ISSN 2584-041X
VOL.05 ISSUE 02

To Encourage an Inclusive and Equitable Classroom Environment by Brain Based Learning Strategies

SALONI (NDF, NCERT Fellow)
Research Scholar,
Department of Pedagogical Sciences,
Dayalbagh Educational Institute, Agra (U.P)
Email Id-raghavsaloni0000@gmail.com

ABSTRACT

Brain-based learning is presented in this study as a technique to support a classroom environment inclusive of college and university-level students with impairments. Considering the population with disabilities as one of the main groups to consider adopting various learning styles to improve disabled kids learning, this study aims at encouraging reflection on the techniques to address diversity in the classroom. The Ministry of Public Education of Uttar Pradesh is switching from a rehabilitative approach to an inclusive education approach within the conceptual approach since education is regarded as a fundamental human right and helps to address diversity in the Indian education system. One approach to increasing knowledge of pedagogical mediation in the classroom setting is brain-based learning. Brain-based learning generates a secure, danger-free environment where relevant material supply and knowledge are suitable for children (Amjad, A. Habib, M., & Saeed, M., 2022). The approach applied clarifies the methods by which students apply the neurological process via the brain using different learning methodologies. It is concluded that attaining an inclusive educational process depends critically on the essential teaching methodologies suggested to suit the educational demands holistically.

Keywords: Brain-Based Learning, Inclusive Education, Equitable Classroom, Diversity, Pedagogical Mediation, activities.

Introduction:

The junction of neuroscience and pedagogy in modern education has produced the idea of brain-based learning, a dynamic method that fits teaching tactics to match how the brain learns most effectively. This research investigates how the ideas of brain-based learning could be a powerful instrument for creating inclusive and fair classrooms. It is clear as we explore this subject that establishing an educational environment that welcomes every student depends on appreciating and using the many cognitive processes of individual students. A one-size-fits-all approach usually rules traditional education, therefore unintentionally ignoring the particular learning styles and skills of each student. Emphasising that no two brains are alike, brain-based learning acknowledges and welcomes the natural variety among students. Knowing the neurological complexities of cognition helps teachers customise their approaches to fit different

learning environments, therefore guaranteeing that every student has the chance to excel academically. This study will investigate how brain-based learning not only helps to correct student cognitive differences but also acts as a driver of inclusiveness and equity. Teachers may foster the potential of every student, regardless of their cognitive profile, by realising the value of personal diversity in the learning process and therefore building a motivating and stimulating classroom. The path into brain-based learning presents a bright future for transforming schools, honouring diversity, advancing equity, and opening the path for a more inclusive learning environment.

Neurodiversity in Education:

In education, neurodiversity offers a complex tapestry of cognitive characteristics, including autism spectrum illnesses from ADHD to dyslexia. Accepting this variety, brain-based learning ideas provide a sophisticated method of instruction fit for many neurological profiles. One important factor is the modification of the instructional strategies. While conventional teaching methods might not appeal to neurodiverse pupils, brain-based learning acknowledges the necessity for customised plans. For visual learners, for instance, adding hands-on exercises for kinesthetic learners or using mnemonic devices for individuals with memory problems. Customised teaching strategies are absolutely essential in building an environment conducive to neurodiverse education. It entails realising personal strengths and difficulties, then modifying educational materials and delivery to fit every student's particular cognitive process. Teachers may help to establish an atmosphere in which neurodiverse pupils feel respected and included, in addition to excelling academically. This flexibility covers classroom structure, evaluation techniques, and group projects in addition to material delivery. It entails encouraging among colleagues and teachers the knowledge that neurological variations are not obstacles but rather aspects of a varied learning community. Basically, the application of brain-based learning ideas in education provides a road map for turning classrooms into neurodiverse-friendly environments and fostering equity by guaranteeing that every student, regardless of their neurological profiles, has access to an education that honours their unique cognitive strengths.

