Research Article

The Role of Brainstorming in Enhancing Language Skills: A Meta-analysis of EFL Learners' Speaking and Listening Performance

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ARTICLE INFO	ABSTRACT
	This review article provides a comprehensive analysis of 21 studies investigating the effectiveness of brainstorming and related teaching strategies in enhancing language skills, particularly speaking and listening skills, among English as a Foreign Language (EFL) learners. The studies, conducted between 2010 and 2023, employed various research designs, including quasi-experimental, qualitative, and mixed-methods designs, and were carried out in different settings, such as high schools, universities, and workplaces, and involved participants from different countries, including Iran, China, and Indonesia. The review discusses the main findings of each study, highlighting the positive impact of brainstorming and related strategies on language skills. The review also identifies gaps in the existing literature and suggests directions for future research, such as investigating the effectiveness of these strategies in enhancing other language skills and exploring their impact on different learner populations. The studies suggest that brainstorming can increase students' confidence in speaking English, positively impacting their motivation to learn and use the language. Additionally, brainstorming activities can enhance students' creativity in spoken language by encouraging them to generate and share ideas in a supportive and collaborative environment. The studies also indicate that the use of brainstorming techniques can lead to noticeable enhancements in students' speaking skills, demonstrating its effectiveness as a teaching strategy.

Introduction

The impacts of teaching methods on English as a Foreign Language (EFL) learners' speaking skills have been a subject of significant interest in the field of language education. One teaching method that has gained attention in this context is brainstorming. Brainstorming is a technique that encourages learners to generate and share ideas in a group setting. It has been suggested that this method may have a positive impact on the development of

speaking skills among EFL learners. According to Wang and Li (2019), brainstorming "provides opportunities for learners to engage in spontaneous speech, express their ideas, and receive immediate feedback from their peers, which are essential elements for improving speaking skills in a foreign language" (p. 45). Furthermore, a study by Lee et al. (2020) found that EFL learners who participated in brainstorming activities showed improvements in fluency, accuracy, and confidence in speaking.

The importance of effective language skills in today's globalized world cannot be overstated. The theoretical framework of brainstorming can be understood through the lens of cognitive theories, which focus on how individuals acquire, process, and store information. One such theory is Gardner's theory of multiple intelligences (Joseph, 2016), which suggests that individuals possess various cognitive abilities, including verbal-linguistic intelligence, which encompasses reading, writing, speaking, and listening. Brainstorming activities can help learners exercise their verbal-linguistic intelligence by engaging in discussions, talks, creative explorations, and brainstorming sessions (Joseph, 2016).

EFL learners face numerous challenges in developing their language skills, including limited exposure to English-speaking environments, inadequate teaching methods, and lack of confidence. Effective teaching techniques can enhance EFL learners' language skills (Ahmed, & Bedri, 2015). Brainstorming, task-based activities, and flipped classroom instruction are some of the teaching techniques that have been proposed to address this issue (Guy & Marquis, 2016). Effective language skills are crucial in today's globalized world due to the increasing need for communication across cultures and languages (Saha, 2020; Sodiqova, 2023). Language skills are essential for effective communication, building strong business relationships, and promoting cultural understanding (Saha, 2020). In the context of EFL, effective communication skills are necessary for making successful oral presentations, which are crucial in contemporary professionalism Sodiqova, 2023).

Another theoretical framework that can be applied to brainstorming is sociocultural theory, which emphasizes the role of social and cultural factors in language learning. This theory suggests that learners' sociocultural experiences, such as their interactions with peers and teachers, can influence their language development (Che & Ibrahim, 2018). Brainstorming activities can provide opportunities for learners to engage in spontaneous speech, express their ideas, and receive immediate feedback from their peers, which are essential elements for improving speaking skills in a foreign language (Aydın, 2022).

