Research Article

Investigating the Effects of Brainstorming Technique on Iranian EFL Learners' Listening and Teachers' Attitudes towards This Technique

Ali Hamideh [1], Mostafa Zamanian *[2]

Department of English, Shiraz Branch, Islamic Azad University, Shiraz, Iran

* Corresponding author: **Mostafa Zamanian**; Email: **mustafazamanian@yahoo.com**

ARTICLE INFO

ABSTRACT

This research study utilized a mixed-methods approach, specifically a concurrent triangulation design, to examine the enhancement of listening proficiency among Iranian EFL learners and investigate EFL teachers' attitudes toward applying brainstorming techniques in EFL classrooms. The study involved 63 undergraduate male students studying at Naval Science and Technology University in Rasht, Iran, and 20 EFL teachers. The students were homogenized based on their English proficiency level and divided into experimental and control groups. All participants took a listening pretest, and then during 20 treatment sessions, the experimental group received brainstorming-based treatment while the control group received conventional treatment. A posttest was administered to all participants in both groups. The researchers conducted paired sample t-tests and one-way ANCOVA to examine the potential impacts of brainstorming techniques on the listening skills of EFL students. The results suggested that implementing brainstorming techniques in language learning processes can create a conducive environment for language learners to express their thoughts freely and practice the language authentically in the classroom. The research findings indicated that applying brainstorming techniques significantly enriched the listening ability of the students who received brainstorming-based treatment. The qualitative dimension of the study revealed that, according to the teachers' judgments, the brainstorming technique improves students' listening skills proficiency and develops teachers' attitudes toward teaching English. Based on the findings, the researchers recommend that English instructors utilize brainstorming techniques in their EFL classes. Additionally, the material designers are encouraged to design English language textbooks' contents based on brainstorming techniques.

Introduction

The rationale for this study is to address the issue of improving EFL/ESL learners' listening proficiency, which is a critical concern for EFL teachers. Listening proficiency refers to the extent to which learners can understand the meaning when someone speaks or expresses ideas. Listening involves various cognitive and mental activities that enable learners to grasp the main idea of speakers, requiring techniques that enhance contextual comprehension in an authentic situation (Richards, 1990). Listening skill is considered boring for teachers and learners if they concentrate only on language learning as the final product. To overcome this issue, the students should actively be involved in the spoken skills activities through brainstorming techniques to make the situation as interesting as a natural context through which they can subconsciously enhance their language skills and sub-skills. Using listening techniques may contribute to language learners becoming more effective listeners. An effective listening process can occur when the listener focuses on the content of a spoken language using some strategies. As listeners approach and manage their tasks, these strategies can be used as effective ways of sustaining language learners actively in the process of listening (Richards, 2008).

Most of the literature has concentrated on utilizing brainstorming for purposes in areas other than enhancing listening skills, such as academic achievements (Atsuwe & Musa, 2021), reflective thinking (Oniye, et al., 2020), creative thinking (AlMasri, 2019), writing (Abedianpour & Omidvari, 2018), etc. Therefore, studies regarding the use of brainstorming on listening comprehension are scarce (Li, et al., 2019; Khotimah, 2012). Traditional-method-based classes are difficult for teachers to handle and can be problematic and tedious for the L2 students; then, they do not enjoy their tasks. Most foreign language teachers, however, have been aware of learners' listening problems for a long time. In the literature on brainstorming, just a few of the research has explored the impact of brainstorming specifically on listening skills (Li, et al., 2019; Khotimah, 2012). As there have been only limited consistent results about the impact of brainstorming

on listening abilities, it is necessary to tackle other concerns in this study. As a result, conducting a more inclusive study was essential than the previous ones. Then the impact of the brainstorming techniques was examined to check if there was a development in the Iranian EFL learners' listening skills.

This study aimed to investigate the effectiveness of brainstorming techniques on improving learners' listening skills, as it is a well-known technique that has several strengths, such as encouraging communication, fostering creativity, and improving cognitive development. the study aimed also to determine whether acquiring listening skills through the application of brainstorming techniques is more beneficial than conventional classroom approaches. Furthermore, the study aimed to collect EFL teachers' attitudes toward applying brainstorming techniques in English language classrooms in Iran and investigate if brainstorming can motivate foreign language learners to actively listen and interact in class.

While other studies have examined the effectiveness of brainstorming in various skills, such as creative problem-solving, writing, speaking, or academic achievement this study specifically focuses on the impact of brainstorming on listening skills. The rationale for the study is supported by previous research that has explored the impact of brainstorming on listening skills, but there have been limited consistent results. Therefore, conducting a more inclusive study was necessary to examine the impact of the brainstorming technique on Iranian EFL learners' listening skills. The study utilizes a mixed-methods approach specifically a concurrent triangulation design to examine how brainstorming tactics can enhance the listening abilities of English language learners. It is important to note that while brainstorming was chosen as the focus of this particular study, other techniques like Six Thinking Hats or SCAMPER may also have their own merits and can be valuable in different educational contexts. The decision to use brainstorming does not imply that it is superior to other techniques, but rather that it was deemed appropriate for the specific research objectives and context of the study. This study contributes to the existing literature on the effectiveness of

brainstorming as a technique to improve language learning outcomes, specifically listening proficiency, in the Iranian EFL context. The study's mixed-methods approach, contextual relevance, and practical implications make it a valuable addition to the literature.

To accomplish the intended purposes of this study, it is essential to formulate the subsequent inquiries:

Q1. Is there any notable difference between the listening mean scores of the learners receiving teacher-led methods of teaching and the listening mean scores of the learners receiving brainstorming techniques?

Q2. How do EFL teachers in Iran perceive the use of brainstorming techniques in English language classrooms, and what is the impact of these strategies on improving learners' listening proficiency levels?

Literature Review
Theoretical Considerations

The language learning procedure includes listening first, then speaking skills, and then reading and writing skills. That is, in the early stages of language learning, English teachers should focus on developing spoken (listening and speaking) skills (Danielson & Hayden, 1963).

The learning and teaching situation can vary from class to class according to the type of strategy and task in the learning context. Researchers and teachers try to find and use the best operational strategies. A lot of researchers in recent times have conducted multiple investigations to explore whether there is any correlation between the techniques for learning and the development of language skills. For example, brainstorming is a useful technique for teaching foreign languages. There have been several investigations into how utilizing brainstorming techniques affects teaching the English language, like those of Ariana and Mirabela (2012) on teaching business concepts in EFL, Mohammad and Hussein (2013) on writing, Zarif and Mateen (2013) on learning outcomes during the teaching at the middle level, Li, et al. (2019) on listening, and Khotimah (2012) on listening skill.

