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Brain Based Learning to Develop English Skills among Secondary School Students at District Sialkot

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Abstract

Brain-based learning (BBL) means you accept how the brain works and then organize information based on these rules to learn something useful. The study's main goal was to find out how important brain-based learning is in how high school students learn languages, especially how they learn English. This research was purely descriptive. All high school students in the Sialkot district were included in the study. Simple random sampling was used to pick 300 students (150 males and 150 females) from the population under investigation. The study relied on a self-designed questionnaire comprised of six scales and 24 items. Researchers went to the population sites to collect the data in person. Statistical tests like the minimum, maximum, mean score, standard deviation, and t-test were used to examine the study's goals. Brain-based learning makes learning vocabulary easier for male students, according to the study, while it makes female students feel more at ease. Also, there is a big difference between how well male and female students speak English. In a brain-based learning classroom, male students are more aware and active when speaking English than female students are. Thus, the researchers concluded that brain-based learning is an active method for teaching a foreign/second language, in this case, English, and that male students are more adaptable to learning English vocabulary and speaking due to the prevailing brain-based learning environment in the classroom.

***Keywords*:** Brain-based learning, English skills, Secondary school students

1. Introduction

Brain-based learning is a way of teaching that focuses on how the brain takes in information and remembers it. The ideas behind this method come from neuroscience, the scientific study of the nervous system. Brain-based learning strategies are designed to take advantage of the brain's natural learning processes. These strategies can help students understand and remember the material more effectively. Some of the strategies used in brain-based learning include:

- Providing students with meaningful and relevant contexts for learning
- Using visual and auditory strategies to help students remember information
- Structuring lessons around activities that involve movement
- Engaging students in interactive activities that promote problem-solving and creativity
- Asking students to reflect on what they have learned
- Focusing on the development of "higher order" thinking skills
- Utilizing brain breaks to give students a chance to rest and recharge

Teachers can improve their classroom settings for student learning by utilizing brain-based learning strategies (Ali, Kashif, & Shahzad, 2020). Students benefit from this method because it gets them to learn more actively and makes it more likely that they will remember what they have studied.

Brain-based learning (BBL) is accepting the rules of how the brain works and then organizing the information with these rules in mind to achieve learning that can be meaningful (Caine & Caine, 1994). It is a way of thinking about the process of learning. It is a set of principles and a foundation of knowledge and skills that allow us to make better decisions about the learning process (Jensen, 2008). The goals of brain research studies (Gülpnar, 2005; Tileston, 2005; Zadina, 2004) are to teach about individual differences, use different teaching methods, and make the most of the brain's natural learning processes. Without knowing how the brain works, it is impossible to understand how learning works.

The brain is a complicated organ that controls many of the body's functions and is in charge of intellectual growth (Ali, Kashaf, & Chani, 2019). Learning's complex nature can be grasped only by appreciating the brain's intricate neural circuitry. For example, the hippocampus is important for making new memories and ensuring they stick, like when you first learn a new skill or idea. The brainstem is in charge of analyzing the data and making decisions depending on what it learns. The basal ganglia also help control feelings when you learn a new skill or idea. When you practice a skill or idea, your brain makes stronger connections between neurons, which helps you remember it and get better at it.

Zull (2002) says that if you want to be a good teacher, you also need to know how to change how students act and think. Because the brain functions as a whole during learning, Kolb and Kolb (2005) claim that learning is most effective when it follows a single path via multiple circuits. Examining the brain should be the starting point of any educational endeavor. In contrast to challenges, threats might hinder educational growth (Caine & Caine, 1994). When it comes to teaching pupils to think critically, learning the language in a hands-on way is preferable to a more traditional approach, at least for elementary school-aged children studying English.

