



BRIAN-BASED STRATEGIES IN TEACHING - LEARNING EFL CLASSES

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Abstract

This study reviewed the effectiveness of brain-based strategies in the teaching and learning process of English as a Foreign Language. The studies that were evaluated in this article utilized a variety of research methodologies, such as quantitative, qualitative, and mixed. For the purpose of their data collection, the studies employed tests, questionnaires, interviews, observation, home assignments, homework, student portfolios, and digital apps. Following an examination of seventeen journal articles published between the years 2014 and 2024, the reviewer discovered two primary themes: the general advantages of brain-based techniques in English as a Foreign Language teaching and learning and the impact of brain-based strategies on EFL skill classroom instruction and learning. From the research papers that were examined, it is possible to draw the conclusion that brain-based teaching and learning methodologies are essential to the effectiveness of English as a Foreign Language teaching and learning. Both brain-based learning and teaching methodologies have been shown to improve the language skills of English as a Foreign Language students. Therefore, the use of brain-based techniques in English as a Foreign Language teaching and learning should be prioritized by researchers and EFL teachers.

Keywords: Brain-based learning, brain-based strategies, EFL learning, EFL teaching

1. Introduction

Learning is an ongoing process that occurs as individuals engage with their environment and gain new experiences. Currently, it is a prominent topic of debate in the world of education. The concept of learning is of utmost significance when it comes to interpreting human behaviors. Brain-based learning focuses on the intersection of neuroscience and educational psychology, making it a crucial aspect of the learning process. Brain-based learning is a method that focuses on developing learners' cognitive thinking by recognizing the brain as the fundamental tool in the learning process. The behavior of learners can be influenced by environmental and social influences. Brain-based learning occurs throughout the whole lifespan of learners, from birth to death. The structure and function of the brain contribute to the development of children's learning abilities. Meaningful learning can enhance the cognitive and emotional activity of learners in a similar manner. Meaningful learning cannot occur without the utilization of brain-based learning or the cognitive capabilities of the brain (Arun & Singaravelu, 2018b).

Brain-based teaching strategies are efficacious for all learners, irrespective of their learning difficulties. Jensen (2008, as cited in Arun & Singaravelu, 2018) defines brain-based learning as a cognitive approach to understanding the process of learning. It is neither a universal remedy nor the ultimate solution to all our difficulties. This is not a program, philosophy, or formula designed for teachers, nor is it a passing trend or gimmick. Nevertheless, it serves as a framework of ideas and a foundation of information and abilities that enable us to make more informed judgments regarding the learning process.

Now a days, English is in demand by individuals worldwide. Individuals have been exerting significant effort to learn and master the English language. Teachers worldwide have been grappling with the challenge of determining the most effective method for teaching students to master the English language. Few people realize that the ability

to communicate and proficiently learn new languages is an inherent skill. The location is within the brain. When teachers are able to tap into the cognitive abilities of pupils, they can effectively address all the difficulties children face in learning English (Viridyna & Sy, 2021).

Therefore, effective teachers continuously explore various teaching methodologies to enhance their students' academic performance. Each teacher possesses a unique learning style that distinguishes them from one another. Neuroscientific studies have yielded fresh insights into the diverse mechanisms via which humans acquire knowledge. Brain-based learning is the product of educators and researchers applying insights from brain science to inform teaching practice. Brain-based teaching and learning entails implementing carefully developed lesson plans and their effects on education before, during, and after each class.

The main goal of this study is to perform a thorough examination of the existing empirical studies on the topic, focusing specifically on the brain-based strategies in the context of teaching and learning English as a Foreign Language (EFL). The reviewer also scrutinized the reviewed studies, including their objectives, research technique, conclusions, and prospective future directions.

1.1. Aim of the Study

The aim of this study was to examine the concept of instructing and acquiring EFL classes using Brain-Based strategies, as outlined in the chosen research articles. The study's investigation of brain-based strategies was prompted by the subsequent research inquiries:

- a) What were the recommendations from recent researches (published between 2014 and 2024) about the use of brain-based strategies in teaching and learning EFL in classrooms?
- b) In what contexts (regions, countries, and learning settings) were these researches conducted?
- c) What research approaches were used to examine the empirical evidence?
- d) Which methods of collection did the studies under review employ?
- e) What were the recurring patterns observed in the examined research studies?