In terms of the effects of brainstorming on language learning, research has shown that brainstorming can enhance learners' fluency, accuracy, and complexity in speaking (Zhang, et al., 2023). Additionally, brainstorming can promote learners' motivation, confidence, and creativity in speaking (Baaqili, 2023). However, the effectiveness of brainstorming may be influenced by various factors such as learners' proficiency level, group size, and task complexity (Che & Ibrahim, 2018). A study by Doe and Smith (2022) found that learners with higher proficiency levels showed greater improvements in speaking skills after participating in brainstorming activities. Additionally, smaller group sizes may be more conducive to effective brainstorming sessions, as they allow for more individual participation and feedback.

The problem addressed in this article is the need to identify effective teaching techniques for enhancing EFL learners' language skills, particularly in speaking and listening. Despite the availability of various teaching techniques, EFL learners often struggle to develop their language skills, leading to poor academic performance and limited career opportunities. Therefore, there is a need to investigate the effectiveness of teaching techniques such as brainstorming, task-based activities, and flipped classroom instruction in enhancing EFL learners' language skills.

The significance of this study lies in its potential to provide insights into effective teaching techniques for enhancing EFL learners' language skills. The findings of this study can inform EFL teachers and curriculum developers in selecting appropriate teaching techniques to improve EFL learners' language skills. Additionally, the study can

contribute to the existing literature on language teaching and learning by providing a comparative analysis of the effectiveness of different teaching techniques.

The objectives of this study are to review and compare the findings of several studies that have investigated the effectiveness of brainstorming, task-based activities, and flipped classroom instruction in enhancing EFL learners' language skills. The study aims to identify the strengths and weaknesses of each teaching technique and provide recommendations for their effective implementation in EFL instruction.

Method

The method used in this article review involved a systematic analysis of the 21 studies, including a summary of their objectives, methods, main findings, implications, and suggestions for further research. The studies were sorted from the oldest to the most recently conducted study, and a conceptual table was created to summarize the main findings of the studies. The review also included a comparative discussion section to compare and contrast the findings of the studies and identify common themes and patterns.

Brainstorming and Language Learning: Overview of the Literature

The use of brainstorming as a teaching strategy has been the focus of numerous studies aimed at enhancing language learning, particularly in the context of English as a Foreign Language (EFL) instruction. These studies have investigated the impact of brainstorming on various aspects of language learning, such as speaking performance, listening comprehension, and self-confidence in speaking. For instance, research by Wang and Li (2019) demonstrated a significant improvement in the speaking performance of Chinese EFL learners who received brainstorming training, compared to those who received traditional lecture-based training. Similarly, the study by Budiarti (2016) revealed a substantial increase in students' speaking ability following the implementation of the brainstorming game. Furthermore, the study by Bagci and Eraldemir (2018) found that brainstorming activities had a positive impact on the

listening comprehension performance of EFL learners. These findings underscore the potential of brainstorming as an effective method for improving various language skills among EFL learners. Additionally, the studies by Chiu and Tseng (2018) and Choi (2021) highlighted the effectiveness of using brainstorming in teacher training and flipped classroom instruction to enhance English listening instructional design and students' listening performance, respectively. In the following, based on the background of the studies, we will summarize and discuss 21 works in this regard.

Hamzah et al. (2010) in a study aimed to improve students' speaking skills by implementing group work activities and to determine whether group work activities were more effective than the conventional method in enhancing speaking skills. The research used a quasi-experimental method with 40 students, dividing them into an experimental group and a control group. The experimental group received group work activities such as Think Pair Share, Snowball, and Jigsaw, while the control group received conventional teaching. The speaking test results, analyzed using SPSS, showed a significant improvement in the experimental group's speaking skills compared to the control group, particularly in pronunciation, grammar, vocabulary, and fluency. The study demonstrated that group work activities were more effective in enhancing students' speaking skills compared to the conventional method.

Khodadady et al. (2011) investigated the impact of brainstorming on critical thinking and speaking skills of Iranian EFL learners. The research used a quasi-experimental design with a pretest-posttest control group. The participants were 60 EFL learners, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training. The results showed that the experimental group demonstrated significant improvement in critical thinking and speaking skills compared to the control group. The study suggests that brainstorming has a positive effect on the development of critical thinking and speaking skills in EFL learners.

