Bulletin of Business and Economics, 13(1), 171-176
https://bbejournal.com
https://doi.org/10.61506/01.00174

Strategies in the Classroom for English Learning: Investigating the Effectiveness of Brain-Based Learning at Secondary School Level

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Abstract
Brain-based learning is claimed to make foreign language communication easier because learning a foreign language is complex. The objective of the study is to explore secondary school teachers' perceptions of the effectiveness of brain-based learning strategies for English learning in the classroom. The research design was carefully crafted to gather quantitative data through a survey method, utilizing Likert scales to gauge respondents' levels of agreement with statements related to the research objectives. Researchers selected population responders using essential random sampling. The survey sampled 300 teachers. The study found that brain-based learning methodologies and concepts help students learn other languages naturally. Teachers reported that students never felt confident when speaking in English class, felt unconscious about speaking in front of other students, and got nervous when they did not understand every word their teacher was saying. However, the class environment made them feel comfortable. Brain-based learning provides a natural and suitable atmosphere for foreign/second language acquisition. Hence, the study may propose it for English classrooms at different levels.
Keywords: Strategies, English learning, Brain-based learning

1. Introduction

The term "brain-based education" refers to a broad category of instructional strategies that have their origins in studies of the neural circuits in the brain and how they govern learning. When people talk about "educational neuroscience" or "mind, brain, and education science," they are usually referring to the field of study rather than any particular method used in the classroom that draws from neuroscience research (Ali, Alvi, & Nazar, 2023). Neuroplasticity, the hypothesis that people's neural connections in the brain alter, reroute, and reorganize themselves as they learn new ideas, undergo new experiences, or hone particular abilities through practice, has been the central focus of much scientific research and academic discussion surrounding brain-based learning. Brain research has revealed a number of interesting facts, including the ability to multitask, the fact that different parts of the brain can store the same information, that environmental factors like stress, food, and exercise can affect our learning capacity, that contextual understanding is more important than memorization, and that our emotional states can either help or hinder our ability to retain new information.

The need to communicate regularly in English is growing (Ali, Alvi, & Nazar, 2023). The majority of our pupils are accustomed to communicating in Urdu; as a result, they find it challenging to learn English. Worries about communicating in English are a common problem for students. The fear of making grammatical or pronunciation errors in front of an audience is second only to the fear of speaking on the spot in English. The present investigation relates to the Neuroscience of anxiety, which describes how the amygdala, a region of the brain, becomes excessively active in a state of dread, causing a variety of behavioral changes such as a lack of focus and heightened arousal. Teachers are urged to foster an atmosphere that inspires and motivates students. In addition, educators must use caution when handling scenarios likely to elicit fear. Anxiety is a common problem in secondary school settings, and this study looks at how it manifests and how it affects students' performance in English lessons (Ali, Wattoo, & Zaman, 2023).

The idea behind brain-based learning is that instead of using tried-and-true methods and conventional wisdom, educators can enhance and speed up the learning process by drawing on current scientific knowledge about the brain and its learning processes to craft courses. However, new research in cognitive science has shown that learning actually affects the way our brains work and that practice makes perfect, both for learning new abilities and honing old ones (Ali, Kashif, & Shahzad, 2020). Curriculum design and classroom management are two areas that stand to benefit significantly from the discovery that effective learning enhances brain functioning, resilience, and working intelligence. Methods and programs in education that are based on what scientists have discovered about how the brain learns are called "brain-based education," "brain-based teaching," or "brain-based learning." Rather than referring to particular brain-based instructional approaches used in classrooms, related words such as "educational neuroscience" or "mind, brain, and education science" more broadly describe the field of study. Neuroplasticity, the hypothesis that people's neural connections in the brain alter, reroute, and reorganize themselves in response to novel information, experiences, or skill practice, has been the central focus of much research and academic discussion of brain-based learning. Research has also revealed that our brains are very versatile, that various parts of the brain can store the same information, and that our emotional and lifestyle states—such as excitement or depression—can impact our ability to learn.

The term "brain-based learning" describes an approach to teaching and learning that takes a neuroscientific view of the brain as its starting point. It calls for the application of tailored learning strategies derived from research into human cognition, such as how humans focus, remember, and acquire new knowledge. By "brain-based learning," we mean pedagogical approaches that are based on the latest neuroscience research on the brain's learning processes, with an eye toward factors like cognitive development and the ways in which students' learning styles change as they progress through different stages of physical, emotional, and intellectual maturation (Shahzad, Zainab, & Ali, 2022).