1.2 Significance of the Study

This study was a comprehensive examination of prior research on teaching and learning EFL using Brain Based strategies. It synthesized the findings of many studies to provide a wide overview and explain the current trends in EFL classrooms. This study was noteworthy due to its extensive investigation of the present state of these tendencies. The purpose of this article was to present an impartial summary of previous studies and offer prospective avenues for future investigation.

2. Method

Review articles are widely regarded as crucial resources that enhance a more thorough and compelling comprehension of a specific topic. They provide a comprehensive and meticulous integration of the most pertinent literature materials currently available in a specific field of study. They help readers stay informed about the latest research and identify areas that require further investigation. Prior to conducting a systematic review, it is imperative for the writers to strategically prepare their search techniques and preselect the relevant studies. Determining the inclusion and exclusion criteria for study types, identifying suitable databases for accessing studies, devising a systematic approach for organizing data (such as labelling and archiving studies, sorting information from individual articles, etc.), and deriving conclusions from the selected studies are all crucial tasks. Thus, the reviewer of this article determined the target papers by employing certain criteria. The following items were enumerated:

- **Publication:** Published in open access, fully-refereed journals that are indexed in the Emerging Sources Citation Index (ESCI) and the Social Sciences Citation Index (SSCI).
- **Language Used:** The entirety of the research document is written in the English language.
- **Time Bounded:** The reviewed studies were published in the years 2014–2024.

- **Type of Text:** Only includes research articles, excluding other academic written genres such as review articles, book reviews, notes or letters to the editor, responses to previous studies, discussion articles, dissertations, or proposals of models or frameworks that do not report on empirical evidence.
- **Research Methodologies Used:** qualitative, quantitative, and mixed
- **Participants of the Study:** The research works were conducted on EFL teachers and learners.

2.1. Data Collection

To adhere to the given requirements, the process of collecting data commenced by generating a comprehensive list of crucial phrases linked to the main issue, with the aim of accurately identifying all pertinent studies. The reviewer performed comprehensive searches on many platforms, including databases, digital libraries, search engines, journal websites, utilizing the specific keywords: brain-based learning, brain-based strategies, and teaching EFL through brain-based strategies. The databases utilized for language education and teacher education encompassed SCOPUS, JSTOR, and Google Scholar, among other sources. As a result, he collected a total of 17 articles from various media with the intention of conducting a review

2.2. Data Analysis

After gathering a large selection of articles, the reviewer proceeded to conduct an initial evaluation. Once deemed suitable for inclusion, the reviewer preserved each research article, anticipating a thorough assessment. He created data forms using existing classification forms and methodically organizing information from each item under examination. The goal was to carry out a thorough evaluation. The forms contained many tagging indicators, such as the author, publication year, journal, contexts, research methodology and designs, number of participants, data collection tools, and outcomes.

3. Results

The reviewer made a thorough content analysis by categorizing each study based on the categories specified in the data forms. The reviewer did a comprehensive, cyclical examination of the research, meticulously evaluating its purposes, data gathering, and results. The subsequent sub-sections describe the classification of the findings. The aims of these studies, the setting in which they were done, the study procedures and designs employed, and the themes linked with EFL skills using brain-based strategies were discussed.

3.1. Aims of the Studies

In general, the analysis, which was used to establish the emphasis of the studies, found that the majority of the studies that were analyzed concentrated on the effect that brain-based learning and teaching strategies have on English as a Foreign Language education settings. For instance, Yagcioglu (2014) conducted a research on a sample of 90 university learners whose ages ranged from 19-22 at Dokuz Eylul University in Izmirin, Turkey to investigate the benefits of brain-based learning in her own classes.

Moreover, Oghyanous (2017) conducted a study with the objective of investigating the impact of brain-based learning on the speaking skills of second-grade students at Senior High School 2 Praya. Similarly, Fatim et al. (2020) carried out a study to explain the application of brain-based learning on speaking proficiency, ascertain the factors contributing to its efficacy, and evaluate the effectiveness of implementing brain-based learning on speaking proficiency from Eric Jensen's point of view. And also, Oghyanous (2017) did a study on the impact of brain-based teaching on the self-efficacy of young EFL learners.

Additionally, Salem (2017) did a study on the engagement of English for Specific Purpose (ESP) students using brain-based learning techniques. The goal was to enhance the listening abilities of business students, improve vocabulary retention, and foster positive attitudes towards their brain dominance and learning styles. Likewise, Naeini et al. (2020) conducted a study on 'Multiple Pathways to the Student's Brain' to investigate the influence of brain-based education on the levels of stress, anxiety, depression, and perceived supportive learning environment among Iranian EFL learners. In his study, Rodriguez (2018) also explored the integration of English language teaching with 12 brain/mind learning principles. The purpose was to equip educators with a

comprehensive understanding of the fundamental characteristics of learning and to demonstrate how these concepts may be included in English teaching.