Adapting Curriculum for Varied Learning Styles:

Curriculum adaptation for different learners calls for a deliberate and inclusive strategy to handle multiple learning styles and competencies. Using brain-based learning ideas, teachers may customise curriculum design and delivery to create an atmosphere that promotes involvement and understanding for every student. Understanding that pupils have varied learning styles helps teachers include a range of teaching strategies in the curriculum. Including

visual aids, interactive exercises, and hands-on projects, for instance, helps to accommodate several learning styles and guarantees that material is available to kinaesthetic, visual, and auditory learners alike. This adaptation is greatly aided by personalised learning strategies. Giving students options in how they show knowledge or chances for self-directed research lets them have a more unique learning experience. Technology may also be used to provide adaptive learning tools or resources catered to every student's speed and style. The effects of individualised learning on student engagement and understanding are thus very noteworthy. Students' drive rises when they feel connected to the content and have autonomy, which improves understanding and memory. Moreover, a curriculum reflecting many points of view and experiences improves the general inclusiveness of the learning environment. Finally, using brain-based learning ideas to modify the curriculum for different students calls for a dynamic and adaptable strategy. Teachers help to create an inclusive and interesting learning environment that enables students to achieve by appreciating and allowing various learning styles and capacities.

Technology Integration for Inclusive Learning:

Including technology in brain-based teaching approaches offers a strong way to produce inclusive and easily available learning environments. By using technology, one may accommodate many learning styles and talents, therefore enhancing the dynamic and interesting nature of education. Technology helps inclusive classrooms by providing adaptable learning environments that suit personal requirements. For auditory, visual, and kinaesthetic learners, audiobooks, interactive simulations, and virtual reality can offer substitute approaches to delivering knowledge. Moreover, assistive technologies are very important in levelling the playing field for kids with different capacities. Among the tools that enable students with impairments to fully engage in the learning process are speech-to-text software, screen readers, and adaptable keyboards. There are several successful models of technology-enhanced, inclusive classrooms. Virtual classrooms, group projects enabled by cooperative online platforms, and interactive learning applications let students with different needs connect peer-wise and build a sense of community. Furthermore, gamification of learning via instructional applications may make the learning process more fun and easily available for many different kinds of students. Basically, including technology in brain-based education not only meets different learning requirements but also improves the general inclusiveness of the educational process. The success of this kind of integration depends on the deliberate choice and application of technological tools that fit the ideas of brain-based learning, thereby enabling an environment in which every student may flourish.

ISSN 2584-041X
VOL.05 ISSUE 02

Teacher Training and Professional Development:

Providing teachers with brain-based learning methodologies' training is rather important in helping to create a more inclusive and fairer classroom. Professional development in this field helps educators grasp and use the neuroscientific ideas supporting successful learning, therefore promoting a dynamic and flexible attitude towards education. Training in brain-based learning helps teachers customise their teaching strategies by giving them an understanding of the several ways that students' brains process information. This customisation then fits a range of learning styles and talents, therefore enabling an atmosphere in which every learner may flourish. The results of such professional growth affect the whole educational environment rather than only the individual teacher. By being better able to identify and meet the particular requirements of their pupils, teachers educated in brain-based learning help to provide more individualised and successful teaching strategies. This improves student involvement as well as academic performance among many different student groupings. Moreover, a cadre of teachers knowledgeable in brain-based learning ideas promotes inclusive and cooperative classroom environments. It guarantees that the advantages of brain-based learning penetrate the whole educational institution by encouraging the exchange of best practices and the formulation of initiatives supporting fairness. To sum up, a more inclusive and fair learning environment is mostly dependent on funding the professional development of teachers using brain-based learning approaches. It enables educators to be agents of good change, therefore transforming classrooms that honour diversity and offer every student a rich learning environment.