Listening comprehension is a complex and unobservable process that involves simultaneous extraction and construction of meaning through various cognitive processes. This process can be further understood by considering the theoretical aspects and practical implications of listening comprehension (Cassone, et al. 2021). Listening as a crucial language skill is often overlooked compared to reading, writing, and speaking in foreign language classrooms. Despite its critical role in language performance, listening is sometimes referred to as the "Cinderella skill". Listening is an essential skill in language learning that involves multiple variables and complexities (Gilakjani & Sabouri, 2016). Top-down processing as the focus level of listening comprehension in this study is a cognitive process used in listening comprehension that involves utilizing prior knowledge, context, and expectations to understand spoken language. This process allows listeners to make predictions and inferences to aid comprehension (Dunlosky, et al. 2013).

Brainstorming is a technique used to generate creative ideas through group discussion and collaboration. During a brainstorming session, participants are encouraged to come up with as many solutions as possible without criticism of ideas. The evaluation of ideas should be done after the brainstorming session, as judgment and analysis at this stage can limit creativity and idea generation (Paulus & Nijstad, 2003; Puccio, et al., 2010) although, the evaluation of ideas is not significant in this study.

Osborn (1991), the first to organize group-thinking sessions, stated that "brainstorming means using the brain to storm a creative problem and do so in commando fashion, with each stormer attacking the same objective" (P.52). According to him, leadership in brainstorming sessions is crucial. The leader should be aware of brainstorming guidelines and how to begin and control the process. Osborn believed that group brainstorming is productive because it concentrates only on activating the group members' creative thinking, as there is no criticism and discouragement. He believed that creative thinking and idea generation are contagious. Moreover, he claimed that experiments have shown that free associations are more numerous in brainstorming sessions than when adults work and brainstorm alone. Furnhum and Yazdanpanahi (1995) believed that it is

essential for the leader of the brainstorming session to train the members on how to use the guidelines. Long (1983), Nunan (2004), and Ellis (2017) argued that brainstorming as a Task-Based Language Teaching (TBLT) technique could be applied to language teaching and learning through which EFL students can learn the language better as they interact with their peers when performing the activities. In this process, they focus more on the message content than the language form.

According to Baker and Westrup (2005), learners will participate more actively in learning programs as long as they learn in a fun situation. In other words, when students feel fun, enjoyment, and comfort during a teaching-learning program, the lesson material can be highly comprehended. For them, cognitive development is the result of content comprehension.

Based on these studies, brainstorming technique is a crucial factor that can motivate language learners to improve their listening skills. Teaching listening in EFL/ESL classrooms through brainstorming strategies and how it impacts the motivation of language learners became an increasingly concentrated issue for teacher educators, EFL/ESL teachers, and English language learners (Mohammad & Hussain, 2013).

One learning strategy that has received significant attention from researchers is brainstorming, with many investigations outlining its techniques and effects. It was demonstrated that brainstorming yields beneficial impacts such as improved problem-solving abilities (Bjerregaard & Compton, 2011), learning and retention of vocabulary (Soleimani &Taheri Mahmoodabadi, 2013), heightened writing motivation (Maghsoudi & Haririan, 2013; Mohammad & Hussein, 2013), stimulating idea generation (Rietzschel, et al., 2005) and increased enthusiasm for speaking and enhancing these abilities among students (Khodadady, et al., 2011). Put differently, their attention has been directed toward the significance of brainstorming in achieving academic objectives across various disciplines. Teachers attempt to provide chances for students to get inspired while they carry out educational tasks.

Osborn (1948), has suggested four guidelines to follow during a brainstorming session to reduce social inhibitions to help students verbalize many ideas:

1. Participants must ignore evaluation and judgment about their peers' ideas.
2. Unusual and strange ideas are desired.
3. As many verbal ideas as possible are desired.
4. Combining and improving ideas will lead to better, more, or other ideas.

According to Al-Bwli (2006), the following four stages must be followed in a brainstorming session for it be held successfully:

A. Stating a problem by the teacher and having a warm-up.
B. Problem formulation to check if further brainstorming is needed.
C. Performing brainstorming activities to produce as many ideas as possible to be generated.
D. Presenting ideas that should be evaluated and choosing the most appropriate and important ones.

Empirical Studies

A study used a specific method of brainstorming named Round Robin Method on listening skills conducted by Khotimah (2012). The researcher aimed to determine whether the round-robin method effectively improves tenth-grade students' listening skills. The study used a pre-test/intervention/post-test design on 120 students. The findings showed that the experimental group achieved significantly better outcomes than the control group by utilizing the brainstorming approach.

Another study conducted by Samimi and Sadeghi (2014) compared the use of individual brainstorming, group brainstorming, and no brainstorming on EFL learners' listening comprehension. Results showed that individual and group brainstorming activities significantly improved learners' listening comprehension in comparison to the control group. The study also found that group brainstorming was more effective than individual brainstorming.

Regarding the qualitative part of the study, we reviewed the related literature; Khodarahmi and Ghanizadeh (2015) reported that some teachers have neutral attitudes toward brainstorming. They tended to use multiple teaching strategies and assessed the effectiveness of each strategy based on the students' learning outcomes. In another study,

Erdogan and Arikan (2016) found that teachers have positive attitudes toward brainstorming as a listening technique. They believed that it can foster students' engagement and active participation in listening tasks, improve their attention, and enhance their critical thinking skills.

Another study conducted by Luo and Wang (2017) compared using brainstorming activities with a more traditional teacher-led approach to pre-listening activities. They found that the brainstorming group exhibited higher levels of listening comprehension performance.

It is important to note that not all studies have found positive effects of brainstorming on EFL learners' listening skills. A study conducted by Jafari and Anbari (2017) found that while brainstorming activities were more engaging for learners and led to higher levels of motivation, they did not significantly improve learners' listening comprehension beyond that of a traditional pre- and post-listening activity.

Furthermore, some studies have explored the use of brainstorming as a post-listening activity. For example, in a study conducted by Karahan and Baran (2017), learners were asked to brainstorm and discuss the key points of the listening material in groups. Results showed an increase in the number of ideas generated and an increase in comprehension levels. While Akbari and Rahmati (2018) found that some teachers have negative attitudes toward brainstorming. They believed that it can be chaotic and unproductive if not structured properly, and preferred more structured and teacher-centered approaches to teaching listening skills.

Several other studies explored the use of brainstorming as a pre-listening activity to improve EFL learners' listening comprehension. One study conducted by Bagci and Eraldemir (2018) involved using brainstorming activities before listening tasks and found that listening performance significantly improved in comparison to a control group under normal conditions that did not engage in brainstorming tasks.

Brainstorming has also been incorporated into teacher training programs to improve the quality of listening instruction. Chiu and Tseng (2018) reported on a teacher training program where brainstorming was used to support the development of a coherent lesson plan that incorporated listening comprehension strategies that were relevant to learners' needs. The study found that the brainstorming approach significantly improved the quality of the lesson plans developed.

