

Brain Based Learning with reference to Academic Achievement, Academic Stress, Retention - Review of Related Literature

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Article Info	ABSTRACT
Article History: Received: 15th Dec 2025 Accepted: 19th Dec 2025 Published: 20th Dec 2025 Keywords: Brain Based Learning	This conceptual paper includes, the Review of Related Literature regarding Brain Based Learning Researches. Review of Related Literature helps researchers to place their studies within the larger context of existing research & develop a basis for interpreting their own results. For this Research, Researchers studied various researches and Articles regarding Brain Based Learning from India and Foreign Countries. As this Research investigates the Effectiveness of Brain Based Learning approach for Mathematics Education in terms of Mathematics Achievement, Academic Stress & Retention. These reviews helped to understand how brain is involved in Learning Process. The Researcher also reviewed researches where Brain Based Learning Principles & Brain Based Learning strategies have been carried out in Actual Classroom. These Brain Based Learning Reviews period is from 2015 - 2025.

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Introduction

Review of Related Literature (RRL)

Review of Related Literature is an important part of any research project, thesis/ dissertation. It provides a summary of current studies relevant to a particular research subject area.

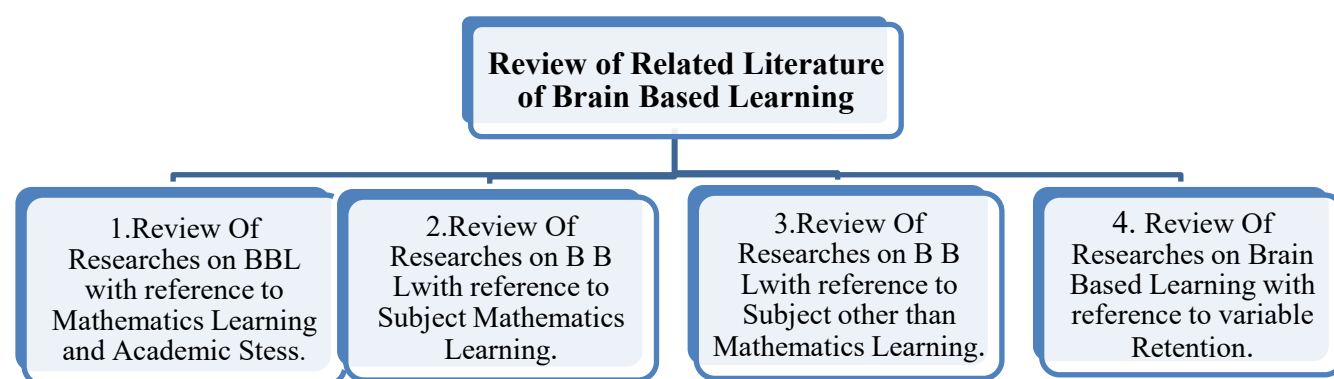
Mathematics : Mathematics should be visualised as the vehicle to train a child to think, reason, analyse, and articulate logically. Apart from being a specific subject, it should be treated as a concomitant to any subject involving analysis and meaning. **(National Policy on Education, 1986)**

❖ Importance of Review of Related Literature

- ✓ Establishes the Research Context
- ✓ Prevents Replication of Previous Research
- ✓ Guides Research Design and Methodology
- ✓ Supports the Theoretical Outline
- ✓ Enhances Credibility & Academic Value
- ✓ Review Of Related Literature

❖ Review Of Related Researches

Brain based Learning is independent variable and Academic Achievement, Academic stress, Retention are dependent Variables. Researcher has taken review of Indian and Foreign researches of Ph.D. , Journals etc.



1. Review Of Related Researches on Brain Based Learning with reference to Subject - Mathematics Achievement and Academic Stress

SrNo	Researcher	Year	Title	Effectiveness Of Independent Variable Brain Based Learning on Dependent Variable	University

1	cu	3	ct of Brain based Learning approach on academic stress and academic achievement among secondary school students in relation to their student mobile learning aptitude	Brain based learning strategies used in the experimental group was more effective in increasing student's academic achievement Brain Based Learning approach attained significantly reduced academic stress in comparison with the students in the control group	Maharshi Dayanand University Rohtak
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2A.Review Of Related Researches on Brain Based Learning with reference to Subject - Mathematics Achievement /Learning(PhD Level)