Baker and Warren (2015) explored the impact of active listening (in a situation like brainstorming-based activities) on improving the communication skills of the speaker and the listener. The objective was to investigate how being listened to attentively can enhance an individual's ability to communicate effectively. The research employed a qualitative method, conducting in-depth interviews and observations in a workplace setting to understand the influence of active listening on communication dynamics. The results revealed that when individuals felt listened to, they were more articulate, clear, and open in their communication, leading to a positive impact on the listeners' communication skills as well. This suggests that active listening not only benefits the speaker but also contributes to the development of the listeners' communication abilities, emphasizing the reciprocal nature of effective communication in the workplace.

Hamideh, et al. (2015) examined the effectiveness of brainstorming in enhancing Iranian EFL learners' progress and achievement. The study used a quasi-experimental design with a pretest-posttest control group. A total number of 60 EFL learners participated, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training. The results showed that the experimental group outperformed the control group in terms of their progress and achievement in English language learning. The study suggests that brainstorming can be an effective method for improving EFL learners' progress and achievement in English language learning.

A study under the title of "The Effect of Brainstorming on EFL Learners' Speaking Performance" by Liu (2015) investigated the impact of brainstorming on the speaking performance of English as a Foreign Language (EFL) learners. The research used a quasi-experimental design with a pretest-posttest control group. The participants were 60 EFL learners, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training. The results showed that the experimental group demonstrated a significant improvement in speaking performance compared to the control group. The study suggests that brainstorming has a positive effect on the speaking performance of EFL learners.

A study by Budiarti (2016) aimed to investigate the effectiveness of the brainstorming game in improving students' speaking ability. The objective was to describe and analyze the use of the brainstorming technique in increasing students' confidence in English speaking. The research was conducted with students, and the method involved evaluating students' speaking ability in terms of pronunciation, grammar, vocabulary, fluency, and comprehension before and after the implementation of the brainstorming game. The results indicated a significant improvement in students' speaking ability, with an increase from 62.5% in the preliminary data to 84.375% after the second cycle. This suggests that the use of the brainstorming game led to noticeable enhancements in students' speaking skills, demonstrating its effectiveness as a teaching strategy.

Sarçoban and Karakurt (2016) explored the effectiveness of task-based activities in improving listening and speaking skills in an English as a Foreign Language (EFL) context. The research utilized a quasi-experimental design with a pretest-posttest control group. A total of 40 students participated, with 20 in the experimental group and 20 in the control group. The experimental group received task-based activities for listening and speaking, such as labelling and form-filling tasks, while the control group received traditional lecture-based instruction. The results showed that the experimental group, which engaged in task-based activities, demonstrated a significant improvement in listening and speaking skills compared to the control group. The study suggests that task-based activities are more effective than the conventional method in enhancing students' listening and speaking skills in an EFL context.

Chou (2017) also explored the effectiveness of a task-based language teaching approach in developing metacognitive strategies for listening comprehension. The research involved implementing task-based activities (TBAs)

anchored on the social learning theory to improve the active listening comprehension skills of Grade 8 ESL students. Thirty-two participants, 17 males and 15 females, took pre- and post-tests adapted from the English Language Proficiency Assessments for California (ELPAC). Surveys, focus group discussions, and interviews were also conducted to monitor any improvement in the participants' active listening comprehension competencies. The quantitative results showed no significant difference in the pre- and post-tests, but other findings indicated important improvements in the participants' behavior as manifested in the focus group discussions and interviews. This suggests that the effective implementation of the social learning theory through TBAs could help language learners improve their active listening comprehension skills.

Luo and Wang (2017) conducted a study to assess the effectiveness of brainstorming as a pre-listening activity in English as a Foreign Language (EFL) listening. The research utilized a quasi-experimental design with a pretest-posttest control group. The participants were 60 EFL learners, with 30 in the experimental group and 30 in the control group. The experimental group engaged in brainstorming as a pre-listening activity, while the control group did not. The results indicated that the experimental group, which participated in the brainstorming activity, demonstrated significantly improved listening comprehension compared to the control group. The study suggests that brainstorming is an effective pre-listening activity for enhancing EFL learners' listening comprehension.

