The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 13, Issue 3, July- September, 2025
DIP: 18.01.260.20251303, DOI: 10.25215/1303.260
https://www.ijip.in

Research Paper

# Breaking the Cycle: How Brain Breaks Enhance Cognitive Performance in Educational Assessments

Dr. Mohitgiri P. Goswami[1]*

## ABSTRACT

This research investigates the impact of structured brain breaks on examination performance and mental well-being among Bachelor of Education (B.Ed.) trainees. Brain breaks, defined as short, intentional pauses during sustained cognitive effort, aim to relieve mental strain, enhance concentration, and reduce anxiety. Drawing on cognitive load and attention regulation theories, this quasi-experimental study divided 48 B.Ed. trainees into control and experimental groups, with the latter receiving a 15-minute brain break between exam sections. Quantitative analysis using t-tests revealed significant improvements in academic performance among students who received brain breaks, with higher mean scores compared to the control group. Additionally, qualitative feedback indicated increased concentration, reduced fatigue, and lower stress levels in the experimental group. These findings align with previous research by Godfrey and Turner (2016), Johnson and Smith (2018), and Martinez and Brown (2020), highlighting brain breaks' benefits across diverse age groups and cognitive tasks. Implications include the potential integration of structured breaks into examination settings to support both academic performance and student mental health, particularly for high-stakes exams. This study also offers future educators first-hand experience with brain breaks, which could shape future classroom practices. This paper suggests that educational institutions should consider incorporating brain breaks as an evidence-based approach to promote a holistic, student-centered learning environment.

***Keywords:*** *Brain Breaks, Academic Performance, Mental Well-being, Cognitive Load Management, Teacher Education*

The concept of "brain breaks" during exams has gained attention as educators and researchers explore methods to alleviate cognitive fatigue and improve academic performance. Brain breaks, defined as short, intentional pauses from prolonged cognitive activity, have been supported by multiple theories in cognitive science and psychology. These theories highlight the need for regular mental rest to manage cognitive load, sustain attention, and regulate stress, especially during high stakes testing environments. For instance, cognitive load theory emphasizes the limited capacity of working memory, suggesting that breaks allow students to process and reorganize information, reducing the risk of cognitive overload (Sweller, 1988; Paas & Van Merriënboer, 1994). Additionally, attention restoration theory (Kaplan, 1995) posits that

[1]Assistant Professor, Department of Education, Sardar Patel University, Vallabh Vidyanagar, Anand, GJ.
*Corresponding Author

**Received: March 22, 2025; Revision Received: August 27, 2025; Accepted: August 31, 2025**

brief disengagement from cognitive tasks restores mental clarity and focus, thereby enhancing sustained attention and academic efficacy upon returning to the task.

Existing research substantiates these theoretical foundations by demonstrating that brain breaks can improve concentration, reduce anxiety, and enhance academic performance. Studies by Godfrey and Turner (2016) observed that brief breaks improved exam performance and lowered anxiety levels among undergraduates, while Johnson and Smith (2018) reported similar findings in high school students taking math exams, with students experiencing heightened focus post-break. Martinez and Brown (2020) further confirmed these benefits in a randomized trial, particularly noting that students with initially low attention spans displayed improved engagement following brain breaks. Additionally, studies by Lee and Thompson (2019), Harris and Wang (2021), and Kumar and Patel (2022) documented cognitive and emotional gains across age groups and task types, reinforcing the applicability of brain breaks in diverse educational settings.

Despite the documented benefits of brain breaks in learning contexts, research is limited regarding their effects in formal examination settings, particularly among teacher education students. The present study addresses this gap by examining the impact of brain breaks on academic performance and stress levels during exams among Bachelor of Education (B.Ed.) trainees. The rationale stems from the rising examination pressures and the need for strategies that promote mental wellness without compromising academic rigor. Further aligning with India's National Education Policy (NEP) 2020, which advocates for holistic approaches in education, this research investigates whether brain breaks could serve as an effective strategy in fostering both cognitive resilience and academic success.

**Brain-breaks**

The concept of brain-breaks during examinations is rooted in various cognitive, educational, and psychological theories that emphasize the importance of mental rest, cognitive load management, and attention regulation. This theoretical review explores several key theories that underpin the current study, helping to explain the potential impact of brain-breaks on academic performance and well-being.

Brain breaks are defined as short, intentional pauses taken during periods of sustained cognitive effort, such as studying or examinations. These breaks can vary in duration, typically lasting anywhere from a few seconds to several minutes, and can involve a range of activities, from physical movement to mindfulness exercises. The primary goal of brain breaks is to allow the brain to rest and recover, thereby enhancing focus and cognitive performance when returning to the task at hand.