The ideal method of education plays to the strengths of the brain. In line with the way the brain develops and changes throughout life, brain-based education offers a theoretical framework for the classroom that is based on neuroscience. Participation from all parts of the body improves memorization. Providing more pupils with more focused and relevant courses is the main objective of brain-based education. It will happen regardless of what you do. Integrating environmental techniques, instruction, and curriculum consistently and strategically is crucial to the success of this endeavor (Shamim, 2011).

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A growing number of educators are turning to brain-based learning strategies to improve their pupils' academic performance. The idea behind brain-based learning is that instead of using tried-and-true methods and conventional wisdom, educators can enhance and speed up the learning process by drawing on current scientific knowledge about the brain and its learning processes to craft courses. A person's intelligence quotient (IQ), according to popular belief, does not change much as they age. However, new research in cognitive science has shown that learning actually affects the way our brains work and that practice makes perfect, both for learning new abilities and honing old ones. Curriculum design and classroom management are two areas that stand to benefit significantly from the discovery that effective learning enhances brain functioning, resilience, and working intelligence.

Conventional lecture halls may be more intellectually engaging for students, according to 20 years of brain study. The new paradigm in education, "brain-based learning," has finally arrived. It is a way of teaching that, instead of long lectures given by the teacher, stresses physical movement, student-to-student instruction, and group work. Neuroplasticity, the process by which the brain's connections are reorganized in reaction to new knowledge, is fundamental to brain-based learning (Ali, Kashif, & Shahzad, 2020). The objective of the study is to explore secondary school teachers' perceptions of the effectiveness of brain-based learning strategies for English learning in the classroom.

2. Review of Related Literature

Successful and efficient completion of learning objectives is the result of a process that directs students through activities that are designed, implemented, and systematically evaluated. If they want to be taken seriously as professionals, educators must realize that they must be able to do more than provide content; they must also be able to facilitate learning in a way that is both relevant and interesting to their students. To do so, educators need to have a firm grasp of how the human brain operates in machine learning (Seth et al., 2008). Teachers who have a more profound knowledge of how the brain learns are in a better position to design engaging and successful learning models. As a result of developments in science and technology, new models, methods of instruction, and approaches to learning are constantly being created. Brain-based learning is having a profound impact in several fields, including biology, psychology, and neuroscience, and is changing the paradigm of cooperative learning. Students' synaptic nerves grow more interconnected, and their level of complexity in thinking increases the more they participate in learning activities (Shams, 2008). The nervous system lays the groundwork for cognition, adaptability, and social interaction by receiving, analyzing, and reacting to data from the external world.

Motives for studying include developing students' problem-solving skills and enhancing their capacity for self-directed study. With an understanding of how far humans can go in their learning, teachers can anticipate problems and help their students. To encourage kids to learn on their own, educators must grasp what drives them. Learning to assess one's academic performance is essential for sixth graders. Supporting brain-based learning and allowing students to employ a wide range of learning styles and intelligences, the use of manipulative, active learning, field trips, guest lecturers, and authentic settings are all effective teaching methods.

2.1. Brain Based Learning Strategies

There is a substantial amount of information that is lost throughout the learning process. These strategies aim to directly hijack key learning pathways in the brain to help students not only mitigate this loss but also improve their overall learning capacity.

2.1.1. Spatial effects

Spreading out learning over time and repeating content at ever-greater time intervals improves memories and serves as an insulator against forgetting, according to a study. A set of facts, for instance, can be memorized in just three minutes. You can do them again in 10 minutes, 30 minutes, 2 hours, or six days (Erlauer, 2003). The result is better memory recall.

2.1.2. Generative Learning

Generative learning includes activities such as creating art, teaching others, participating in hands-on learning in the actual world, writing a blog, joining an online discussion forum, etc. The incorporation of fresh knowledge with previously acquired information can re-conceptualize and re-organize information (Ferrari & McBride, 2011). This is a great way to reinforce what you have learned and find any holes in your understanding.