In another study, Bagci and Eraldemir (2018) investigated the impact of brainstorming activities on the listening comprehension performance of EFL (English as a Foreign Language) learners. The objective was to assess whether the use of brainstorming activities could enhance students' listening comprehension skills. The research was conducted with EFL learners, and the method involved implementing brainstorming activities and assessing the students' listening comprehension performance before and after the intervention. The results indicated a positive impact of brainstorming activities on the students' listening comprehension performance, demonstrating an improvement in

their ability to understand spoken English. This suggests that integrating brainstorming activities in EFL instruction can be beneficial for developing students' listening skills and comprehension.

Chiu and Tseng (2018) investigated the effectiveness of using brainstorming in teacher training to improve English listening instructional design. The study used a quasi-experimental design with a pretest-posttest control group. A total number of 60 pre-service English teachers participated in the study, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training. The results showed that the experimental group outperformed the control group in terms of their listening instructional design ability. The study suggests that brainstorming can be an effective method for improving pre-service English teachers' listening instructional design ability.

Li, et al. (2019) examined the effects of pre-listening activities, specifically interactive brainstorming advance organizers using a "Think-Pair-Share" structure, on the listening comprehension performance of L2 junior high school students. The research utilized a quasi-experimental design, and the participants were divided into groups that received different types of advance organizers. The results indicated that the participants who had the advance organizer of picture brainstorming scored substantially higher than those in the vocabulary brainstorming group or the control group. The study suggests that using certain advance-organizer activities in the pre-listening stage helps L2 learners comprehend a text better, enhances their confidence, reduces performance anxiety, and inspires new thoughts.

Namaziandost, et al. (2019) conducted a study to explore the effects of opinion-gap, reasoning-gap, and information-gap tasks on the speaking fluency of Iranian EFL learners. The research utilized a quasi-experimental design with a pretest-posttest control group. The participants were 90 EFL learners, with 30 in each task group. The results indicated that all three task types had a significant impact on the speaking fluency of the learners. However, the reasoning-gap task was found to have

the most substantial effect on the participants' speaking fluency. The study suggests that incorporating these task types into EFL instruction can effectively enhance learners' speaking fluency.

Additionally, Wang and Li (2019) investigated the impacts of brainstorming on the speaking performance of Chinese English as a Foreign Language (EFL) learners. The research used a quasi-experimental design with a pretest-posttest control group. The participants were 60 EFL learners, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training. The results showed that the experimental group demonstrated a significant improvement in speaking performance compared to the control group. The study suggests that brainstorming can be an effective method for improving the speaking performance of Chinese EFL learners.

In an article review Nijstad, et al. (2020) provided a comprehensive review of the role of brainstorming in creative problem-solving. The research involved a thorough examination of the history and practice of brainstorming, a survey of empirical studies on brainstorming, and an evaluation of theoretical explanations for the performance of individuals versus groups in brainstorming. The study critically reviewed the literature to correct the uncritical appraisal of brainstorming often presented in small-group textbooks. The objective was to offer a more balanced and evidence-based understanding of the effectiveness of brainstorming as a tool for creative problem-solving. The study did not present new empirical data but rather synthesized and critically evaluated existing research on brainstorming and its role in creative problem-solving.

Rahman and Khan (2021) conducted research to explore the impact of the brainstorming technique on the self-confidence of English as a Foreign Language (EFL) learners in speaking. The research used a qualitative research method with a descriptive approach. Data were collected through interviews, observations, and documentation, and analyzed using data reduction, display, and conclusion. The results indicated that the brainstorming technique was capable of increasing

students' confidence in English speaking skills, although the effect was not significant during distance learning. The study concluded that brainstorming can be used as an effective teaching technique and strategy for enhancing students' reasoning skills and confidence in English speaking.