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This research argues for using BBL to instruct ESL in Punjabi elementary schools. The final product is a guidebook for teachers of ESL students based on BBL methods (ELLs). Language instructors and English language learners (ELLs) can benefit from a better understanding of the brain's regions, their respective functions, and the impacts of second-language acquisition (L2). Due to the importance of understanding how the brain functions and absorbs information, brain-based learning is crucial in the classroom while teaching English as a second language. Per the authors, "Brain-based learning is all about knowing how our brain works and then applying that information to improve student results" (Jensen, 1998, cited in Valipour & Araghi, 2014; Ali, 2022). The capacity to read, write, speak, and understand English is called "English skills." Communicating well in English is helpful in many situations, such as school, work, socializing, and traveling. Reading, writing, speaking, and listening to English regularly are essential to becoming fluent. Studying English grammar rules and words can help someone learn the language better. Speaking is a natural language action that allows someone to interact and communicate with others. Chaney (1998) says that speaking is the process of making and sharing meaning using verbal and nonverbal symbols in different situations. Speaking ability is important for one's career, but it is not limited to one's professional aspirations. The ability to communicate in English is crucial in international relationships. It becomes a local content in primary school, a compulsory subject in junior and senior high school, and a complementary subject in higher education. According to the researcher's findings, students have difficulty learning English, particularly speaking skills.

In class, the students were quiet. They were terrified and shy. It is especially true when a teacher initiates interaction by asking questions or instructing students to describe something to the class and expects at least one student to respond. However, the students can still not respond to the question or say something. Students are reluctant to provide feedback. These caused significant difficulties for students when presenting questions or answers about the material or lesson in class. In response to the problems faced by teachers and students above, the researcher suggests Brain-based learning strategies to overcome their problems and try to boost their level of learning and speak confidently.

Because of the variety of experiences that teachers and English language learners (ELLs) have in the learning process, teaching English as a second language (ESL) has been difficult. Since the knowledge of the brain, the brain-based learning approach (BBL) is a significant way to engage ELLs to maximize their skills. BBL aims to help teachers and ELLs understand the brain's areas, functioning, and the importance of stimulating it for effective learning. The human brain's role in thinking(T), emotions(E), and memory(M) are vital. It is logical to examine the teaching-learning process to investigate the human brain's effectiveness in English.

Most rural schools in Punjab use L1 (Punjabi) as a mode of communication. Students need help with speaking English as a second language. Pakistan is a developing country. Its literacy rate could be more commendable. The situation is even worse in rural areas. Kannan (2009) said that students could not master English until they had been in school for twelve years. He said that the bilingual method is used in language classes to help only slow learners. Different languages/dialects are used as L1 in Pakistan based on geographical boundaries. Punjab is Pakistan's largest province. In comparison to other provinces, Punjab has a slightly higher literacy rate (www.ilm.com.pk/pakistan-information/pakistan-literacyrate/).

Secondary school students need help with English speaking, and learning skills due to the lack of resources and unavailability of English teachers who know the best do's and don'ts. Language is the core element of all educational actions because it is the primary source for transmitting information and knowledge. The medium of instruction is a major problem in all aspects. Especially in Pakistan, in which various systems of education are followed. Almost all public and private institutions use English as a teaching medium. English as a second or foreign language it is difficult for Punjabi students to understand the concepts of this language, but it is believed that learning English is compulsory for science and technology, as well as for higher education.

The prime objective of the present endeavor is to explore the brain based learning method for developing English skills among secondary school students. Adjust and develop their pedagogical strategies for the course of English. Attitudes determine and help to decide the way students adopt learning. Developing positive attitudes and a friendly environment towards learning ESL is a good way for non-native speakers. Today, old methods and strategies are not acceptable for learning and practicing a second language.

Concerning the problems mentioned above, the researcher proposes a solution to overcome the problems, brain-based learning as one of the Cooperative Learning techniques to reduce students' speaking. It may become exciting if Punjabi primary students are motivated to learn English speaking skills. BBL and teaching methodologies can improve student learning, especially for second-language learners.

The current study looks into developing English language skills through brain-based learning method secondary school students. Brain-Based Learning (BBL) is a teaching method that approaches students' achievement and learning objectives from the perspective of the human brain. It entails specialized learning procedures that focus on how human memory, attention, motivation, and conceptual cognitive learning function. This study aimed to look into the effect of the BBL approach on Punjabi primary school student's academic performance in English. How do you design a study investigating the Effect of Brain-Based learning on developing English Skills among Punjabi Primary School Students? English is a problem for learners at primary school, whereas English speaking is difficult for students as far as a teacher. They feel anxiety in English speaking. The research objective of the

study was: To explore brain-based learning method in developing English skills among secondary school students at district Sialkot.