In addition to improving listening comprehension, brainstorming techniques have been shown to enhance other aspects of EFL learners' listening skills, such as note-taking and vocabulary acquisition. In a study conducted by Jafari et al. (2018), brainstorming activities were used to assist learners in taking notes while listening to a lecture. The study found that learners who engaged in brainstorming activities produced significantly more detailed and accurate notes than those who did not. Similarly, a study conducted by Ebrahimi and Abbasian (2018) used brainstorming sessions to enhance learners' vocabulary acquisition through listening tasks. Results showed that the brainstorming approach significantly improved learners' vocabulary knowledge compared to the control group.

Another study conducted by Kurniawati (2019) used brainstorming activities after a listening task and found that it helped learners understand the listening material by promoting reflection and internalization of the content. Regarding the effects on creative thinking, AlMasri (2019) conducted a study to analyze how applying brainstorming strategies can enhance the creative thinking aptitude and language proficiency of learners. The sample comprised (168) students. The researcher used a self-developed test for EFL learners' creative thinking and a self-developed achievement test of the target language consisting of 30 multiple-choice questions to be used amongst a sample of 168 EFL learners. He concluded that there was no notable difference between the mean scores of the experimental group and the control group regarding the level of ($\alpha \leq 0.05$) during the pretest and posttest of creative thinking. He also concluded that there was no remarkable disparity ($\alpha \leq 0.05$) in any aspects of thinking skills (such as fluency, flexibility, and originality) between the two groups in both the pre-and post-tests of creative thinking. Additionally, the findings indicated a notable distinction in the mean scores of the English language proficiency test between the two groups ($\alpha \leq 0.05$).

In a study with a very close purpose by Li, et al. (2019), they investigated the impacts of pre-listening activities, specifically organizers for brainstorming that involve interaction that used the "Think-Pair-Share" structure, on L2 high school students' listening comprehension performance. The study's findings revealed that those who used an advanced visual brainstorming tool scored notably better than both the vocabulary brainstorming group and the control group. They concluded that using some specific organizing activities in the pre-listening stage using advanced brainstorming organizers as a teaching strategy contributes to L2 learners activating their background knowledge, boosting exam confidence, decreasing performance anxiety, relating the text to their personal experiences, and generating new ideas, ultimately aiding in their comprehension of the text as the L2 learners agree with the positive effects of these activities.

In addition, Oniye, et al. (2020) conducted a study to examine if the educational brainstorming technique has any impact on pre-service teachers' reflective thinking skills in a university in Ilorin metropolis. The study had a pre-test and post-test design, and though it lacked a control group, it was quasi-experimental. They applied Demir's Reflective Thinking Skills Scale to collect data. The study participants were exposed to the given treatment (brainstorming technique). Consequently, a posttest was administered to the students. The independent sample t-test and the paired test revealed that brainstorming instructional strategy can positively affect the pre-service teachers' reflective thinking in Ilorin metropolis.

Regarding the brainstorming impacts on academic achievement, Atsuwe and Musa (2021) designed research to explore the impact of brainstorming techniques on the academic achievement of students in physics in senior secondary schools. The study was carried out using a quasi-experimental design. The brainstorming technique was applied in an intact class as the experimental group. Their findings showed that the experimental class based on the brainstorming technique outperformed the control one in their academic performance.

Additionally, a study conducted by Cahyono and Wibisono (2021) explored how brainstorming impacts the listening comprehension abilities of those learning English through the implementation of a quasi-experimental design. They found that EFL learners who participated in brainstorming activities demonstrated significant improvements in their listening comprehension skills compared to those who did not participate in the activities.

In a study conducted by Choi (2021), the effects of flipped classroom instruction with brainstorming activities were examined on EFL students' listening skills. The study found that the flipped classroom instruction, which incorporated brainstorming activities, significantly improved the students' listening comprehension skills, compared to traditional classroom instruction.

Similarly, Kim and Lee (2022) investigated how cooperative brainstorming impacted the listening ability of English language students. The study found that cooperative brainstorming activities promoted active engagement and collaboration, leading to significant improvements in the learners' listening skills.

In conclusion, the reviewed literature suggests that brainstorming techniques can be an effective way to enhance EFL learners' listening skills. Both pre-and post-listening activities using brainstorming, as well as teacher training programs incorporating brainstorming, have shown that listening comprehension, note-taking, and vocabulary acquisition are positively impacted. However, the effectiveness of brainstorming may depend on the specific context and learners' needs and characteristics. Further research is needed to better understand the conditions under which brainstorming techniques are most effective for improving EFL learners' listening skills. In other words, the reviewed literature highlights the potential of brainstorming techniques to enhance EFL learners' listening skills. Both pre-and post-listening activities and teacher training programs that use brainstorming show positive outcomes regarding the improvement of listening comprehension and quality of listening instruction.

Methodology
Design
In this research, the investigators used a concurrent triangulation design to collect data and examined how brainstorming techniques affected the listening abilities of Iranian students learning

English as a foreign language on the one hand, and what were the teachers' attitudes toward these techniques on the other hand. The concurrent triangulation design was selected because it offered researchers the opportunity to integrate qualitative and quantitative data, providing a more comprehensive and robust understanding of the research questions. It allows for triangulation and complementarity, and enhances the validity of the findings. Additionally, it is efficient in terms of time and helps define relationships among variables more accurately. This mixed-methods study relied primarily on quantitative data as well as a semi-structured interview to support the findings of the qualitative part of the research and investigate if EFL learners become better language listeners. They selected the participants from a university in Rasht, Iran, using a convenience sampling method (a self-selected sample of participants).

Participants

The investigators determined the population of undergraduate male cadets from a university in Rasht to draw a sample. They developed a list including all the members of the population and assigned a unique random number to each member of the population. Then they used a random selection system to randomly select 70 individuals from the population using the assigned random numbers. To homogenize the participants, after administering a placement test, 7 students with very high and very low scores were deleted. In total, 63 participants from the population of Iranian students at Naval Science and Technology University in Rasht, Gilan, participated in this study. The participants' age ranged from 20 to 24. Their L1 was Farsi and as cadets, their major was not English language. The cadets at this university should pass about 400 hours of English courses, emphasizing listening and speaking skills. The investigators randomly divided the participants into group A, the experimental group (n=31), in which the teacher purposely used brainstorming techniques in the spoken tasks, and group B, the control group (n=32), in which the teacher applied noninteractive or conventional teaching methods.

In addition, for the qualitative part of the study, twenty English language teachers were selected to be interviewed to elicit their attitudes on how using

brainstorming techniques can be beneficial in EFL classes. The teachers selected had experience in applying brainstorming techniques in their language classes. This ensured that they were knowledgeable about the topic and could provide valuable insights into the benefits of using brainstorming techniques in EFL classes. The authors selected teachers who were available and willing to participate in the study ensuring that the sample was feasible and that the authors could collect the necessary data for the study.