2.1.3. Retrieval Training

The ability to demonstrate learning is often used as evidence of comprehension. Keeping information in mind, putting in work, and checking one's confidence are all part of this. Since forgetting and remembering are not mutually exclusive processes, this may not serve to avoid the former (Dwyer, 2002). Retrieval practice and testing are effective ways to cement previously acquired knowledge by facilitating the acceptance of new facts through the analysis of misconceptions and the application of the snowball effect. Learning to retrieve previously stored information is a skill that, with practice, can help one recall more. The brain optimizes learning for distinct purposes, depending on whether it is for memory or recall. You need to be able to recall information in order to put it to use.

2.1.4. Chunking

Information chunking is the process of breaking down larger bodies of text into smaller, more manageable pieces, ideally with a common subject, for easier reading and comprehension (Diamond, 1998). Information can be broken down into manageable pieces based on superficial features like color, category, similarity, relationships, etc. Multiple chunks of information are more straightforward to remember than several individual parts because the brain employs networks of knowledge.

2.1.5. Mental Manipulations

This ability necessitates the use of working memory and other forms of focused memory (Driscoll, 2000). Mental manipulation refers to the process of working with one's mind to change the content of knowledge or apply it to new contexts. To play football on a field riddled with potholes, for example, you can use the simple mental trick of visualizing the field as smooth as glass. To some, this may sound like fantastical nonsense. So, mental tricks are just creative visualization that you do on purpose.

2.1.6. Meta-cognition, Language and Inquiry

Understanding how you think, talking about what you want to know, and asking questions: Metacognition entails reflection on one's own cognitive processes. Using mental tools like imagery, metaphor, and other mental representations are all part of meta-cognition (Dornyei, 2003). The question isn't strictly related, but it does have some bearing. Inquiry entails, among other things, the act of questioning, the discovery of answers, the assimilation of new information, the accumulation of knowledge around a topic in a snowball-like pattern, and the overcoming of latent biases and restrictions. This method can be used to refine and investigate a topic in greater depth. Providing students and learners with opportunities to interpret material in light of its context, reliability, relevance, practical application, inherent structure, labels, and limits or boundaries is the most effective strategy to aid in their understanding. It is essential to provide data meaningful context through language and labels. Words take advantage of the brain's high-level processing centres that make connections between real-world experience and higher-level ideas.

2.2. Implication of Brain Based Learning and Classroom

The two-way strategy for promoting brain-based philosophy within educational institutions has acknowledged the BBL concept, which Caine and Caine (1991) proposed and which consists of twelve principles, as being highly significant. As a core principle of BBL, having trainees participate in cognitively demanding tasks that play to the strengths of the human brain is essential. According to several sources (Aziz-ur-Rehman, 2011; Kline, 2006), one way to help the brain function better is to create an environment that is less stressful and more beneficial.

Students are able to engage with one another, make academic strides, and develop their anthropological sensibilities via the combined use of all of these strategies. The first law of BBL, learning, takes place during development, and the brain is a processor in which the two hemispheres communicate and interact. The human mind is so adept at multitasking that this is possible. Breathing, recognizing, talking, and reuniting are just a few of the many simultaneous operations that the brain expertly manages. Some methods for evaluating such knowledge events include the following: question sheets, artwork, advertisements, drawings, alterations, blank insides, column matching, flow charts, audiovisual aids, visual representation, proactive errands, and artwork (Kathleen Cercone, 2006).

Teachers can help students decipher hidden meaning by providing meaningful examples, bringing them into contact with real-life scenarios, building on students' prior knowledge, and making assumptions. Similarly, instructors' attitudes, attire, and hairstyles play a role. Thus, educators should proactively care for their students' future success. According to multiple studies, including those by Aziz-ur-Rehman (2011), Jensen (2005), it is crucial to present a graph of a healthy eating plan in the classroom and provide students with periodic nutrition education. Jensen (2005) and Kline (2006) found that the optimal learning environment includes fruits, nuts, potatoes, and bone essences.

Consequently, classrooms are filled with energy and well-structured to promote the health and wellness of students. Because of its disproportionately high water content, the brain is particularly vulnerable to the adverse effects of heat exhaustion and sunburn on cognitive processes like memory, attention, and reaction time (Jensen, 2005; Weiss, 2000). It is encouraged that apprentices drink water during class, and there should be no limitations on when or how they can do so. More breaks are needed so people can use the restroom. Effort, food, and altered chemical levels are just a few of the variables that affect cognitive growth in the brain. Problems with sleep, nutrition, social connections, and overall physical and mental health can play crucial roles in a physiologically oriented curriculum since our bodies are the most engaging component of it.