2. Review of Related Literature

Yagcioglu (2014) says that putting brain-based learning strategies into ESL programs has several good effects. Classes will do some practice exercises. You will be pointed to these helpful online resources for cognitively stimulating tasks. Science has shown that when the mind and the tongue work together, the result is richer learning. Ping Li (2017) found that the activation of different brain parts causes many aspects of language. These include lexicon (remembering words), phonology (how you hear), spelling (how you see), grammar (syntax), and pragmatics (how you use language in social situations). Also, Fingelkurts et al. (2010) argued that to advance our understanding of the distinctions between human and non-human brains; we must consider the biological roots of language. The cognitive functions of perception, memory, and thought; verbal and nonverbal communication; and brain regions that direct cognitive processes are all intertwined in language, as described by Bournot-Trites et al. (1995).

A classroom is a place where both students and teachers can find motivation. Students in brain-based classes showed their special skills by building on what they already knew to learn new, relevant information (Fogarty, 2009). These shifts in the classroom have energized the brain-based learning process and led to the pupils' acquisition of a wider range of abilities. According to Fogarty (2009), children understand the function of thought in learning and the structure of the thought process. There are three main phases to the training technique in cognitively friendly classrooms: "alerting," "coordinated immersion," and "active therapy" (or problem-solving) (Caine, Caine & McClintic, 2002).

Predictable training in Pakistan has historically been hampered by several factors, including the aforementioned limiting environments, the course book, educators' concluding attitudes, and the first practice of "learning with packing" (Massaro, El-Dib, Glass, and Aly, 2008). Paralinguistic and prosodic aspects distinguish spoken language from written language. Widiati & Cahono (2016) say these things include voice tone, rate, volume, gestures, correct pronunciation, intonation, stress, rhythm, and pauses. Bygate (1987) says that spoken language is less structured and makes less sense than written language. Unlike writing, which is more structured and coherent, speech can be brief and straightforward. Sana and Fenesi (2013) explain that grammatical competence, discourse competence, sociocultural competence, and strategic competence affect how well a person can speak.

Brown (2002) says that activities that only focus on a small number of language structures through simple repetition, replacement, and slot substitution drills only make students' short-term memories work harder and do not help them get better at communicating. Pardede (2019) says that encouraging students to participate in communicative activities that strengthen the bond between the teacher and students and between the students themselves will help them become more confident public speakers and create an environment that is good for learning a language. Activities such as free conversation, task-based education, a jigsaw puzzle, games, problem-solving, dramatization, role-play, group work, pair work, and oral reading can help students become more confident public speakers. Modern teachers would learn more about brain science to help them make better decisions about teaching their students. Brain-based learning (BBL) has helped students meet their specific needs because they face many challenges in school.

Education that considers our current understanding of the brain's workings is called "brain-based education" (Marope, 2016; Mayer, 2017). Education methods that focus on the brain are becoming increasingly popular in countries worldwide (Connell, 2009). Willis (2007) looked at ways to improve students' cognitive skills in the classroom that are backed up by evidence. Duman (2006) said that speeding up learning is a top priority and that it is important to use brain-based strategies to improve teaching and learning settings. Using manipulative, active learning, field trips, guest lecturers, and real-world projects are all ways that students can be encouraged to use their learning strengths.

BBL is widely used in the classrooms of those who teach the sciences, the humanities, and foreign languages. It combines different approaches (Ali, Kashif, & Chani, 2009). Using strategies and methods from brain-based learning (BBL), we can create an environment that makes it easier to learn new things. Positive learning environments are made so students can learn the most while spending the least time memorizing platitudes, according to (Noureen, Awan, and Fatima, 2017’ Abdullah et al., 2013). Because this is such a big problem, the researcher in this study tried to figure out how to use BBL to improve the English skills of primary school students who are learning English as a second language.

3. Research Methodology

The researchers used a descriptive research method for the study. They took a convenient sample of three hundred secondary school students (male = 150 and female = 150) who were studying in the 10th grade, and their ages ranged from 15 to 18 years. The researchers used a questionnaire as a research tool to reach the study's research goals. The questionnaire was made by writing down the brain-based learning principles and methods for helping high school students improve their English skills. The questionnaire was composed of 6 sub-scales based on developing English skills, while the questionnaire was finalized with 24 items after the tool validation process.