Instrumentation

The researchers administered a multiple-choice placement test, including 100 items, prepared by Pearson Longman ELT to select participants with nearly the same proficiency levels and to evaluate if they were homogeneous. Furthermore, the listening pre-and post-tests designed by Cambridge University (UCLES) were administered to the participants. The listening comprehension test included 25 filling-in-the-blanks and multiple-choice items. The psychometric properties, including reliability, validity, and practicality, of the Pearson Longman ELT Placement Test and the listening tests designed by Cambridge University have been established through rigorous testing and validation procedures. These instruments are widely recognized and used in the field of English language teaching and assessment, providing reliable and valid measures of language proficiency. The Pearson Longman ELT Placement Test was completed within one hour. The listening test designed by Cambridge University was completed within 40 minutes.

Moreover, a semi-structured interview was also administered to twenty English language teachers to collect their main ideas and attitudes towards using and the effectiveness of brainstorming strategies in L2 classes. To develop the semi-structured interview, taking into account the objectives of the study and the research questions as well as the flexibility feature of the interview, the authors identified specific topics or areas of interest that would be explored during the interview. The questions were designed to elicit detailed and rich responses from the participants, allowing for in-depth exploration of the research topics. Before

conducting the actual interview, the investigators conducted a pilot test with a small sample of participants to identify any potential issues or areas for improvement in the interview questions or structure. Feedback from the pilot test participants was used to refine and finalize the interview guide.

Procedure

The researchers conducted a study to investigate the effectiveness of different instructional treatments in enhancing the spoken skills of Iranian English as a Foreign Language (EFL) students. They used both quantitative and qualitative methods and randomly selected two classes from Naval Science and Technology University. The study employed a quasi-experimental design, with one group receiving instruction through brainstorming techniques (experimental group) and the other group following conventional teaching methods (control group).

Before the intervention, the participants' proficiency level was assessed through a placement test and a pretest of listening. The researchers administered a pretest and posttest, which consisted of a standard multiple-choice test, to evaluate the students' listening proficiency at the beginning and end of the course.

During the intervention phase, which lasted for three months, the same EFL teacher implemented the instructional program and evaluated the learners. Before the listening activity, the teacher introduced the topic and provided any necessary background information. The teacher then divided the class into small groups. Each group then brainstormed ideas related to the topic of the listening passage using their assigned technique. After the brainstorming session, the teacher led the class discussion to share and evaluate the ideas generated by each group. The listening passage was then played, and students listened for information related to the ideas generated during the brainstorming session. After the listening activity, the teacher led a follow-up discussion to evaluate the effectiveness of the brainstorming techniques used and to reflect on the listening comprehension activity. In the experimental group, students were instructed to generate various ideas on the subject matter without criticism or appraisal. They were encouraged to think creatively, merge and refine their ideas. The teacher listed all the ideas on the board, grouped similar ones, evaluated each one individually, and removed irrelevant ones. The objective was to encourage participants to speak, rather than focus on presenting high-quality ideas. On the other hand, the control group received conventional instruction without any brainstorming activities. They discussed the topic in pairs and groups for 15 minutes before listening to the audio and answering follow-up questions as a class.

After the intervention, the participants' listening abilities were evaluated through a posttest. Additionally, a semi-structured interview was conducted with 20 EFL instructors to gather their attitudes toward using brainstorming and the positive effects of brainstorming strategies in EFL classes.

Data analysis

The researchers used a combination of quantitative and qualitative methods to investigate the effectiveness of brainstorming techniques in enhancing the listening skills of Iranian EFL students. They collected pretest and post-test scores and used SPSS software to analyze the data using statistical tools such as mean, standard deviation, and t-test. Descriptive and inferential statistics were used to determine the significance of the results. The researchers also conducted a semi-structured interview with teachers to investigate their attitudes toward using brainstorming strategies in L2 classes. The interview responses were analyzed through basic content analysis to obtain the teachers' subjective responses about brainstorming.

The researchers used this type of content analysis as a technique to analyze the subjective responses provided by teachers during interviews regarding their thoughts and opinions about brainstorming. This allowed for a structured and systematic exploration of the qualitative data, enabling the researchers to draw meaningful insights and conclusions from the teachers' responses.

The procedures for the basic content analysis used in this study were:
1. Defining the research question and objectives.
2. Collecting data through semi-structured interviews with teachers.
3. Transcribing the interviews.

4. Reading and re-reading the transcripts to identify themes and patterns.

5. Developing a coding scheme to categorize the data.

6. Applying the coding scheme to the transcripts.

7. Analyzing the data to identify the frequency and distribution of codes.

8. Interpreting the data to draw conclusions about the teachers' attitudes toward using brainstorming strategies in L2 classes.

Results

Using SPSS software, the researchers analyzed the pre-test and post-test scores and summarized the obtained results in Table 1 and 2, which includes mean scores, standard deviations, and standard mean error; as well Table 3 can be referred to in which the t-test analysis shows that the participants' homogeneity was confirmed at the (.05) significance level. As shown in Table 3, the significant value for listening ability is equal to

0.815, which is above the confidence level of 0.05. Therefore, it can be inferred that there is no notable variance between the mean pretest listening scores of the two groups, namely the control and the experimental groups. As a result, it affirms that the two given groups were homogeneous in their listening skills before the implementation of the intervention.

The results related to the first research question

To respond to the first inquiry of this study, "Is there a significant difference between the listening mean scores of the language learners receiving traditional methods of teaching and the listening mean scores of the students receiving brainstorming strategies", let us refer to the data presented in Table 1. The table presents the statistical values of mean, standard deviation, maximum and minimum, and the number of participants for both pre-test and post-test variables of brainstorming-based training.

Table 1.
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
pre-test of listening for CG	32	11.00	15.50	13.27	1.28
post-test of listening for CG	32	10.50	16.75	14.36	1.51
pre-test of listening for EG	31	11.00	16.00	13.35	1.45
post-test of listening for EG	31	14.00	18.50	16.75	1.31
Valid N (listwise)	31				

Table 1 shows that the control group was comprised of 32 participants, while the experimental group had 31 students indicating that there was no significant difference in the mean scores of the listening pre-tests between the two groups. However, the results of the posttests of listening show that the groups' mean scores are significantly different. This means that the scores of the control group students on the listening posttest (i.e. 14.36) were significantly different from those of the experimental group students (i.e. 16.75). As a result, it can be concluded that using brainstorming techniques improved learners' listening proficiency levels. From the obtained results and the analysis

mentioned above, it is reasonable to conclude that the brainstorming-based technique as the independent variable significantly affects the students' listening proficiency level.

Table 2 indicates that the listening skills' mean score of the control group is 13.27, while the experimental group's mean score is 13.35. This suggests that both the control and experimental groups' pre-tests mean scores are not significantly different. As depicted in Table 2, the posttest mean score of the experimental group for listening is 16.75, while for the control group, the value is 14.36 and then significantly lower.