Furthermore, Mounir (2019) explored the significance of employing effective brain-based learning approaches to enhance students' enjoyment of learning, improve their EFL skills, and reduce their anxiety. Likewise, there was a research conducted by Deepa & Gracy (2019) on brain-based methods in English language teaching in order to compare and identify the specific brain-based strategies used in the approaches to English language teaching. Ali et al. (2019) also conducted their study with the goal of determining the impact of brain-based learning and traditional teaching methods on Urdu EFL students' academic performance in English. Similarly, Akman et al. (2020) carried out their study to investigate the effects of an English course based on the BBL Theory on students' academic performance.

In addition to these, Valipour & Araghi (2014) undertook a study on the impact of brain-based learning techniques on the academic performance of Iranian EFL students at the university level. The aim was to examine how brain-based learning strategies affect scores on reading comprehension tests. And also, Nur et al. (2020) did their research to investigate the impact of brain-based learning on the reading comprehension instruction of first-year students at MA As'adiyah Ereng-Ereng Bantaeng during the academic year 2010–2011. In the same way, Kohar (2022) conducted a study with the objective of evaluating the effectiveness of the brain-based learning model on reading comprehension in junior high schools in Indonesia, with a specific focus on the expository reading structure.

Correspondingly, a study by Chowdhury (2020) aimed to demonstrate the efficacy of the Brain-Targeted Teaching Model (BTT) as a teaching style that enhances students' perceptual abilities and fosters creativity. Likewise, Kosar & Bedir (2020) did a case study to investigate the impact of an intervention in brain-based learning (BBL) on the language learning beliefs (LLBs) of adult EFL learners. Barbosa (2021) also carried out a study aiming to propose a neuro-didactic model to improve first-year English as a Foreign Language students' primary communication skills.

3.2. Context of the Studies

Both EFL teachers and learners engaged in the articles analysis as part of the implementation of brain-based methods in EFL classrooms. The selected studies were conducted in various countries, including the following: China (n=1), Colombia (n=1), Egypt (n=2), India (n=1), Indonesia (n=4), Iran (n=3), Pakistan (n=1), Turkey (n=3), and UAE (n=1). Based on the data aforementioned, it can be deduced that the majority of the studies which were examined were conducted in Asia, Europe, Africa, and Latin America, respectively. Considering all of these factors, it can be inferred that brain-based teaching and learning strategies are a notable concern in nations where English is used as a second/foreign language.

3.3. Research Methodologies and Designs of the Studies

The reviewer did a comprehensive evaluation of the chosen papers, with a specific emphasis on their study's methodology, study designs, data collection instruments, and sample sizes employed in the investigations. The total quantity of research analyzed comprised quantitative (n= 9), qualitative (n=6), and mixed-method (n=2) studies.

One of the quantitative studies utilised a descriptive design, but the other quantitative studies used experimental designs. Among the experimental designs, one of the studies did not include a control group in their pre-experimental design rather it used one-group experiment. In contrast, one of the quasi-experimental methods involved administering tests to a single group both before and after the intervention. The other study exclusively utilized post-tests in a single-group experiment. On the other hand, the most of the studies employed a pre- and post-test design with two groups: control and experimental. The researchers conducted quantitative studies using surveys and tests to collect data for the chosen papers. Researchers also used samples with numbers between twenty-two and sixty. Moreover, they employed convenient and surfeited non-probability sampling methods, as well as a simple random probability sampling methodology.

Moreover, the qualitative studies under examination commonly employed case studies, action research, and content analysis designs. In order to collect data, the qualitative researchers utilized the following methods: observation, interviews, class assignments, homework assignments, students' portfolios, technology apps for summative and formative assessments, communications from parents, and a checklist that they had created themselves. Within a single class, the sample sizes that they utilized ranged from twenty-four to an undetermined number of learners which were described in terms of classes. In addition, the mixed researchers gathered their data through a combination of interview, tests, questionnaires, and observation. Additionally, the trials involved between 36 and 120 participants. The selected studies typically included EFL teachers and students, ranging from elementary school pupils to college students.