The researchers visited the study sample and successfully achieved their data collection target. The data already set up used the maximum, minimum, mean score, standard deviation, and t-test statistical methods.

4. Data Analysis

Table 1: Descriptive analysis

Sr#	Scale	Min	Max	M	SD
1	BBL improves English	1.43	4.69	4.31	0.78
2	BBL increase vocabulary	1.61	4.55	4.41	0.67
3	BBL helps in learning grammar	1.03	5.00	4.24	1.11
4	BBL makes reading easy	1.34	4.73	3.54	0.58
5	BBL improves writing skills	1.53	4.78	4.21	0.71
6	BBL helps in speaking skills	1.76	4.41	3.78	0.59

Table 1 indicates the utilization of brain based learning for developing English skills among secondary school students. In the above-mentioned table the means score of the sub-scales increase from 3.54 to 4.41 and standard deviation from 0.58 to 1.11 that shows brain based learning principles and techniques are quiet helpful in the learning of English especially in the area of vocabulary learning whereas it also improves the general English. Simultaneously, brain based learning improves students writing skills. Brain based learning techniques also contribute for encouraging students to speak English without fear or anxiety.

Table 2: Inferential Statistics

Sr#	Scale	Gender	M	SD	t-test
1	BBL improves English	Male	4.28	0.69	2.01
		Female	4.31	0.78	
2	BBL increase vocabulary	Male	4.16	1.02	1.59
		Female	4.41	0.67	
3	BBL helps in learning grammar	Male	4.85	0.86	0.72
		Female	4.24	1.11	
4	BBL makes reading easy	Male	4.01	1.02	0.88
		Female	3.54	0.58	
5	BBL improves writing skills	Male	4.07	0.58	-0.58
		Female	4.21	0.71	
6	BBL helps in speaking skills	Male	4.01	1.12	1.28
		Female	3.78	0.59	

Table 2 interprets male and female respondents' perception about the working of brain based learning principles and techniques for developing English skills among secondary school students. The values of means score rises from 3.54 to 4.85 whereas the value of standard deviation from 0.58 to 1.12 and the t-value includes from -0.58 to 2.01. Male and female have a significant difference in the perception of learning vocabulary through brain based learning whereas there is a significant difference between male and female perceptions regarding English reading easy through brain based learning. The study also found that there is a difference in male and female speaking skills through brain based learning.

5. Findings and conclusions

The modern language teacher uses the principled eclecticism method, which means that the method is changed to fit the learner and not the other way around. It means choosing the methods and exercises that work best for each task, setting, and learner, focusing on encouraging motivation, and helping learners become independent and eager to learn more. All over the world, teachers are now using the brain based learning method for teaching foreign language i.e. English. The current study found that brain based learning helps and support the learners for learning different language skills with ease because this method based on natural ways. The study also found the difference between male and female respondents' English skills through brain based learning among secondary school students. In some of the learning areas, male and female students have significant difference in their perceptions. It is found that male students are more relaxed in learning vocabulary through brain based learning and feel ease as compared to female students. Furthermore, there is a significant difference in male and female student in their English speaking and male students are more vigilant and active in speaking English in brain based learning classroom as compared to female students. So, the study concluded that brain based learning is an active method for teaching a foreign / second language i.e. English and the male students are more adaptable for learning English vocabulary and English speaking due the brain based learning environment prevailing in the classroom. Furthermore, it is also concluded that students feel relaxed and ease in brain based learning classroom due to its flexibility and adaption in the environment. The study also concluded that high school students can greatly benefit

from brain-based learning to improve their English skills. It considers each student's unique requirements to provide a focused and individualized education. Critical thinking and spoken communication are two abilities that can be honed through mental exercises like class discussions and debates. On the other hand, they can develop their imagination and problem-solving skills through play. If teachers take the time to get to know their students and create engaging lessons based on those observations, they may help their students learn English in an enjoyable and challenging way.

5.1. Recommendations

Based on the study, it might be a good idea for teachers of foreign languages to use methods based on how the brain works. The research could lead to ways to make brain-based learning strategies for learning English as a second language more effective.

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