Table 2.
Group Statistics

	CG and EG	N	Mean	Std. Deviation	Std. Error Mean
pre-tests of both groups for List	CG	32	13.27	1.28	.22
	EG	31	13.35	1.45	.26
post-tests of both groups for List	CG	32	14.36	1.51	.26
	EG	31	16.75	1.31	.23

To answer the first question, Table 3 is also presented as an independent sample t-test. Based on the information presented in this table for calculation of the sample t-test as well as the findings of this study, the 2-tailed statistic value, for both groups, is less than the alpha level of .05.

Table 3.
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
pre-tests of both groups for List.	Equal variances assumed	1.076	.30	-.23	61	.81**	-.08	.34	-.77	.61
	Equal variances not assumed			-.23	59.48	.81	-.08	.34	-.77	.61
post-tests of both groups for List.	Equal variances assumed	.59	.44	-6.67	61	.00**	-2.39	.35	-3.10	-1.67
	Equal variances not assumed			-6.69	60.23	.00	-2.39	.35	-3.10	-1.67

**$P<0.05$

This reflects that the participants of the two given groups (the control and the experimental) concerning their achievement in the listening posttests are different. As a result, it can be inferred that brainstorming has a noteworthy impact on the listening ability of Iranian EFL learners.

As depicted in Table 3, the pre-test scores' mean and standard deviation values for students' listening skills performance in the control group are 13.27 and 1.28, respectively. In this table, the mean value and standard deviation of the post-test scores in the control group for the student's listening skills are 14.36 and 1.51, respectively. The results reveal that there is no noteworthy distinction between the pretest and post-test scores of the control group regarding the learners' listening ability. However, the mean score for the listening aptitude of the experimental group students' pretest is lower than the posttest mean score for their listening performance. While the pretest mean score of the listening skill for the experimental trainees (i.e., 13.35) and their posttest mean score (i.e. 16.75) are significantly different. As depicted in Table 3, the significant value is 0.000 with a p-value ≤0.05. Consequently, the experimental group's listening proficiency level showed a notable change when comparing their pre-test and post-test scores.

Moreover, the two-tailed test value for the experimental group's pretest and posttest was lower than the alpha level of .05. Hence, it reveals that the

listening ability of this group from the pretest to the posttest is significantly developed. Thus, the tables confirm that the implementation of brainstorming strategies will lead to a statistically different value between the experimental group's pre-and post-test mean scores for listening ability. Table 4 displays the correlation between pre-and post-tests of the control and experimental groups.

Table 4.
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pre-test of listening for CG & post-test of listening for CG	32	.85	.00
Pair 2	pre-test of listening for EG & post-test of listening for EG	31	.80	.00

Considering the scores of the pre-and post-test of the two given groups, the attained statistics were analyzed. According to Table 4, the sig. level computed as 0.000. This score in the level of significant difference is quite lower than .05. It means that using brainstorming techniques positively impacted the students' listening ability. Table 4 shows that the given scores by raters are highly correlated and reliable.

The paired t-test was utilized in Table 5 to assess the listening scores of the participants, comparing the pre-test of the control group with its post-test and comparing the pre-test of the experimental group with its post-test. This table presents the adjusted means for dependent variables. The table indicates that the paired t-test results reveal a significant difference between the mean scores of the pre-test and post-test at the 0.000 level. At the same time, it is not significantly different for the control group. Consequently, the experimental group showed a noteworthy enhancement in the learners' listening skills. That is, the distinction between the pre-test and post-test scores of the experimental group is significantly apparent, i.e. (t (30) = -21.83 for listening, p=.00< .05).

Table 5.
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre-test of listening for CG - post-test of listening for CG	-1.09	.80	.14	-1.38	-.80	-7.73	31	.00**
Pair 2	pre-test of listening for EG - post-test of listening for EG	-3.40	.86	.15	-3.72	-3.08	-21.83	30	.00**

**P<0.05

A one-way between-groups ANCOVA as shown in Table 6 was conducted to compare the effectiveness of two different interventions designed to enhance the listening skills performance of the participants. The independent variable was the type of intervention (brainstorming technique), and the dependent variable consisted of scores on the listening skills administered after the intervention was completed. Participants' scores on the pre-intervention administration of the listening skills were used as the covariate in this analysis.

Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variance, homogeneity of regressions slopes, and reliable measurement of the covariate. Table 6 provides

information on the statistical significance of the main effects of groups and listening pretests, as well as their interaction effect. The effect size (Partial Eta Squared) for the main effect of groups is 0.858, indicating a large effect. The effect size for the main effect of listening pretests is 0.931, also indicating a large effect. However, the interaction effect is not statistically significant (p = 0.373), and its effect size is small (Partial Eta Squared = 0.099). Overall, the model is statistically significant (p < 0.001), and it explains a large proportion of the variance in the dependent variable (Partial Eta Squared = 0.993).

Table 6.

Tests of Between-Subjects Effects

Dependent Variable: post-tests of both groups for List

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	10162.903	1	10162.903	2638.443	.000	.993
	Error	71.505	18.564	3.852[a]			
Groups	Hypothesis	59.456	1	59.456	156.093	.000	.858
	Error	9.813	25.762	.381[b]			
LisPretests	Hypothesis	83.635	17	4.920	14.478	.000	.931
	Error	6.246	18.382	.340[c]			
Groups * LisPretests	Hypothesis	2.806	10	.281	.373	.950	.099
	Error	25.571	34	.752[d]			

a. .749 MS(LisPretests) + .045 MS(Groups * LisPretests) + .206 MS(Error)

b. .787 MS(Groups * LisPretests) + .213 MS(Error)

c. .874 MS(Groups * LisPretests) + .126 MS(Error)

d. MS(Error)

Figure 1 deals with a dataset that contains pre-test and post-test scores for two classes, EG (Experimental Group) and CG (Control Group). The regression line equations for each class are:

1. EG Class Line: $yEG=7.04+0.73x$

2. CG Class Line: $yCG=1.01+1.01x$

Where:

- y represents the post-test score.
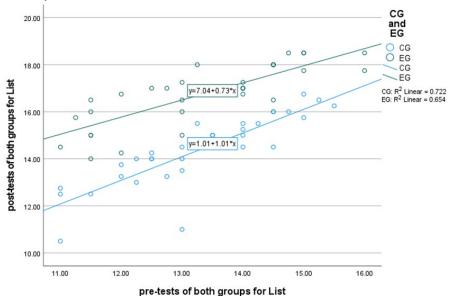- x represents the pre-test score.