Educators had a duty to protect their pupils from anything that could be dangerous or inaccessible. The focus should instead be on encouraging students' understanding and originality in the classroom. If teachers want their apprentices to pay attention and retain information, they must cater to their natural curiosity. To help children's developing brains understand the significance of new information, we should make use of their heightened powers of perception (Willingham, 2004). It was shown that teachers can agree to students adding to their existing body of knowledge if they commit to building a community of learners who are willing to share what they know. It is stated that the human mind prefers novel viewpoints to monotony and repetition. The creative integration of concepts into artistic productions enables these contemporary, futuristic data sets to coexist with the architecture of the human brain (Aziz-ur-Rehman, 2011).

The learner's brain uses a technique known as "patterning" to extract meaning from untreated material. By giving students simply consumable material and encouraging them to incorporate their ideas on the fly, educators may help their students become better problem solvers. Aristocratic instruction, free-associative gatherings, debates, puzzle contests, presentations, assignments, quizzes, dangerous discernment, fantasizing, and so on are all examples of erudite activities. Participation in these activities will help apprentices develop their fundamental skills.

When working with a group of unusually shaped apprentices, a good instructor needs to recognize and then correct their students' mistakes, misunderstandings, misperceptions, and inconsistencies in order to spark meaningful discussion. According to Aziz-ur-Rehaman (2011) the predicted human brain structure is functional when creating unique classroom setups that persuade students they will be able to communicate effectively. Considering the idea of a person's learning and sensations being mutually connected, we may understand the sixth principle of the BBL, which states that there are substantial emotional patterns within a person's mind and brain. Each person's unique combination of psychosomatic preconditions and social, interpersonal, sociological, mental, emotional, and predisposed factors shapes their response. Thus, the idea of practical education is directly related to the emotional health of apprentices. While teaching and learning, a person's emotions and motivations impact their thoughts and memory.

The onus for making the classroom a welcoming place for students to learn is on the teacher. As pedagogy develops, it is essential to add uplifting practices. It is vital to provide apprentices with a range of choices while they are training. A dash of humour and lightheartedness can go a long way in easing the pressure of picking an apprentice's brain. The best trainees are those who consistently make other people feel good about themselves—happiness, contentment, enjoyment, security, and moderation. The ability to devise plans stems from these mental frameworks. Maintaining a safe and supportive environment for students' emotional development in the classroom requires vigilant monitoring by teachers. Advocating somatic efforts, enabling different shifts in trainees, and providing evocative content inside learning exercises are all necessary to remove routine

from the classroom. Because of the correlation between reduced brain grey matter and anxiety and mental illness, expressing oneself irregularly can have a negative impact on academic performance. Similar to how harmful stress can impair working memory (Aziz-ur-Rehaman, 2011; Caine and Caine, 2005).

3. Research Methodology

The research methodology employed in this study is comprehensive and systematic, aiming to investigate the strategies in the classroom about the effectiveness of brain-based learning at the secondary school level. The research design was carefully crafted to gather quantitative data through a survey method, utilizing Likert scales to gauge respondents' levels of agreement with statements related to the research objectives.

Regarding population and sample selection, the study targeted high school teachers from public institutions in the Gujranwala division who actively utilized brain-based learning methods as strategies in the classroom. A representative sample of three hundred secondary school teachers was chosen through purposeful sampling, allowing for the generalization of findings while considering practical constraints such as time and cost limitations.

The research instrument, comprising questionnaire teachers, was meticulously developed to align with the study's objectives. Validation of the questionnaires was carried out through consultations with experts in the field and pilot testing with a small sample of respondents (40) to ensure clarity, relevance, and reliability. The data collection process involved visiting multiple schools in the Gujranwala district, where the questionnaires were administered and explained to teachers. The returned questionnaires were then encoded and analyzed using the statistical software SPSS, facilitating the extraction of meaningful insights through technique such as percentages. By employing numerical descriptions and statistical analysis, the study ensured the reliability and validity of the findings, providing a robust foundation for conclusions.