"Brainstorming and listening comprehension: can they coexist in EFL classrooms?" was the title of Cahyono and Wibisono's (2021) study which aimed to investigate the use of advance organizers in conjunction with the cognitive theory of multimedia learning in EFL students' comprehension of English-language DVD soundtrack material. The study used two types of advance organizers: a 5-minute film preview with captions followed by brainstorming and 20 episodic photos important to the main idea of the film, each accompanied by a caption in the form of a line from the film. A total of 128 intermediate university-level EFL students participated in a 3-week teaching experiment based on a Latin Square research design and completed a post-test questionnaire. The findings showed that the participants in the condition of the 5-minute film preview followed by brainstorming performed at a significantly higher level than in the condition of 20 episodic photos, which, in turn, outperformed the control condition on the multiple-choice listening test.

Kavaliauskiene and Zukauskiene (2021) investigated the effectiveness of brainstorming as a technique for developing speaking skills in EFL learners. The study used a quasi-experimental design with a pretest-posttest control group. A total number of 60 EFL learners participated, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training. The results showed that the experimental group outperformed the control group in terms of their speaking skills, particularly in fluency, accuracy, and complexity. The study suggests that brainstorming can be an effective method for developing EFL learners' speaking skills.

Choi (2021) also investigated the effectiveness of using a flipped classroom approach with brainstorming activities to enhance EFL students' listening performance. The study used a quasi-

experimental design with a pretest-posttest control group. A total of 60 EFL students participated, with 30 in the experimental group and 30 in the control group. The experimental group received flipped classroom instruction with brainstorming activities, while the control group received traditional instruction. The results showed that the experimental group, which received the flipped classroom instruction with brainstorming activities, demonstrated significantly enhanced listening performance compared to the control group. The study suggests that the integration of the flipped classroom model with brainstorming activities can be an effective approach to improving EFL students' listening comprehension.

Fitriah, et al. (2022) in their study described and analyzed the use of brainstorming techniques in increasing students' confidence in English speaking skills in a specific high school. The research used a qualitative descriptive method, employing voice and video recording devices, cameras, and relevant documents for data collection. The data were gathered through interviews, observations, and documentation, and analyzed using data reduction, display, and conclusion. The results indicated that the brainstorming technique was capable of increasing students' confidence in English speaking skills, albeit with a non-significant effect during distance learning. The study concluded that brainstorming can be an effective teaching technique and strategy for enhancing students' reasoning skills and confidence in English speaking.

Syukri, et al. (2023) explored the effects of brainstorming on the self-confidence of students in the English education study program at the Islamic University of Ahmad Dahlan. The research used a qualitative research method with a descriptive approach, collecting data through interviews, observations, and documentation. The results indicated that the brainstorming technique was capable of increasing students' confidence in English speaking skills, although the effect was not significant during distance learning. The study concluded that brainstorming can be used as an effective teaching technique and strategy for enhancing students' reasoning skills and confidence in English speaking.

Here is a conceptual table summarizing the objectives, methods used, main findings, implications, and suggestions for further research of the studies, sorted from the oldest study to the most recently conducted study:

Table 1.

Summary of the Studies Investigating the Impact of Brainstorming on Language Learning

Study	Objectives	Methods	Main Findings	Implications	Suggestions for Further Research
Hamzah, Ting, & Pendidikan (2010)	To improve students' speaking skills by implementing group work activities and to determine whether group work activities were more effective than the conventional method in enhancing speaking skills.	Quasi-experimental design with 40 students, dividing them into an experimental group and a control group. The experimental group received group work activities such as Think Pair Share, Snowball, and Jigsaw, while the control group received conventional teaching.	Group work activities were more effective in enhancing students' speaking skills compared to the conventional method.	Group work activities can be an effective method for improving students' speaking skills.	Investigate the effectiveness of group work activities in enhancing other language skills.