Figure 1. *A dataset containing pre-test and post-test scores for EG and CG*

The equations represent linear regression lines that estimate the relationship between pre-test and post-test scores for each class. The coefficients in the equations have specific interpretations. For the EG class, the intercept is 7.04, and the slope is 0.73. This means that for every one-unit increase in the pre-test score (*x*), the estimated post-test score (*y*) increases by 0.73, and the intercept suggests that when the pre-test score is 0, the estimated post-test score is 7.04. On the other hand, for the CG class, the intercept is 1.01, and the slope is 1.01. This means that for every one-unit increase in the pre-test score (*x*), the estimated post-test score (*y*) also increases by 1.01, and the intercept suggests that when the pre-test score is 0, the estimated post-test score is 1.01.

From this information, one can make several observations:

1. **Initial Post-Test Scores:** The EG class starts with a higher estimated post-test score (intercept of 7.04) compared to the CG class (intercept of 1.01). This suggests that the EG class had higher post-test scores even before the pre-test scores were taken into account.

2. **Effect of Pre-Test Scores:** The slopes of the regression lines indicate how much the post-test scores change for each unit increase in pre-test scores. The EG class has a smaller slope (0.73) compared to the CG class (1.01). This means that the increase in post-test scores for the EG class is less steep compared to the CG class for the same increase in pre-test scores.

3. **Differences in Improvement:** The difference in slopes suggests that the control group's post-test scores tend to improve more dramatically in relation to their pre-test scores compared to the experimental group.

4. **Baseline and Treatment Effect:** The intercept values indicate the baseline post-test scores when pre-test scores are 0. The larger intercept for the EG class might indicate that the experimental treatment has a positive impact even before considering the pre-test scores.

5. **Comparative Analysis:** To draw more concrete conclusions, it would be useful to perform statistical tests to determine if the differences in slopes or intercepts between the two groups are statistically significant. This would help validate whether the differences observed are likely due to chance or actual effects of the treatment.

To sum up, as shown in the above tables the investigators compared the performance of the two given groups in this study with themselves using the mean scores of pre-and posttests of two given groups at the beginning and end of the program. Furthermore, they assessed the performance level of the experimental group by comparing it to the performance level of the control group by analyzing their pre-and post-tests. The results of these tables reveal that the two groups performed differently on their posttests. It can be concluded that there is a difference between the mean score of the listening pre-test and post-test in the experimental group. To put it differently, the learners in the experimental group performed better in comparison to the control group participants, based on their pretest and the posttest results at the end of the training course. This leads us to conclude that the improvement in the listening proficiency level was the result of implementing the brainstorming tactics in the experimental group.

The results related to the second research question

The researchers conducted a semi-structured interview with 20 EFL teachers to gather their evaluations and attitudes toward the utilization of brainstorming strategies in improving the listening performance of EFL learners. The purpose was to support the quantitative data interpretation with qualitative insights.

The majority of the teachers believed that brainstorming contributes to the readiness of EFL students for their tasks and helps them think about class topics in different and useful ways. They viewed the instructor's role in brainstorming sessions as a facilitator who encourages idea generation and promotes group learning. The teachers stated that learners enthusiastically preferred and enjoyed using brainstorming strategies. Many teachers considered brainstorming as an effective technique for improving listening skills. They believed that it helps students focus on the topic, generate ideas collectively, and enhance comprehension and processing of listening material. However, some teachers had a more neutral stance, using brainstorming as one of several teaching strategies depending on specific learning

objectives and student groups. A few teachers expressed doubts about the relevance of brainstorming, citing concerns about time consumption and effectiveness if not properly structured and guided. They also preferred more individualistic or structured approaches to teaching listening skills.

The most frequent opinions of the teachers about the use of brainstorming collected through semi-structured interviews are reported as follows:

1. EFL learners have a better chance to receive much information they need from group members and peers through listening activities.
2. Students are more successful in their careers.
3. Students have more positive and productive relationships with their teachers and classmates.
4. Students can work more independently from their teacher.
5. An important factor for L2 learners to develop listening is to listen a lot in the target language in an authentic situation.
6. It seems brainstorming-based sessions provide an easy situation to get the students to interact a lot in the target language in the class.
7. The learners are motivated to retrieve their grammar knowledge when listening.
8. The learners are motivated to retrieve their vocabulary knowledge when listening.
9. In brainstorming sessions, it is more convenient for the teachers to facilitate a communicative context for learners in the classroom; as a result, the teachers consider themselves successful in teaching listening.
10. Teachers can use all the opportunities in teaching time to motivate the students to listen to their teachers and classmates every minute.
11. An authentic context will be provided for the learners to use their grammar and vocabulary knowledge, giving them useful hints to improve their listening skills.
12. As active listeners, the students become autonomous learners as they are exposed to the socio-cultural knowledge of the L2.
13. Most of the teachers believed that the students were quite successful in improving their listening.
14. Most of them, using brainstorming strategies, considered themselves successful in teaching listening.

15. They believed that in brainstorming-based sessions, language learners' mistakes are tolerated by their peers.
16. Using brainstorming techniques is very useful and motivates language learners because they consider the classroom atmosphere something different and funny.
17. Almost all teachers believed that EFL learners with a lower level of L2 would be unable to improve their spoken skills from brainstorming techniques in their language classes.

The qualitatively constructed attitudes of teachers indicated that using brainstorming strategies would give the students higher cognitive and motivational properties that could engage and enable them to learn their listening skills. They also believed that brainstorming strategies would create a dynamic process that could result in better listening competence of the students and then develop the quality of their performance. However, the teachers also revealed that EFL learners who lack the background knowledge of listening skills and cannot perform at a minimum L2 proficiency level will not benefit from brainstorming sessions.

Discussion

This study investigated how brainstorming tactics can enhance the listening skills of Iranian English learners. The investigation used both quantitative and qualitative measures to explore the impacts of the tactics. The findings demonstrated that the experimental group, who utilized brainstorming tactics, showed better performance compared to the control group. The outcomes of this investigation aligned with results of research on how brainstorming techniques impact the listening skills of learners studying English as a foreign language (Li, Wu & Lin, 2019; Bagic & Eraldemir, 2018; Luo & Wang, 2017; Karahan & Braran, 2017; Kurniawati, 2019; Chiu & Tseng, 2018; Samimi & Sadeghi, 2014; Kim & Lee, 2022; Cahyono & Wibisono, 2021; and Atsuwe & Musa, 2021). The results were also consistent with previous studies that investigated the impact of brainstorming on other aspects of language learning, such as writing tasks (Rao, 2007) and learning outcomes (Zarif & Mateen, 2013).