4. Data Analysis and Interpretation

Table 1: Relaxed alertness

S#	Statement	SA	S	UD	DA	SDA
1	Student take sufficient water intake to enhance his/her learning ability.	36.7%	35.7%	10.3%	7.3%	10.0%
2	Student's cooperation feel them relaxed.	19.7%	62.7%	9.3%	7.0%	1.3%
3	Teacher motivates students to communicate in English.	18.7%	68.3%	8.0%	3.3%	1.7%
4	Conducive environment improves student learning.	26.0%	54.3%	14.3%	1.7%	3.7%
5	Moral stories help students to make connection.	25.7%	62.3%	4.7%	6.7%	0.7%
6	Music makes the students relaxed.	37.3%	35.3%	5.0%	10.3%	12.0%

Item 1 shows that most respondents (36.7 + 35.7 = 72.4%) agreed that students take sufficient water intake to enhance their learning ability, whereas students (7.3 + 10 = 17.3%) disagreed that students take sufficient water intake to enhance their learning ability. Therefore, most students agreed they should have sufficient water intake to enhance their learning ability.

Item 2 shows that most of the students (19.7 + 62.7 = 82.4%) perceive that their cooperation feels relaxed, whereas (7.0 + 1.3 = 8.3%) said that their cooperation feels relaxed. Therefore, it is concluded that most students cooperate and feel relaxed.

Item 3 shows that most respondents (18.7 + 68.3 = 87.0%) responded that teachers motivate students to communicate in English, whereas respondents (1.7 + 3.3 = 5.0%) said teachers did not motivate students to communicate in English. Therefore, it is concluded that most teachers motivate students to communicate in English.

Item 4 shows that most respondents (26.0 + 54.3 = 80.3%) agreed that a conducive environment improves student learning, whereas students (1.7 + 3.7 = 5.4%) disagreed that a conducive environment improves student learning. Therefore, it is concluded that most students agree that a conducive environment improves student learning.

Item 5 shows that most respondents (25.7 + 62.3 = 88.0%) responded that students agreed that moral stories help them to make connections, whereas respondents (6.7 + 0.7 = 7.4%) responded that they disagreed that moral stories help them to make connections. Therefore, it is concluded that most students agree that moral stories help them make connections.

Item 6 shows that most respondents (37.3 + 35.3 = 72.6%) responded that students agreed that music makes them relaxed, whereas students (10.3 + 12.0 = 22.3%) disagreed that music makes them relaxed. Therefore, it is concluded that most students agree that music makes them relaxed.

Table 2: Orchestrated Immersion

S#	Statement	SA	S	UD	DA	SDA
7	AV aids promotes students English learning.	14.3%	46.3%	26.3%	10.3%	2.7%
8	Teacher teaches the critical thinking skills.	18.0%	55.0%	15.7%	10.0%	1.3%
9	Students perceived through pictures, posters, graphics and multimedia.	32.7%	44.3%	11.7%	7.7%	3.7%
10	Teacher knows how the students will learn.	30.3%	59.7%	4.0%	4.3%	1.7%
11	Teacher provides a supportive and challenging environments.	22.7%	68.0%	3.3%	5.0%	1.0%

Item 7 shows that the majority of the respondents (14.3 + 46.3 = 60.6%) responded that students agreed that A. V. aids promote students' English learning, whereas respondents (10.3 + 2.7 = 13.0%) responded that students disagreed that A. V. aids promotes students' English learning. Therefore, it is concluded that most students agreed that A.V. aids promote students' English learning.
Item 8 shows that most respondents (18.0 + 55.0 = 73.0%) responded that students agreed that the teacher teaches critical thinking skills, whereas respondents (10.0 + 2.7 = 11.3%) responded that students disagreed that the teacher teaches critical thinking skills. Therefore, it is concluded that most students agreed that the teacher teaches critical thinking skills.
Item 9 shows the majority of the respondents (32.7 + 44.3 = 77.0%) responded that students agreed that they perceived through pictures, posters, graphics, and multimedia, whereas respondents (7.7 + 3.7 = 11.4%) responded that students disagreed that they perceived through pictures, posters, graphics, and multimedia. Therefore, it is concluded that most students agreed that they perceived through pictures, posters, graphics, and multimedia.
Item 10 shows that most respondents (30.3 + 59.7 = 90.0%) responded that students agreed that the teacher knows how the students will learn, whereas respondents (4.3 + 1.7 = 6.0%) responded that students disagreed that the teacher knows how the students will learn. Therefore, it is concluded that most of the students agreed that the teacher knows how they will learn.
Item 11 shows that most respondents (22.7 + 68.0 = 90.7%) responded that the teacher provides a supportive and challenging environment, whereas respondents (5.0 + 1.0 = 6.0%) responded that the teacher provides a supportive and challenging environment. Therefore, it is concluded that most students agreed that the teacher provides a supportive and challenging environment.