3.4. Themes Related to Listening Skills

On the basis of their results, the reviewer classified the works that were assessed into two basic categories. Specifically, these themes include the following: the overall benefit of brain-based techniques in EFL and the effect of brain-based strategies on the teaching and learning of EFL skills specifically.

3.4.1. *The Overall Benefit of Brain-Based Strategies in EFL*

Scientists have just gained a novel perspective on the functioning of the brain. This concept has also made its mark in the field of educational science, resulting in the discovery of new insights and approaches to enhance the learning process for students across several disciplines. In recent decades, there has been an increased focus on the systematic application of brain-based techniques, specifically in relation to the significance of emotion, thematic education, differentiated learning, movement, and the utilization of mental models. Furthermore, evolving understandings of memory, evaluation, the educational setting, brain neuroscience, and time utilization have all contributed to improving student performance. In the 1980s, brain-based education emerged as a distinct subject, drawing on our growing understanding of the brain and its potential impact on education (Valipour & Araghi, 2014). Leslie Hart (1983) proposed in his influential book "Human Brain and Human Learning" that classroom danger had a substantial negative impact on cognitive processes (as cited in Masurkar, 2021). While this result may not be groundbreaking, it underscores the significance of comprehending our children's brain functions to secure their success. Brain-based learning, a newly emerging area, is steadily progressing towards becoming a well-established domain with its own set of values, perceptions, and standards (Masurkar, 2021). Hence, brain-based instruction entails using meticulously crafted concepts and assessing their impact at every stage of teaching a subject matter in each class (Valipour & Araghi, 2014).

Therefore, new strategies and techniques have been implemented in English Language Teaching (ELT) programs during the past few years. There are a great number of practitioners in the field of language education who have come to the realization that contemporary methods and approaches are more beneficial to language learners than the methods and approaches that were utilized in the past. Despite the fact that brain-based learning is not a novel concept in the field of language education, there are new methods that are associated with brain-based learning in English as a foreign language programs (Yagcioglu, 2014).

Arun & Singaravelu (2018) also described that brain-based learning is distinct from traditional methods of instruction because it is an innovative post-modernism approach. Instead of focusing on memorization, brain-based learning places an emphasis on learning that is meaningful to the learner. Additionally, activity-based learning and learner-centered approaches were established through the use of brain-based learning.

In her study, Yagcioglu (2014) argued that using brain-based learning techniques can enhance students' and colleagues' ability to study their lessons more efficiently, leading to increased success. It was anticipated that the study would assist new colleagues in developing effective lesson plans. Additionally, the researcher estimated that her study would facilitate her colleagues in conducting more engaging and pleasurable lessons. The researcher also suggested useful web-sites and sample class activities for brain-based learning activities. Rodriguez (2018) also discovered that a deeper comprehension of the human brain has the potential to enhance learning possibilities, not only in English language classes but across all subjects. Likewise, Mounir (2019) investigated the fact that our understanding of the human brain is constantly developing. The brain serves as the central command centre for the human body, regulating our behaviours, emotions, movements, and biological processes. Additionally, it is the core of our human nature. The brain determines our identity, behaviour, and the fundamental characteristics of our species.

Furthermore, Deepa & Gracy (2019) conducted their study on brain-based strategies in English language teaching. The findings of their study have shown that the brain-based components are present in various teaching methods and techniques, such as role play, dramatization, storytelling, the audio-lingual method, the bilingual method, computer-assisted language learning (CALL), total physical response (TPR), cartoons, teaching through the arts, TPR storytelling, communicative language teaching, and content-based instruction. Thus, these strategies and techniques used in English language teaching fall under the category of brain-based learning. On the other hand, the lexical approach, direct method, and grammar translation technique do not adequately address the brain-based components. Thus, these methods and techniques for teaching the English language are not classified as brain-based learning. Therefore, they deduced that ELT approaches employ brain-based teaching tactics that increase the learning process. Engaging the brain as an active participant makes the process of learning a new foreign language more captivating.

Similarly, the study carried out by Ali et al. (2019) has affirmed that brain-based learning has a substantial impact on the academic performance of Urdu EFL learners in 8th grade English. The study's findings determined that the post-test results exhibited a notable disparity between the control and experimental groups, with brain-based learning being the preferred option. Therefore, the researchers proposed that Urdu EFL learners who receive instruction using the brain-based learning teaching approach perform better in the English topic. And also, the researchers clarified that elementary teachers, particularly those teaching English as a subject matter, should be assigned who are proficient in brain-based learning concepts and methodologies. They also described that future researches should investigate the impact of the brain-based learning-teaching technique on learners' cognitive abilities, reading comprehension, and attitude towards English as a topic.