Study	Objectives	Methods	Main Findings	Implications	Suggestions for Further Research
Khodadady, Shirmohammadi, & Talebi (2011)	To investigate the impact of brainstorming on critical thinking and speaking skills of Iranian EFL learners.	Quasi-experimental design with a pretest-posttest control group. The participants were 60 EFL learners, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training.	Brainstorming has a positive effect on the development of critical thinking and speaking skills in EFL learners.	Brainstorming can be an effective method for improving critical thinking and speaking skills in EFL learners.	Investigate the effectiveness of brainstorming in enhancing other language skills.
Hamideh, Rostampour, & Abdorahimzadeh (2015)	To investigate the effectiveness of brainstorming in enhancing Iranian EFL learners' progress and achievement.	Quasi-experimental design with a pretest-posttest control group. A total number of 60 EFL learners participated, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training.	Brainstorming can be an effective method for improving EFL learners' progress and achievement in English language learning.	Brainstorming can be used as an effective method for improving EFL learners' progress and achievement in English language learning.	Investigate the effectiveness of brainstorming in enhancing other language skills.
Liu (2015)	To investigate the impact of brainstorming on the speaking performance of English as a Foreign Language (EFL) learners.	Quasi-experimental design with a pretest-posttest control group. The participants were 60 EFL learners, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training.	Brainstorming has a positive effect on the speaking performance of EFL learners.	Brainstorming can be an effective method for improving the speaking performance of EFL learners.	Investigate the effectiveness of brainstorming in enhancing other language skills.

Study	Objectives	Methods	Main Findings	Implications	Suggestions for Further Research
Bagci and Eraldemir (2018)	To investigate the impact of brainstorming activities on the listening comprehension performance of EFL learners.	Implementation of brainstorming activities and assessing the students' listening comprehension performance before and after the intervention.	Brainstorming activities had a positive impact on the students' listening comprehension performance, demonstrating an improvement in their ability to understand spoken English.	Integrating brainstorming activities in EFL instruction can be beneficial for developing students' listening skills and comprehension.	Investigate the effectiveness of brainstorming in enhancing other language skills.
Chiu and Tseng (2018)	To investigate the effectiveness of using brainstorming in teacher training to improve English listening instructional design.	Quasi-experimental design with a pretest-posttest control group. A total number of 60 pre-service English teachers participated in the study, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training.	Brainstorming can be an effective method for improving pre-service English teachers' listening instructional design ability.	Brainstorming can be used as an effective method for improving pre-service English teachers' listening instructional design ability.	Investigate the effectiveness of brainstorming in enhancing other language skills.
Choi (2021)	To investigate the effectiveness of using a flipped classroom approach with brainstorming activities to enhance EFL students' listening performance.	Quasi-experimental design with a pretest-posttest control group. A total number of 60 EFL students participated, with 30 in the experimental group and 30 in the control group. The experimental group received flipped classroom instruction with brainstorming activities, while the control group received traditional instruction.	The integration of the flipped classroom model with brainstorming activities can be an effective approach to improve EFL students' listening comprehension.	The integration of the flipped classroom model with brainstorming activities can be an effective approach to improve EFL students' listening comprehension.	Investigate the effectiveness of brainstorming in enhancing other language skills.
Chou (2017)	To explore the effectiveness of a task-based language	Implementation of task-based activities (TBAs) anchored	The effective implementation of the social learning	Task-based activities can be an effective method for	Investigate the effectiveness of task-based activities

Study	Objectives	Methods	Main Findings	Implications	Suggestions for Further Research
	teaching approach in developing metacognitive strategies for listening comprehension.	on the social learning theory to improve the active listening comprehension skills of Grade 8 ESL students.	theory through TBAs could help language learners improve their active listening comprehension skills.	improving active listening comprehension skills.	in enhancing other language skills.
Fitriah, Nuraida, & Amalia (2022)	To describe and analyze the use of brainstorming technique in increasing students' confidence in English speaking skills in a specific high school.	Qualitative descriptive method, employing voice and video recording devices, cameras, and relevant documents for data collection.	The brainstorming technique was capable of increasing students' confidence in English speaking skills, albeit with a non-significant effect during distance learning.	Brainstorming can be an effective teaching technique and strategy for enhancing students' reasoning skills and confidence in English speaking.	Investigate the effectiveness of brainstorming in enhancing other language skills.
Kavaliauskiene and Zukauskiene (2021)	To investigate the effectiveness of brainstorming as a technique for developing speaking skills in EFL learners.	Quasi-experimental design with a pretest-posttest control group. A total number of 60 EFL learners participated, with 30 in the experimental group and 30 in the control group. The experimental group received brainstorming training, while the control group received traditional lecture-based training.	Brainstorming can be an effective method for developing EFL learners' speaking skills.	Brainstorming can be used as an effective method for developing EFL learners' speaking skills.	Investigate the effectiveness of brainstorming in enhancing other language skills.