Table 3: Active processing

S#	Statement	SA	S	UD	DA	SDA
12	Problem solving is an active technique for English learning.	13.7%	58.3%	17.3%	7.0%	3.7%
13	Brain based activities are based on emotions.	18.0%	59.0%	10.3%	9.7%	3.0%
14	Brain based learning activities are based on communication skills.	25.0%	59.3%	7.7%	6.7%	1.3
15	Brain based learning helps to understand students' anxiety.	16.0%	58.3%	12.0%	11.3%	2.3%
16	Teachers assess students' English learning through communication.	16.7%	65.0%	5.7%	7.7%	5.0%

Item 12 shows that most respondents (13.7 + 58.3 = 72.0%) responded that problem-solving is an active technique for English learning, whereas respondents (7.0 + 3.7 = 10.7%) responded that problem-solving is an active technique for English learning. Therefore, it is concluded that most students agreed that problem-solving is an active technique for English learning.
Item 13 shows that most respondents (18.0 + 59.0 = 77.0%) responded that brain-based activities are based on emotions, whereas respondents (9.7 + 3.0 = 12.7%) responded that brain-based activities are based on emotions. Therefore, it is concluded that most students agree that brain-based activities are based on emotions.
According to item 14, the majority of respondents (84.3%) believe that communication skills form the basis of brain-based learning activities, whereas a small percentage (6.7 + 1.3 = 8.0%) disagree. Thus, the majority of students believe that communication skills form the basis of brain-based learning activities.
Item 15 reveals that while the majority of respondents (16.0 + 58.3 = 74.3%) found brain-based learning helpful in understanding students' anxiety, a small percentage (11.3 + 2.3 = 13.6%) reached the same conclusion. So, most students think brain-based learning sheds light on students' anxiety.
Item 16 shows that most respondents (16.7 + 65.0 = 81.7%) responded that teachers assess students' English learning through communication, whereas respondents (7.7 + 5.0 = 12.7%) responded that teachers assess students' English learning through communication. Therefore, it is concluded that most students agreed that teachers assess students' English learning through communication.

5. Conclusion

Research examining the efficacy of brain-based learning systems in secondary schools has shed light on many facets of education. Looking at the survey results, we may learn a lot about how the teachers felt; what students experienced in class. First, when asked about the connection between correctly hydrated and improved cognitive performance, most respondents said drinking enough water improves cognitive performance. In light of this, it is critical to encourage kids to adopt healthy routines in order to maximize their cognitive abilities.
Also, according to the research, most teachers think that their classroom is an excellent place to work together, which bodes well for their future collaborative projects. This highlights the importance of creating a welcoming and safe classroom for students' personal and intellectual growth. Also, the results show that instructors are essential in getting their pupils to talk in English, which is necessary for learning and becoming fluent. This shows how critical it is to have teaching methods that get students involved and excited about learning a new language.
The study's findings also highlight the significance of designing settings to promote focus, engagement, and concentration since these lead to improved student learning. This emphasizes the importance of teachers taking into account the psychological and physiological components of the classroom setting.
The fact that most students thought moral tales helped them make connections shows how valuable it is to use narrative-based methods to improve students' understanding and critical thinking abilities. Furthermore, most students acknowledged music as a means of relieving stress, which implies that it may help alleviate anxiety and tension during the educational process.

Another interesting finding is that most students had a positive impression of using audiovisual aids, which suggests that they are beneficial in improving learning experiences and comprehension. The survey also showed that students have much faith in their professors' abilities since they believe their teachers have the necessary knowledge to help them learn.

Also, most students said that addressing problems is an active way to learn English, which shows how important it is to teach kids to think critically and solve problems when learning a new language. Furthermore, most students believed that brain-based activities were focused on communication and emotions, which shows how the cognitive and affective domains are interdependent in learning. Lastly, the study noted that teachers mainly evaluate their students' English competency through conversation, highlighting the significance of practical communication skills and oral fluency in language evaluation.

Lastly, the findings of this study emphasize the need to design engaging, safe, and productive secondary school classrooms employing brain-based learning approaches. Reflecting on and sharing students' opinions and experiences allows teachers to better fulfil their students' needs and raise the bar for student accomplishment. The study's potential recommendation of brain-based learning strategies could point to better outcomes in both primary and secondary education.

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