Sr No	Researcher	Year	Title	Effectiveness Of Independent Variable BBL on Dependent Variable	University
1	elina Keith Nunes	3	elopment of an Instructional Package Based on Brain Based Learning in Mathematics for students of std VIII	The BBL instructional package designed and developed with BBL approach was effective	University of Mumbai
2	il	2	ct of brain based learning programme on mathematics anxiety and academic achievement of secondary school students in relation to their learning styles	Experimental group taught with BBL Programme has attained higher achievement in mathematics	University Of Panjab
3	raj yadav	9	Designing and efficacy testing of brain based learning approaches in mathematics instruction for junior high school students	BBL has positive impact on the Academic achievement of Seventh Class students	UNIVERSITY OF LUCKNOW
4	Asha	2017	ct of brain based learning strategy and circles of learning strategy on achievement in mathematics and self efficacy of standard vii students	The score of achievement of students learned through BBL was more as compared to score of other two groups.	University Of Calicut
5	se phangi	6	udy of effectiveness of Brain Based Program on the achievement of fifth std students	BBL method were more successful in Mathematics Achievement	Tilak Maharashtra University,Pune

Ms. Angelina Keith Nunes, Vipul, Neeraj Yadav, Paul Asha, Godse Shubhangi - Five brain based researches in From India has seen positive effect of Brain Based Learning on achievement in Mathematics subject.

2B. Journal Review Of Related Researches on Brain Based Learning with reference to Subject - Mathematics Achievement (Foreign Countries)

Sr. No	Researcher	Year	Title Of Research	Effectiveness Of Independent Variable BBL on Dependent Variable
1.	Suarsana, I.M., Widiasih, N.P.S., & Suparta, I.N.	2018	The effect of Brain Based Learning on second grade Junior students mathematics conceptual understanding on Polyhedron	Positive impact of brain based learning programme was seen on Achievement in Mathematics

Suarsana, I.M., Widiasih, N.P.S., & Suparta, I.N.- Two Brain Based Learning impact of brain based learning strategies has been seen only in achievement of subject mathematics.

3A. Review Of Related Researches on Brain Based Learning with reference to Subject other than Mathematics Learning. (PhD Level India)

Sr	Researcher	Year	Title	Effectiveness Of Independent Variable BBL on Dependent Variable	University
1	ade G	2	elopment of brain based learning programme for mentoring skills of pre-service teachers and its' effectiveness	BBL program is effective for the development of integrated mentoring skills in the pre-service teachers	Savitribai Phule Pune University
2	edhar	1	The Effect of Brain Based Teaching on Application of Neurocognitive Strategies in Learning Science among Secondary School Students	Brain Based Teaching Strategies were significant in Learning Science among Secondary School Students	Tamilnadu Open University
3	nnath kunar	0	ct of brain based learning on self-regulation skill and learning achievement in science among secondary school students	BBL strategies was found to be significantly superior to traditional method in enhancing learning achievement in Science	Ravenshaw University Cuttack, Odisha
4	siya na	3	ct of brain based instructional strategies on achievement and self esteem in relation to perception of classroom environment among elementary school science students	Positive impact of Brain based learning strategies has seen on achievement of science and self esteem of seventh standard students.	Panjab University, Chandigarh

5	re Anita	3	ctiveness of Brain Based learning on brain hemisphere and Achievement in science.	There was significant increase in the achievement of science subject of experimental group students due to implementation of BBL Program	S.N.D.T.Women's University, Pune
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3A.Review Of Related Researches on Brain Based Learning with reference to Subject other than Mathematics Learning.(PhD Level India)

Sr	Researcher	Year	Title	Effectiveness Of Independent Variable BBL on Dependent Variable	University
6	ita	7	ct of brain based learning approach on life skills, academic achievement and motivation among adolescents in relation to their locus of control	Significant increase in the Life skill test ,achievement test, Motivation Test of experimental group students due to implementation of BBL Program	Panjab University, Chandigarh
7.	ris Aparna	2016	gramme based on BBL for developing writing skills	Positive impact of BBL Program on achievement of English subject of sixth standard students	Savitribai Phule Pune University
8.	Sadhana	6	A study of Effectiveness Of Brain Based Learning with reference to learning styles.	There was significant increase in the score of English achievement test, Educational concept ,Social self concept, attitude towards subject due to BBL	S.N.D.T.Women's University, Mumbai
9.	krishnan axmi	5	effect of brain-based learning strategy on academic achievement and creativity among secondary school students	BBL approach was significantly better than Traditional Approach	Avinashiln gam Institute of Higher Education

