances and meanings that they might have missed if working alone”.* (Fajria et al., 2025,p. 837)

A study by Fajria et al. (2025) shows that jigsaw is proven to be effective in improving reading comprehension. By sharing opinions and analyses in groups, students gain a deeper understanding from different perspectives. This helps students obtain information that they might have missed if they had worked alone.

## 2. The Role of Individual Responsibility

In addition to collaborative interaction, the next point is individual responsibility. Aside from discussion, a sense of responsibility also plays a major role in improving reading comprehension. Students are given a sense of responsibility by first sharing several parts of the text, then the teacher asks them to understand the text they have more deeply so that they can explain it to their friends. This encourages students to take responsibility for their tasks. This point was found in 11 papers, including (Abed, 2019; Ameiratrini et al., 2017; Astuti et al., 2017; Gifarini et al., 2025; Herman et al., 2020; Katemba & Samuel, 2017; Khairunisa et al., 2019; Mada et al., 2024; Subhan et al., 2019; Triyono et al., 2024; Yu & Saihong, 2024).

*“In the learning process using the jigsaw method, students work together in small groups to understand specific parts of the text, then take responsibility for explaining the content of their section to other group members. This activity encourages students to read deeply, understand the meaning of the text, and clearly convey information to their peers”.* (Gifarini et al., 2025, p. 917).

A study by Gifarini et al. (2025) explains that students work together to understand certain parts of a text and are then responsible for explaining the content of their section to other group members. This activity encourages students to read more and understand the content of the text because they have a responsibility to provide clear information to their friends.

## Discussion

This study aims to determine how the jigsaw technique can improve reading comprehension in EFL classrooms. From the results of a systematic review of 24 articles that have been reviewed in depth, two main points were found that show how jigsaw can improve reading comprehension: (1) the existence of discussion activities and (2) the existence of a sense of responsibility in students.

The first finding highlights the influence of discussion activities in learning activities. When students discuss, express, and listen to their friends' opinions, this adds to their knowledge and understanding of the reading text that has been given by the teacher beforehand. This finding supports (Slavin, 1980) theory that by working together, it will be easier to achieve common goals because they originate from combined individual efforts. Fajria et al. (2025) stated in their study that through discussion activities, students can easily obtain important information from various opinions and their friends, which increases their reading comprehension. In studies by Rashed (2022), Namaziandost et al. (2020) and Nurbianta & Dahlia (2018), it was shown that discussion activities not only increased students' understanding of the reading material but also motivated them and made them more confident in expressing their opinions. Although previous studies have shown positive results, this does not rule out the possibility that the jigsaw method may not be effective. If students are unwilling to participate, the benefits of the discussion may be hindered by a lack of student interaction. For example, in Hoerunnisa & Suherdi (2017) study, there were negative responses from students. The students stated that group work actually made the classroom noisy because some students tended to chat and play around instead of focusing on the discussion. Furthermore, during discussions, the teacher sets a time limit, but this limited time is the reason why the jigsaw method sometimes fails to be effective. As in Barbosa et al. (2020) study, one student said that the limited time prevented them from fully understanding the text.

Next, the second finding shows that with a sense of responsibility, students become more serious in understanding the material because they must be able to explain the material to other group members. In Abed, T.B.B. (2019) study stated that the application of the jigsaw technique not only

involves group formation and discussion, but also requires students to understand and explain the material they have learned. A study by Suryanti et al. (2024) proves that group discussions in jigsaw provide opportunities for students to practice reading and take responsibility for their reading results, thereby significantly improving their comprehension. However, these benefits may not be equally distributed across all groups. For example, students with low self-confidence may struggle to fulfill their roles, it means the positive effects of the jigsaw technique may not be fully realized. Study by Mada et al. (2024) was found that some students with low comprehension skills tended to struggle to keep up with their friends' progress, resulting in longer study times than necessary. In Khairunisa et al. (2019) study, the implementation of the jigsaw method did not go well because some students were passive and did not pay attention to the instructions, so they were unable to provide information to their peers.

Theoretically, the results of this study reinforce the theory of cooperative learning, which shows that social interaction and individual responsibility play a major role in improving reading comprehension. When students discuss and are given responsibility, it encourages them to understand the material more deeply before sharing it with the group. Practically, the jigsaw technique can be applied to create a more collaborative learning environment. Not only as a learning method but also as a means of evaluating students' understanding through their ability to explain the material back to their original group. In addition to helping students feel more confident and active, their reading comprehension also improves.

## CONCLUSIONS

The results of a systematic literature review of 24 articles show that discussion activities and individual responsibility play a major role in improving reading comprehension. Through discussion, students can share opinions and gain new perspectives from their peers. A sense of responsibility also encourages students to understand the material in depth because they are required to be able to explain the material they have learned.

However, this study certainly has limitations. The research used the Scispace and Google Scholar platforms assisted by Publish or Perish, which means that some relevant studies may not have been identified despite the application of clear inclusion and exclusion criteria. The number of articles analyzed was also limited to only 24, so the results obtained may not fully represent the overall body of research on the effectiveness of the jigsaw method in improving reading comprehension. The potential for selection bias during article identification also cannot be entirely avoided.

Therefore, for future research, it is recommended to conduct studies on the effectiveness of the jigsaw technique using a wider variety of research designs. An example is an experimental study comparing this technique with other cooperative learning techniques. Additionally, further research should also investigate the application of the jigsaw technique under various factors such as students' proficiency levels, classroom atmosphere, text types, and different student characteristics. This aims to provide a deeper and more comprehensive understanding of the most effective conditions for using the jigsaw technique, including when and how it should be applied.

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