The findings of this research are supported by the theoretical framework of social and cognitive

effects. The social effect theory emphasizes the importance of social interaction in language learning. It suggests that engaging in group discussions and collaborative activities can improve learning outcomes. Language acquisition is seen as a process that takes place in the micro-moments of social interaction. This perspective highlights the role of social relationships and interpersonal activities in language learning (Maghsoudi & Golshan, 2017). On the other hand, the cognitive effect theory focuses on the role of active discussions and problem-solving activities in enhancing critical thinking and problem-solving skills. Engaging learners in these activities can contribute to their language-learning process. Cooperative learning, which promotes collaboration and positive interdependence among learners, has been found to enhance motivation, learning strategy utilization, and grammar achievement in language learners (Rao, 2007). The study's outcomes support the social effect theory, which suggests that group discussions and collaboration among learners improve learning outcomes. The study's outcomes also support the cognitive effect theory, which posits that engaging learners in active discussions and problem-solving activities enhance their critical thinking and problem-solving skills. The experimental group, which engaged in brainstorming activities, outperformed the control group in their listening performance level. This suggests that brainstorming strategies can facilitate group discussions and collaboration, leading to improved learning outcomes. This study's outcomes were also consistent with both theories as the individuals in the experimental group outperformed those in the control group in their listening performance level.

Moreover, the study showed that the use of brainstorming techniques enhances the cognitive and motivational properties of learners, as reported by the interviewed teachers. The teachers' attitudes towards the effectiveness of using brainstorming techniques in developing the listening proficiency level of the language learners were generally positive. However, the result of the study was inconsistent with Jafari and Anbari's (2017) study.

In the qualitative part of the study, the qualitatively constructed attitudes of the teachers indicated that using the brainstorming technique will provide the students with higher levels of cognitive and motivational properties that could engage and enable them more in their listening skills. Most teachers believed that following the ideas introduced by the learners, monitoring their performances, and brainstorming techniques enabled the students to perform more effectively in their listening proficiency. The teachers stated that according to their experiences, class members were more willing to listen to their peers in brainstorming-based discussions. They believed that learners, even the shy ones, had more motivation to participate in the discussion; at the very least, they enthusiastically listened to what their peers said. Thus, the weak performance of some students in speaking skills does not mean that the brainstorming-based discussion did not positively impact the other skills.

Concerning the teachers' attitudes towards the effectiveness of the implementation of brainstorming techniques in enhancing the listening ability of the language learners, it was concluded that most teachers believed that brainstorming is a beneficial technique for enhancing the EFL learners' spoken skills.

In conclusion, the study's findings provide strong theoretical evidence that the brainstorming technique is an effective technique for enhancing the spoken skills of language students. The study's findings are consistent with the theoretical framework of social and cognitive effects, providing further evidence for the effectiveness of collaborative and active learning strategies in improving learning outcomes. This study contributes to the existing body of research on language learning strategies and their impact on proficiency development. By investigating the effects of brainstorming strategies specifically on listening skills, the study provides valuable insights into the potential benefits of this approach. The mixed-methods approach employed in the study adds depth and richness to the findings, combining quantitative data from pre-and post-tests with qualitative data from teachers' attitudes toward the technique.

Conclusion

In conclusion, the results of this investigation and the theoretical attitudes of the investigators in

the previous studies revealed that the implementation of a brainstorming technique in the language learning process fostered a situation for the language learners to freely express their mental content and authentically practice the language in the classroom which consequently was effective for the development of students' listening skills. Brainstorming-based activities allowed the learners to practice listening and make the topics interesting enough for the participants to listen to. All the issues mentioned above show that the enhancement of the listening performance of L2 learners is due to brainstorming-based learning. EFL teachers need to facilitate a situational authenticity wherein the students can be involved in an interacting and real-life task. However, such a situation is not usually practical in Iranian classroom settings. As a result, the syllabus designers and EFL teachers must foster an interactional authenticity for language learners to ensure that they practice and learn in an authentic situation. From the current study's findings, it is abundantly evident that involving EFL learners in an interactive atmosphere through brainstorming sessions can increasingly develop their listening and sub-skills. According to the qualitative dimension of the research, brainstorming improves students' listening skills, develops teachers' and learners' attitudes toward English language teaching and learning, and enhances the learners' achievement in listening proficiency.

The study has some limitations, as the findings are not generalizable to all English language learners because the investigators applied a purposeful sample of pre-intermediate EFL learners. The participants' gender was also limited to male students, failing to account for gender differences. Additionally, the participants of this study, due to an essential qualification to get a job in the Navy, were motivated learners and had positive attitudes toward learning English, which may not be representative of all EFL learners. The study suggests that syllabus designers and material designers should design the contents of syllabuses and textbooks based on interactive tasks through brainstorming procedures and principles. EFL teachers should also be encouraged to apply brainstorming strategies for teaching listening skills. Further studies are suggested to explore the impacts

of brainstorming techniques on other variables such as lowering anxiety, enhancing motivation, gender, fluency, accuracy, and pronunciation, and selecting a large number of participants to figure out if the groups are significantly different. The study concludes that replicating this study and conducting further research by selecting other samples from different studies, with different genders and age levels, in different environments will be fruitful. Further research is called for to explore the effectiveness of brainstorming techniques on different skills and sub-skills at other proficiency levels.

References

Abedianpour, S., & Omidvari, A. (2018). Brainstorming strategy and writing performance: Effects and attitudes. *Journal of Language Teaching and Research, 9*(5), 1084-1094.

Akbari, Z., & Rahmati, M. (2018). Brainstorming, a magic trick to hand over the learning. *Journal of Applied Linguistics and Language Research*, 5(1), 239-251.

Al-Bwli, Q. (2006). *The effectiveness of using brainstorming strategy in developing creative thinking in Islamic education among third secondary students in Tabouk city.* Unpublished M. Ed. Thesis, Mu'a University, Krak Jordan.

Al Masri, A. (2019). The impact of using brainstorming in the development of creative thinking and achievement in the English language of the 10th-grade students at King Abdullah II schools of excellence in Amman. *International Education Studies, 12*(2), 82-92.

Ariana, M., & Mirabela, A. (2012). Mind mapping and brainstorming as methods of teaching business concepts in English as a foreign language. *Academic Science Journal Psychological Series, 1*(1), 75-83.

Atsuwe, B. A., & Musa, T. D. (2021). The effect of brainstorming on students' academic achievement in physics in senior secondary schools of Makurdil local government area of Benue State, Nigeria. *IJARIIE, 7*(2), 183-192.

Bagci, H., & Eraldemir, D. (2018). The impact of brainstorming activities on EFL learners' listening comprehension performance. *Journal of Language and Linguistic Studies,* 14(2), 518-531.

Baker, J. & Westrup, H. (2005). *Practical English language teaching.* New York: McGraw-Hill.

Bjerregaard, M., & Compton, E. (2011). *Public speaking handbook (4th ed.).* Boston MA: Pearson.

Cahyono, B. Y., & Wibisono, A. (2021). Brainstorming and listening comprehension: can they coexist in EFL classrooms? *Cogent Education,* 8(1), 1875174. https://doi.org/10.1080/2331186X.2021.1875174

Cassone, L., Romero, M., & Basiri Esfahani, S. (2021). Group processes and creative components in a problem-solving task with modular robotics. *Journal of Computers in Education,* 8(1), 87-107.