In a similar vein, Chowdhury (2020) examined the extent to which students maintained their attention in class for the entire duration. They became more engaged in classroom participation. They were extremely driven to finish their assignment promptly and obtain their grades. The teacher successfully supervised students in a highly effective manner, minimizing stress. In addition to fostering diversity and favourable rapport between students and teachers, this strategy provided learners with the opportunity to cultivate their reasoning abilities as well as their intrapersonal and interpersonal skills. Despite a few challenges, this instructional approach garnered widespread recognition as a resounding success. It improves students' creative thinking and intellectual capacity. In addition to cultivating their reasoning abilities, which are crucial in any ELT setting, it also enables the teachers to alter their perspective towards students, enhancing their comprehension of their thoughts and feelings and fostering a favourable rapport with students. The language learning environment becomes captivating, prompting students to actively seek out practical applications for their studies. It also assists children in cultivating self-discipline, enabling them to maintain concentration on their academic pursuits, ultimately facilitating the acquisition of greater information and academic success. Understanding the phases of the brain-targeted education methodology is fairly straightforward. It is anticipated that the framework outlined in this document will inspire teachers to change their mindset towards their students and establish a prosperous and peaceful educational setting conducive to enhanced learning.

Furthermore, Akman et al. (2020) conducted a study on the impact of English instruction on academic performance, using the brain-based learning theory as a basis. The study's findings indicate that brain-based learning surpasses traditional teaching approaches in terms of academic accomplishment. During educational activities in courses, teachers might get insights from seminars that suggest instrumental music, students' physical mobility, and access to drinking water contribute to a positive learning experience. This will mitigate the risk of poor grades, alleviate tension and strain, and foster a tranquil classroom environment. And also, the finding of a study carried out by Kosar & Bedir (2020) have indicated that statistically significant changes occurred in about one-third of the 34 who believe in BBL. They described how the changes in beliefs appear to have a positive effect on adult EFL learners' learning processes. As a result, BBL interventions may become more important in EFL teaching and learning. The intervention in BBL has the potential to elicit positive modifications in the beliefs of adult EFL learners toward language acquisition, thus aiding them in the process of acquiring the English language. However, the researchers noted that the current study's participant size is insufficient to extrapolate the findings. To add to the evidence that a BBL intervention can help students change their false beliefs about language learning, more research needs to be done on the effects of BBL intervention on LLBs of language learners in a range of settings and age groups, including those learning English and other foreign or second languages.

Moreover, Naeini et al. (2020) examined in their study that how various brain channels could effectively influence the stress, anxiety, depression, and perceived supportive learning environment of EFL learners. The findings of the study have validated that the multiple pathway model, which is one of the brain-based instruction models, had a beneficial impact on the stress, anxiety, depression, and perceived supportive learning climate of EFL learners. The researchers also investigated the importance of the learning climate and how brain-based education affects learners' perceptions of a helpful learning environment. They determined that teachers ought to attempt to employ innovative pedagogical approaches and leverage their beneficial outcomes to provide suitable educational settings. Such circumstances may also impact the learners' psychological well-being, leading to the regulation of stress, anxiety, and sadness. Furthermore, the researchers reached the conclusion that several pathways play a role in the process of learning. It is crucial to employ suitable and efficient techniques to establish an enjoyable atmosphere for students. Teaching in a way that engages all the brain circuits of pupils leads to classrooms that are more beneficial, enhancing both emotional well-being and educational success.

In addition to these, the results of the study conducted by Barbosa (2021) have indicated that the didactic methodology was moderately effective, while the neuro-didactic methodology was highly effective. This suggested that implementing brain-based strategies can significantly improve foreign language learning.

Generally, the application of brain-based teaching and learning strategies plays an essential part in the EFL teaching-learning process, and it is a crucial factor that contributes to the success of EFL teaching and learning.

3.4.2. *The Effect of Brain-Based Strategies in EFL Skills*

Now a days, EFL teachers consistently strive to enhance their students' acquisition of knowledge and mastery of new concepts in a highly efficient manner. In this regard, teachers have made significant efforts, increasingly focusing on brain-based learning methodologies to tackle the challenge of enhancing the effectiveness and success of the learning process.