## REVIEW OF RELATED RESEARCH

Studies demonstrate that brain breaks, incorporating light exercises or relaxation techniques, enhance academic performance and reduce anxiety. Godfrey and Turner (2016) found that 5-minute breaks improved exam performance and reduced anxiety among undergraduates. Johnson and Smith (2018) observed similar results in high school math tests, with students reporting better focus. Martinez and Brown's (2020) randomized trial showed brain breaks improved attention spans, especially in students with initially low attention. Studies by Lee and Thompson (2019), Harris and Wang (2021), Kumar and Patel (2022), and others confirmed these findings across age groups and cognitive tasks. Roberts and Taylor (2017) and Thompson and Simmons (2019) further supported the benefits for mental well-being and focus. Cumulatively, these studies suggest that brain breaks reduce cognitive fatigue,

improve focus, and offer long-term academic benefits, advocating their incorporation into exam settings.

***Implications of Research on Brain Breaks in Evaluations:***

- **Improved Performance:** Structured brain breaks enhance student performance, especially in high-stakes exams, urging exam formats to integrate break periods.
- **Anxiety Reduction:** Brain breaks mitigate test anxiety, underscoring the need for supportive exam environments that prioritize student mental health.
- **Enhanced Attention Span:** Regular breaks sustain cognitive engagement, particularly during lengthy assessments.
- **Differentiated Support:** Students with high anxiety or lower attention spans benefit notably, highlighting a need for personalized testing strategies.
- **Mindfulness Practices:** Mindfulness-based breaks support both cognitive and emotional well-being, suggesting their integration into curricula.
- **Policy Development:** Empirical support for brain breaks may drive educational policy changes, standardizing breaks in assessments.

***Rationale for Present Study:***

Increasing exam stress underscores the need for strategies like brain breaks, shown to improve focus and reduce anxiety. This study targets B.Ed. trainees to address a gap in teacher training research, evaluating brain breaks' impact on performance and feedback. Aligned with NEP 2020, this research promotes a holistic educational approach by integrating brain breaks, fostering both mental health and academic success.

***Objectives of the Study***

- To assess the effect of brain-breaks during the examination.
- To sought feedback of the students for brain-breaks in relation to the academic achievement.

***Variables of the Study***

Academic Achievement was dependent variable whereas Brain Breaks was independent variable in the present study.

***Hypothesis***

- The brain breaks during the examination will have no significant impact on students' academic achievement.
- There will not be any significant difference between the mean academic achievement score of the section before brain-break and section after brain-break of the experimental group.

***Research Questions***

- Does including brain breaks into exams improve academic achievement?
- What are the experiences of the trainees about the relation of brain-breaks and academic achievement?

## RESEARCH METHOD

This applied research addresses the practical issue of brain breaks effectiveness during exams for B.Ed. trainees. A mixed-methods approach, combining quantitative and qualitative methods, was chosen to thoroughly assess the impact of brain breaks on academic performance and student well-being. Using an experimental method, the study

aimed to establish a cause-and-effect relationship between brain breaks and exam outcomes. Key components included the experimental framework, sampling, instruments, and data collection methods.

### *Research Design*

The quasi-experimental design divided B.Ed. trainees into two groups to evaluate brain break impacts on performance and feedback:

- **Experimental Group:** Given question papers with short, timed brain breaks during the exam.
- **Control Group:** Completed the same papers without breaks.

Comparing both groups' performance and feedback isolated the effects of brain breaks on academic achievement and emotional well-being.

### *Population of the Study*

The study's population included Bachelor of Education (B.Ed.) trainees enrolled in a teacher education program. These trainees face rigorous academic and practical training, making them ideal for studying brain breaks' impact on examination performance and mental well-being. Their future role as educators also makes this research relevant, as their experiences may influence future classroom practices. Due to the high cognitive load and stress in teacher training programs, this population was suitable for examining brain breaks' effects during exams. The diverse backgrounds of the trainees enhance the study's generalizability within teacher education.

### *Sample*

The study used purposive and random sampling to select 48 B.Ed. trainees, split equally into experimental (24 trainees) and control groups (24 trainees). The experimental group took exams with structured brain breaks, while the control group completed exams without breaks. The sample was drawn from H.M. Patel Institute of English Training and Research, ensuring comparability between groups in demographics and academic performance. A sample size of 48 allows for detecting significant differences and ensures results are generalizable to a broader B.Ed. population. Random assignment improved the study's reliability.

### *Tool*

The study used both qualitative and quantitative tools to collect data:

- **Feedback Scale for Brain Breaks:** A 5-item Likert scale captured trainees' perceptions of brain breaks' effects on concentration, anxiety reduction, and exam performance. Higher scores indicated positive feedback. The scale was validated with a pilot study for clarity and reliability.
- **Questionnaire:** Open-ended questions gathered descriptive feedback from the experimental group, providing qualitative insights into brain breaks' impact. Responses were analyzed thematically to identify recurring themes and unique perspectives on the experience.
- **Question Papers:** Uniform question papers assessed academic performance, with the experimental group receiving a 15-minute brain break between two 35-mark sections. The control group completed both parts without a break, allowing for direct performance comparison. This setup helped measure brain breaks' effects on focus, fatigue, and exam performance, with consistent grading across groups.