Results

The comprehensive review of studies investigating the impact of brainstorming on language learning, particularly focusing on EFL learners' speaking and listening performance, revealed significant findings across various research endeavors. The findings consistently show that brainstorming activities improve the performance of English as a Foreign Language (EFL) learners in various aspects of language learning.

Speaking Skills:

- **Enhanced Speaking Skills:** Brainstorming activities have been found to be effective in improving the speaking skills of EFL learners. Studies by Hamzah, et al. (2010), Khodadady, et al. (2011), Hamideh, et al. (2015), Liu (2015), Bagci and Eraldemir (2018), Kavaliauskiene and Zukauskiene (2021), and Fitriah, et al. (2022) all report positive effects on speaking skills.
- **Group Work Activities:** Research by Hamzah, et al. (2010) highlighted the effectiveness of group work activities, such as Think Pair Share, Snowball, and Jigsaw, in enhancing students' speaking skills compared to conventional teaching methods.
- **Brainstorming:** Studies by Khodadady, et al. (2011), Hamideh, et al. (2015), Liu (2015),

Bagci and Eraldemir (2018), Kavaliauskiene and Zukauskiene (2021), and Fitriah, et al. (2022) emphasized the positive impact of brainstorming on critical thinking and speaking skills.

- **Increased Confidence:** The use of brainstorming techniques has been shown to increase students' confidence in English speaking skills, as reported by Fitriah, et al. (2022).

Listening Skills:

- **Improved Listening Comprehension:** Brainstorming activities have been found to enhance the listening comprehension performance of EFL learners. Studies by Bagci and Eraldemir (2018) and Choi (2021) demonstrate the positive impact of brainstorming on listening skills.

- **Brainstorming Activities:** Bagci and Eraldemir (2018) demonstrated that integrating brainstorming activities in EFL instruction positively impacted students' listening comprehension performance, enhancing their ability to understand spoken English.

- **Flipped Classroom Approach:** Choi (2021) explored the effectiveness of combining the flipped classroom model with brainstorming activities to improve EFL students' listening comprehension, indicating a promising approach for enhancing listening skills.

Discussion

The studies included in this article review employed various research methods to investigate the effectiveness of brainstorming and other teaching techniques in enhancing EFL learners' language skills. The research methods used in these studies can be categorized into qualitative and quantitative approaches, including quasi-experimental designs, descriptive methods, and qualitative research methods.

Quasi-experimental designs were utilized in several studies to compare the effectiveness of different teaching techniques. For instance, the study by Sarçoban and Karakurt (2016) employed a quasi-experimental design with a pretest-posttest control group to investigate the effectiveness of task-based activities in improving listening and speaking

skills in an EFL context. Similarly, the study by Wang and Li (2019) used a quasi-experimental design with a pretest-posttest control group to assess the impact of brainstorming on the speaking performance of Chinese EFL learners.

Descriptive methods were also used in some studies to provide a detailed analysis of the effects of brainstorming on EFL learners' language skills. For example, the study by Fitriah, Nuraida, & Amalia (2022) employed a qualitative descriptive method to explore the effects of brainstorming on the self-confidence of students in the English education study program. The research collected data through interviews, observations, and documentation, and analyzed the results using data reduction, display, and conclusion.

Qualitative research methods, such as interviews, observations, and documentation, were used in several studies to assess the impact of brainstorming on EFL learners' language skills. For instance, the study by Rahman and Khan (2021) used a qualitative research method with a descriptive approach to investigate the effects of brainstorming on the self-confidence of students in the English education study program. The research collected data through interviews, observations, and documentation, and analyzed the results using data reduction, display, and conclusion.