Rokade, Shreddhar, Kunar, Gausiya Fatma, Khaire Anita, Sumita, Morris Aparna, Mali Sadhana, Ramkrishnana J. – Nine Brain Based Researches From India has seen positive effect of Brain Based Learning on achievement in subject other than Mathematics subject. Experimental method was used in all these researches.

3B.Journal Review Of Related Researches on Brain Based Learning with reference to Academic Achievement in Subject other than Mathematics Learning. (Foreign countries)

Sr. No.	Researcher	Year	Title Of Research	Effectiveness Of Independent Variable BBL on Dependent Variable
1.	Kawthar Shabatat, Mahammed Al-Tarawneh	2016	The impact of a Teaching Learning Program Based on a Brain Based Learning on the achievement of the female students of 9 th grade in Chemistry	Positive impact of brain based learning programme on 9 th grade students

One Brain Based Learning Research has seen positive impact with reference to Academic Achievement in Subject other than Mathematics Learning.(Foreign Countries)

4.Journal Review Of Related Researches on Brain Based Learning with reference to Retention in Subject other than Mathematics Learning.(Foreign Countries)

Sr.No.	Researcher	Year	Title Of Research	Effectiveness Of Independent Variable BBL on Dependent Variable
1	Abdul Rahman & Ajineh	2025	The effectiveness of Brain Based Learning on students' Achievement and Knowledge Retention in Science.	BBL's positive influence on Long term retention.

One Brain Based Learning Research has seen positive impact with reference to Retention in Subject other than Mathematics Learning.(Foreign Countries)

❖ Summarization of Researches Related to variables - Academic stress, Academic Achievement and Retention.

While taking Review of Related Researches, Researcher came to know that, Effect of Independent variable - Brain Based Learning Program has not seen on three dependent variables - Academic stress, Academic Achievement and Retention in any research.

Epilogue / Conclusion

From Review of Brain Based Learning Researcher identifies research gaps in Previous Researches. Researcher gets help from reviews regarding Researches on Brain Based Learning to understand various Brain Based Learning principles, Brain Based Learning Environment, Evaluation systems in Brain Based Learning and strategies to prepare program on it.

These reviews helped Researcher to identify Brain Based Learning practices that

brought significant changes in studies on Learning and Achievement.

References

Marathi Researches

1. खैरे ए. (2018) मेंदू आधारित अध्ययनाचा नववोच्या विद्यार्थ्यांचे मेंदूप्राबल्य आणि विज्ञानातील संपादन यावर होणाऱ्या परिणामांचा अभ्यास
2. माळी एस. (2016) मेंदू आधारित अध्ययनाच्या परिणामकारकतेचा विद्यार्थ्यांच्या अध्ययनशैली संदर्भात अभ्यास

English Researches

3. Abdul Rahman, S., & Ajineh, A. R. (2025) *The effectiveness of Brain Based Learning on students' achievement and knowledge retention in science.*
4. International Journal of studies in Education and Science, 6(1), 48 – 65
5. Fatma, G.(2018) Effect of brain based instructional strategies on achievement and self esteem in relation to perception of classroom environment among elementary school science students.
6. Godse ,S. (2016) A study of effectiveness of Brain Based Program on the achievement of fifth std students
7. Jaylaxmi(2015) The effect of brain-based learning strategy on academic achievement and creativity among secondary school students
8. Morris, A.(2016)Programme based on BBL for developing writing skills.
9. Paul, A. (2017) Effect of brain based learning strategy and circles of learning strategy on achievement in mathematics and self efficacy of standard VII students.
10. Suarsana, I.M., Widiasih, N.P.S., & Suparta, I.N. (2018) The effect of Brain Based Learning on second grade Junior students mathematics conceptual understanding on Polyhedron. Journal on Mathematics Education,9(1),145-156.
11. Sumita (2017) Effect of brain based learning approach on life skills, academic achievement and motivation among adolescents in relation to their locus of control