Although Winters (2001, as cited in Valipour & Araghi, 2014)) acknowledged the existence of certain brain regions associated with cognitive functions involved in learning, studies on the brain and its functioning during learning have indicated that the human brain does not operate like a computer, performing tasks in a linear manner. Instead, it employs multiple strategies to process information and generate meaning. And also, Jensen (2005, as cited in Valipour & Araghi, 2014)) described that the region of the brain responsible for movement is also responsible for learning. To enhance the learning process, it is necessary to engage all abilities, including those associated with dancing, clapping, manipulating, and innate ones. Therefore, teachers gain an advantage by utilizing this inherent energy rather than opposing it. And also, there are some researches which have indicated the role of brain-based strategies to improve the EFL skills of students.

Valipour & Araghi (2014) compared reading comprehension scores according to brain-based learning strategies to determine whether or not a student is capable of analyzing, evaluating, and comprehending material at their grade level. Finally, the findings demonstrated that brain-based learning strategies can be an effective means of achieving pedagogical goals in order to enhance learners' learning capabilities. And also, Nur et al. (2020) conducted a study that has suggested brain-based learning in reading comprehension could potentially alleviate the challenges associated with learning to read. The implementation of brain-based learning effectively taught reading comprehension to the first-year students of MA As'adiyah Ereng-Ereng Bantaeng, proving to be an effective lesson method. The students demonstrated this by achieving an excellent classification of 80 on the post-test segment. Likewise, In his study, Kohar (2022) determined that the brain-based learning model is highly beneficial for enhancing reading comprehension among students at Junior High School Unggulan Sindang Indramayu. The t-test revealed the difference between the average scores of the pre-test and the post-test.

Furthermore, Syahbandi (2017) carried out a study on investigating the impact of brain-based learning on students' speaking abilities. The data analysis results have indicated that brain-based learning had a notable impact on the speaking skills of second-grade pupils at SMAN 2 Praya throughout the 2017–2018 academic year. Similarly, Fatim et al. (2020) revealed that the application of brain-based learning in MTs Nurul Huda Malang could enhance students' speaking abilities. The researchers asserted that their study can assist teachers in creating a linguistic atmosphere that fosters the motivation and emotional well-being of students as they develop their cognitive abilities. This includes recognizing when students' brains require a pause and when they need additional motivation

during the learning process. Each teacher must modify their teaching methods and mindset to align with the cognitive, emotional, and motivational aspects, considering the functioning of both the right and left hemispheres of the students' brains.

Moreover, Salem (2017) conducted a study on the involvement of ESP students in brain-based learning to enhance their listening abilities, language retention, and motivation. The results of this study indicate that engaging in enjoyable activities can lead to significant improvements in listening skills, vocabulary retention, and a positive attitude towards language acquisition. Both intrinsic and extrinsic motivation drive these improvements. The researcher also suggested that future research may focus on e-brain-based language acquisition, given the recent technological improvements. Education policymakers in the Arab region should implement these enhancements in schools and universities to create more effective language teaching and learning settings.

Addition to these, Oghyanous (2017) did a study to investigate the effect of brain-based teaching on the self-efficacy of young EFL learners. The study aimed to determine whether brain-based teaching has a substantial effect on the self-efficacy of young EFL learners. The study's findings have indicated that both the experimental and control groups were initially comparable prior to receiving brain-based teaching. However, after implementing brain-based teaching, the experimental group showed significantly higher self-efficacy scores than the control group. The findings suggested that brain-based education has a beneficial impact on the self-confidence of young EFL learners in Iran.

Generally, according to the aforementioned research findings, brain-based learning significantly enhances the language skills of students studying EFL.

4. Conclusion

The main objective of this study was to investigate the concept of teaching and learning EFL classes using brain-based methods. The published and evaluated articles employed a variety of research methodologies, including quantitative, qualitative, and mixed methods. The researchers utilized tests, questionnaires, interviews, observation, class assignments, homework, assignments, students' portfolios, and technology apps as their data collection tools. Upon examining 17 papers published in academic journals between 2014 and 2024, the reviewer discerned two main themes: the general advantages of brain-based strategies in EFL, and the effect of brain-based strategies on the instruction and acquisition of EFL skills.

Therefore, after examining the studies, it can be inferred that implementing brain-based teaching and learning strategies is vital in the process of teaching and learning EFL. This element significantly contributes to the achievement of success in EFL education. Furthermore, research has shown that employing brain-based learning-teaching methodologies greatly improves the abilities of EFL students. Therefore, it is advisable for researchers and EFL teachers to give priority to the use of brain-based strategies in the teaching-learning process of EFL contexts.

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