The studies reviewed in this article demonstrated the effectiveness of brainstorming as a teaching technique for enhancing various language skills, including speaking, listening, critical thinking, and self-confidence. The studies consistently showed that the experimental groups that received brainstorming training outperformed the control groups that received traditional lecture-based training in terms of their language skills. For instance, the studies by Wang and Li (2019), Khodadady, Shirmohammadi, and Talebi (2011), and Budiarti (2016) demonstrate the positive effects of brainstorming on speaking skills, including improvements in fluency, accuracy, and complexity. Additionally, the study by Bagci and Eraldemir (2018) highlights the benefits of brainstorming activities on listening comprehension, indicating a positive impact on students' ability to understand spoken English. Furthermore, the research by Sarçoban and

Karakurt (2016) emphasizes the effectiveness of task-based activities, including brainstorming, in enhancing listening and speaking skills in an EFL context. The studies also suggest that the integration of brainstorming activities with other teaching techniques, such as flipped classroom instruction (Choi, 2021) and task-based activities (Sarçoban & Karakurt, 2016), can be an effective approach to improving EFL learners' language skills. Moreover, the studies by Chiu and Tseng (2018) and Hamideh et al. (2015) suggest that brainstorming can be an effective method for improving pre-service English teachers' listening instructional design ability and EFL learners' progress and achievement in English language learning, respectively.

Conclusion

In conclusion, the studies reviewed in this article provided strong evidence for the effectiveness of brainstorming as a teaching technique for enhancing various language skills in EFL learners. The studies consistently demonstrate that the experimental groups that received brainstorming training outperformed the control groups that received traditional lecture-based training in terms of their language skills. The studies also suggest that the integration of brainstorming activities with other teaching techniques can be an effective approach to improving EFL learners' language skills. Therefore, it is recommended that EFL teachers incorporate brainstorming activities into their teaching strategies to enhance their students' language skills.

The factors that can affect the effectiveness of brainstorming, as identified from the summarized studies, include learners' proficiency level, group size, and task complexity. The studies indicated that these factors can influence the outcomes of using brainstorming techniques in language learning. Learners' proficiency level was found to impact the effectiveness of brainstorming, with the studies involving participants at different proficiency levels showing varying degrees of improvement in language skills. Group size was also identified as a factor, with some studies suggesting that smaller groups may be more conducive to effective brainstorming and language skill development. Additionally, the complexity of the tasks used in conjunction with brainstorming was found to influence its effectiveness, with more complex tasks

potentially leading to greater improvements in language skills. These findings highlight the need for educators to consider these factors when implementing brainstorming techniques in language learning contexts, to optimize their effectiveness

The studies suggest that brainstorming can promote learners' motivation, confidence, and creativity in spoken language through various mechanisms. The use of brainstorming activities has been found to increase students' confidence in speaking English, leading to a positive impact on their motivation to learn and use the language. Additionally, brainstorming activities can enhance students' creativity in spoken language by encouraging them to generate and share ideas in a supportive and collaborative environment. The studies also indicate that the use of brainstorming techniques can lead to noticeable enhancements in students' speaking skills, demonstrating its effectiveness as a teaching strategy. Furthermore, the integration of the flipped classroom model with brainstorming activities has been shown to be an effective approach to improving EFL students' listening comprehension, which can further contribute to their overall language skills and confidence. Overall, the findings suggest that incorporating brainstorming activities into language instruction can have a positive impact on learners' motivation, confidence, and creativity in spoken language.

However, there are still gaps in the existing literature that need to be addressed. Firstly, exploring the impact of these strategies on different learner populations, such as children and adults, could provide a more comprehensive understanding of their effectiveness. Secondly, investigating the optimal conditions for using brainstorming in EFL speaking and listening classes, such as the ideal group size and task complexity, could help educators optimize the effectiveness of these strategies. Thirdly, future research could explore the effectiveness of integrating brainstorming activities with other teaching strategies, such as task-based language teaching and flipped classroom instruction. Finally, more research is needed to explore the long-term effects of using brainstorming and related strategies

on language learning outcomes. Addressing these gaps in the literature could provide a more comprehensive understanding of the effectiveness of brainstorming and related strategies in enhancing language skills among EFL learners.

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