Chiu, Y. C., & Tseng, Y. H. (2018). Using brainstorming in teacher training to improve English listening instructional design. *Education Sciences*, 8(4), 173. https://doi.org/10.3390/educsci8040173

Choi, M. (2021). Flipped Classroom instruction with brainstorming activities to enhance EFL students' listening performance. *Journal of Pan-Pacific Association of Applied Linguistics*, 25(1), 161-177. https://doi.org/10.22452/jppal.25.1.08

Danielson, D. & Hayden, R. (1963) *Reading in English for students of English as a second language.* New York, NY: McGraw-Hill.

Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public interest*, 14(1), 4-58.

Ebrahimi, M., & Abbasian, V. (2018). The effect of brainstorming sessions on EFL learners' listening comprehension. *International Journal of Research Studies in Language Learning,* 7(3), 23-40.

Ellis, R. (2017). Position paper: Moving task-based language teaching forward. *Language Teaching*, 50(4), 507-526.

Erdogan, V., & Arikan, A. (2016). The effect of brainstorming on listening comprehension levels of EFL learners. *International Journal of Instruction*, 9(2), 91-104.

Furnham, A., & Yazdanpanahi, T. (1995). Personality differences and group versus individual brainstorming. *Personality and Individual Differences*, 19(1), 73-80.

Gilakjani, A. P., & Sabouri, N. B. (2016). Learners' listening comprehension difficulties in English language learning: A literature review. *English Language Teaching*, 9(6), 123-133.

Jafari, S.M., Ahmadi, S. A., Pahnabi, M., & Dehghani, M. (2018). The impact of four brainstorming activities on listening comprehension: Convergent, divergent, structured, and unstructured. *Issues in Educational Research,* 28(2), 361-382.

Jafari, S. M., & Anbari, Z. (2017). The effect of brainstorming activities on listening comprehension: A case of Iranian EFL learners. *Iranian Journal of Language Teaching Research,* 5(3), 35-54. doi:10.22051/jltr.2017.12108.1208

Karahan, E., & Baran, B. (2017). The effectiveness of brainstorming as a post-listening activity in enhancing EFL learners' listening skills. *Journal of Language and Linguistic Studies,* 13(1), 102-117.

Khodadady, I., Shirmohammadi, S., &Talebi, F. (2011). Brainstorming and its effect on critical thinking and speaking skills. *The Iranian EFL Journal*, 7(1), 51-66.

Khodarahmi, R., & Ghanizadeh, A. (2015). Teachers' views on teaching listening comprehension and brainstorming as a listening strategy. *International Journal of Language and Linguistics*, 2(6), 48-55.

Khotimah, K. (2012). The use of round robin brainstorming to improve students' listening skill at the tenth grade of SMK Negeri Karanganyar in the academic year 2011/2012. *Journal of English and Education*, 1(1), 37-47.

Kim, H. J., & Lee, G. (2022). Effects of cooperative brainstorming for improving EFL learners' listening comprehension. *Applied Linguistics and Language Teaching,* 1(1), 7-22. https://doi.org/10.31009/allt.2022.v1n1a2

Kurniawati, D. (2019). Improving EFL learners' listening skills through brainstorming technique. *Dinamika Ilmu*, 19(2), 193-203. https://doi.org/10.21093/di.v19i2.1669

Li, C. H., Wu, M. H., & Lin, W. L. (2019). The use of a "Think-Pair-Share" brainstorming advance organizer to prepare learners to listen in the L2 classroom. *International Journal of Listening*, 33(2), 114-127.

Long, M. H. (1983). Linguistic and conversational adjustments to non-native speakers. *Studies in Second Language Acquisition*, 5(2), 177-193.

Luo, Z., & Wang, Z. (2017). The effectiveness of brainstorming as a pre-listening activity in EFL listening. *Journal of Language Teaching and Research,* 8(4), 669-676. https://doi.org/10.17507/jltr.0804.06

Maghsoudi, M., & Haririan, J. (2013). The impact of brainstorming strategies Iranian EFL learners' writing skill regarding their social class status. *International Journal of language and Linguistics*, 1(1), 60-67.

Maghsoudi, N., & Golshan, M. (2017). The impact of task-based language teaching on listening skill of Iranian EFL learners. *Journal of Applied Linguistics and Language Research*, 4(6), 241-253.

Mohammad, M. F. M., & Hussein, A. A. (2013). Enhancing students' motivation to write essays through brainstorming: A comparative study. *International Journal of Humanities and social science, 3*(9), 191-196.

Nunan, D. (2004). *Task-based language teaching.* Cambridge university press.

Oniye, M. I., Hassan, Z., Nadjwa, M. N., Abubakar, S., Assake, A. Z., & Lukman, F. (2020). Effect of brainstorming instructional strategy on reflective thinking skills among pre-service teachers of university in Iloron Metropolis. *Journal of Critical Reviews, 7*(11), 531-534.

Osborn, A. F. (1948). *Your creative power: How to use imagination to brighten life, to get ahead.* NY: Charles Scribner's Sons.

Osborn, A. F. (1991). *Your creative power; how to use your imagination to brighten life, to get ahead.* United States of America: Motorola University Press.

Paulus, P. B., & Nijstad, B. A. (Eds.). (2003). *Group creativity: Innovation through collaboration.* Oxford University Press.

Puccio, G. J., Mance, M., & Murdock, M. C. (2010). *Creative leadership: Skills that drive change.* Sage Publications.

Rao, Z. (2007). Training in brainstorming and developing writing skills. *ELT journal, 61*(2), 100-106.

Richards, J. C. (1990). *New trends in the teaching of writing in ESL/ EFL in Wang Z. (ed.) ELT in China.* Papers Presented in the International Symposium on Teaching English in the Chinese Context, Foreign Language Teaching and Research Press, Beijing.

Richards, J. C. (2008). *Teaching listening and speaking from theory to practice.* New York: Cambridge University Press.

Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2006). Productivity is not enough: A comparison of interactive and nominal brainstorming groups on idea generation and selection. *Journal of Experimental Social Psychology, 42*(2), 244-251.

Samimi, A., & Sadeghi, K. (2014). The impact of brainstorming on EFL students' listening comprehension. *Theory and Practice in Language Studies,* 4(2), 226-231. https://doi.org/10.4304/tpls.4.2.226-231

Soleimani, H., & Taheri Mahmoodabadi, Z. (2013). The effect of pre-task planning through split-information and brainstorming and recall of lexical items by Iranian EFL learners. *IJLIALW*, 3, 82-96.

Zarif, T. & Mateen, A. (2013). Role of using brainstorming on student learning outcomes during the teaching of Students at the middle level. *International Journal of Humanities and Social Sciences Invention,* 2 (10), 1-5.