Cultural Sensitivity in Brain-Based Learning:

Encouragement of fairness in education depends on including cultural sensitivity in brain-based teaching strategies. Teachers may improve the efficacy of brain-based learning by recognising and including many cultural backgrounds, therefore fostering a more inclusive and relevant learning environment. Knowing that cultural factors alter cognitive processes, teachers can customise their lessons to appeal to pupils from all backgrounds. This entails including references, tales, and instances reflecting the variety of the student population, thereby enhancing the relevance and value of the learning materials. Furthermore, in brain-based learning, cultural sensitivity acknowledges how learning styles are shaped by cultural standards. For example, certain societies could prioritise solo introspection, while others might give cooperative learning more importance. Teachers who recognise and accommodate these preferences will be able to establish a classroom where many ethnic approaches to learning are honoured. Including elements from several cultures in inclusive curricula not only

ISSN 2584-041X
VOL.05 ISSUE 02
acknowledges the kids' identities but also extends their horizons. Since students find themselves reflected in the learning resources, it fosters equity and belonging. Basically, a first step towards establishing a fair learning environment is the inclusion of cultural aspects into brain-based teaching approaches. It guarantees that brain-based learning is not only neurologically sound but also culturally sensitive, therefore creating an inclusive environment wherein every student may shine and feel respected.

Student Engagement and Motivation:

Particularly for individuals having difficulties in conventional learning contexts, brain-based learning approaches are quite important in increasing student involvement and motivation. Knowing the neurobiology of learning helps teachers use techniques that fit different learning environments, therefore enhancing the dynamic and interesting nature of the educational process. One important factor includes multimodal events. Brain-based learning understands that using several senses improves the memory of knowledge. Teachers may build an interesting learning environment that suits different learning styles by combining interactive components, hands-on exercises, and visual aids, therefore raising involvement. Furthermore, underlined by brain-based learning is the need for relevance and practical links. Students develop a natural drive when they can understand how useful what they are studying is. For students overcoming conventional learning obstacles, this is particularly relevant, as it gives the material a physical setting and increases the significance of the learning process. Another advantage of brain-based techniques is their personalisation of learning opportunities. Motivation may be greatly improved by realising personal strengths and customising teaching strategies to fit students' interests and capacities. Those who would feel bored in a conventional classroom environment really benefit from this. Ultimately, by attending to the many needs and preferences of students, brain-based learning strategies help to increase student involvement and drive. Teachers may inspire and empower their students—especially those who might have difficulty in conventional learning environments—by designing an atmosphere that appeals to the neurobiological complexity of motivation.

Assessment Strategies for Inclusive Equity:

Innovative assessment strategies aligned with brain-based learning principles are instrumental in fostering equity in education. By recognising and accommodating diverse learning styles and abilities, these assessments contribute to a more inclusive and equitable educational environment.

1) Alternative Assessment Formats: Investigate tests other than conventional ones, such as performance assignments, portfolios, or project-based examinations. These approaches let

students show knowledge in ways that fit their particular abilities, therefore promoting a more fair assessment system.

2) Formative Assessment Techniques: Implement ongoing, formative assessments that provide real-time feedback. Brain-based learning recognises the importance of continuous feedback to enhance understanding. This approach allows for timely interventions, benefiting students who may require additional support.

3) Universal Design for Assessment: Apply universal design ideas to tests so they may be used by a wide spectrum of students. Think about including several ways of expression, representation, and involvement that fit various learning environments and skill levels.

4) Self-Assessment and Reflection: Urge pupils to think about and evaluate themselves. Brain-based learning recognises the need for metacognition, and self-assessment helps one have a better awareness of their own learning process, thereby supporting a fairer evaluation system.

5) Collaborative Assessments: Add group projects using peer learning's potential. Collaborative evaluations provide students with chances to gain from many viewpoints and collective knowledge, as brain-based learning acknowledges the social aspect of learning.

6) Flexible Timing and Settings: Recognise that students may thrive in different environments and at different paces. Offer flexibility in assessment timing and settings, allowing students to showcase their abilities in conditions that optimise their performance.

7) Inclusive Rubrics: Develop inclusive and transparent rubrics that clearly communicate expectations. This helps ensure that students understand the criteria for evaluation and promotes a fair and consistent assessment process.

Aligning assessment methods with brain-based learning principles involves recognising and accommodating diverse learning needs. By embracing innovative and inclusive assessment strategies, educators contribute to the creation of an equitable educational environment that values and assesses the diverse strengths and abilities of all students.

Conclusion:

The Research on brain-based learning shows how inclusive and fair classrooms may be created. Teachers who embrace the complex interactions between neuroscience and education may customise their methods to fit various learning environments, aptitudes, and cultural backgrounds. Important results highlight the need for individualised learning, the integration of technology, and cultural sensitivity in brain-based teaching approaches. These strategies improve student involvement, motivation, and understanding, as well as helping to create a more inclusive and fairer classroom. The capacity of brain-based learning to acknowledge and

appreciate the individual cognitive profiles of children defines its strength. This awareness creates a setting in which variety is not only appreciated but also used as a strength. It guarantees that every student, from any background or learning style, has access to a rich and fair learning environment, therefore helping to destroy conventional barriers in education. Considering the possibilities of brain-based learning, it is imperative to underline the continuous necessity of study and application. Constant research and improvement of these teaching strategies will help us better know how to apply neuroscience in the service of inclusion and equity. By means of continuous dedication to research and application, we may open the path for a time when brain-based learning becomes the pillar of the building of really inclusive and fair learning environments.

REFERENCES

1. **Agrawal,M.(2021).**National Education Policy 2020: A Paradigms Shift in Indian Educaion. Journal Of Education and Practice,12(2),pp1-8.
2. **Amjad,A .Habib,M & Saeed,M.(2022).** The Effects of Brain Based Learning Approach on Creativity and Students Achievement in Mathematics Learning Pakistan Journal of Social Research ,ISSN 2710-3129 (P) 2710-3137 (O),Vol. 4, No. 3, September 2022, pp. 38-51.
3. **Aparna, M., & Smita, P.(2014)** Fostering Student Creativity Using Brain Based Learning.
4. **Caine, G. & Caine, R. N. (2000).** Understanding a brain based approach to learning and teaching. Retrieved from http://www.caineleaming.com/index.html
5. **Caine, G. & Caine, R. N. (2010).** Overview of the system principle of natural learning. Retrieved from, http: //www.cainelearning.com /files/summary.pdf
6 . **Caine, R. Caine G,Carol,Mc.1,Karl K.(2016),**12 Brain learning principles in Action,Third Edition,Sage Publication.
7. **Chakraborty, S. (2020).** The New Education Policy 2020: A Critical Appraisal .International Journal of Education and Pedagogy, 2(1), 1-9.
8 .**Jensen, E.P.(2008).Brain**- based learning :The new paradigm of teaching(2th.ed).San Diego,CA:Crowin Press.
9. **Kaur, J. (2013).** Effectiveness of Brain Based learning Strategies on Enhancement of Life Skills among primary school students with internal and external Locus of Control. International Journal of Advancements in Research & Technology, 2(6), 128–143.
10.**Mekarina, M., & Ningsih, Y. P. (2017).** The Effects of Brain Based Learning Approach on Motivation and Students Achievement in Mathematics Learning. Journal of Physics:

Conference Series,895(1). https://doi.org/10.1088/1742-6596/895/1/012057•

11. Reddy, N. S. (2020). National Education Policy 2020: An Overview. Journal of Education and Practice, 11(18), 1-6.

12. Rehman,A.Malik ,M.Hussain,S&Rauf,M.(2012). Effectiveness Of Brain Based Learning Theory On Secondary Level Students Of Urban Areas. Journal Of Managerial Sciences, Vol. I V,pp 112-121

13.Sharma, R. (2020). National Education Policy 2020: Need, Objectives, and Challenges. International Journal of Applied Research, 6(11), 1-5.

14. Sousa,D.(2006). How the brain learns(2th ed).Thousand Oaks,CA:Crowin

Suryakumari,M.& Stanly, L.(2020).Effectiveness Of Brain Based Teaching Strategies To Enhance Pronunciation Among Prospective Teachers. International Journal Of Scientific& Technology Research,March,2020,VOL-9.

15. Wills, M.H. (2014). Brain matters: Translating research in to classroom practices. Englewood Cliffs, NJ:Prentice Hall

WEBSITES

Brain Based Learning , Retrieved from https://soeonline.american.edu/blog/brain-based-learning.

Brain Base Learning Principles, Retrieved from https://susanfitzell.com/12-brain-based-learning- principles/

Brain Base Learning Principles, Retrieved from http://hegelperuenglish.BlogSpot.com/2009/12/twelve- principles-for-brain-based.