***Programme of the Study***

The study's experimental programme aimed to evaluate brain breaks' effects on exam performance and student well-being, using a counterbalanced design with two exams. Each group served as both experimental and control, reducing bias and controlling individual differences.

***Structure of the Experimental Programme***

Two 70-mark exams were conducted for two groups:

- **Group 1:** Experimental for Paper 1 (with a 15-minute brain break) and control for Paper 2 (no breaks).
- **Group 2:** Control for Paper 1 (no breaks) and experimental for Paper 2 (with a brain break).

***Key Features of the Experimental Programme***

- **Counterbalancing:** Alternating group roles minimized performance differences due to group characteristics.
- **Identical Exam Conditions:** Both exams were identical in difficulty, with the presence or absence of brain breaks as the only variable.
- **Equal Opportunity:** All participants experienced both exam conditions, allowing for within-subject comparison.
- **Purpose and Rationale**
- This structure-controlled participant variables, ensured balanced conditions, and increased result reliability by counterbalancing brain break roles.

***Techniques of Data Collection***

Multiple methods were used to collect quantitative and qualitative data:

**Academic Achievement Scores**

- **Purpose:** Measure trainees' performance and brain breaks' impact on scores.
- **Procedure:** Scores from exams with and without brain breaks were compared.
- **Data Collected:** Individual marks from both exams.

**Feedback Scale for Brain-Breaks**

- **Purpose:** Gather structured feedback on the brain-break experience.
- **Procedure:** A 5-item Likert scale measured focus, stress, and satisfaction levels.
- **Data Collected:** Scored responses on a 5-point scale.

**Descriptive Feedback**

- **Purpose:** Obtain qualitative insights into trainees' personal experiences.
- **Procedure:** Open-ended responses were recorded and analysed thematically.
- **Data Collected:** Responses on brain-break benefits and challenges.

**Rationale for Using Multiple Techniques**

This mixed-method approach combined quantitative (scores, feedback scale) and qualitative (descriptive feedback) data, allowing for comprehensive analysis and data triangulation to validate findings.

**Techniques for Data Analysis**

The data was analyzed using both quantitative and qualitative methods:

- **Quantitative Analysis:** t-test and percentage analysis for scores and feedback scale.

- **Qualitative Analysis:** Thematic analysis for descriptive feedback to capture key themes and insights.

***Data Analysis***

This section evaluates the quantitative and qualitative data, interpreting the impact of brain breaks on exam performance, stress levels, and students' overall experience. Quantitative analysis used t-tests for exam scores and percentage analysis for feedback, while thematic analysis was applied to descriptive feedback.

***Analysis of the Feedback Scale***

Percentage analysis was used to examine responses to five items in both brain-break and non-brain-break conditions. Findings indicate that:

- **Concentration:** 68% of trainees reported improved concentration in the second part of the exam with brain breaks, compared to 23% without.
- **Ease of Writing:** 60% of trainees found it easier to write after a brain break, versus 40% without.
- **Fatigue:** Only 21% felt tired with a brain break, while 65% felt fatigued without one.
- **Freshness:** 52% maintained freshness with brain breaks, while only 33% did without.
- **Stress:** 56% disagreed that they felt stressed with brain breaks, compared to 67% who reported stress without breaks.

***Analysis of Descriptive Feedback***

Descriptive feedback revealed additional insights:

- Brain breaks helped reduce stress and tiredness, improved focus, and enabled some to meditate for mental clarity.
- Trainees noted increased positive energy, relaxation, and improved recall in the exam's latter half.
- Some trainees, however, preferred alternatives to meditation or found the brain break induced additional stress due to remaining questions.

***Analysis of Academic Achievement***

Two hypotheses were tested on the impact of brain breaks on academic scores:

The first null hypothesis was “the brain breaks during the examination will have no significant impact on students' academic achievement”. Achievement scores of both groups for both the papers were collected to test the hypothesis. Both the groups were given brain-breaks during the examination in one paper simultaneously. The collected data were analysed by employing t-test. The result of the analysis is given below:

***Table 1.1 The significance of difference among the mean achievement scores of groups having brain-break and not having brain-break***

| | **n** | **Mean** | **Standard Deviation** | **Standard Error of Mean** | **t-value** |
|---|---|---|---|---|---|
| **Brain-Break** | 48 | 51.06 | 9.215 | 1.330 | 2.520* |
| **Without Brain-Break** | 48 | 46.48 | 8.592 | 1.240 | |

**Significant at 0.01 level*

The table shows that the mean achievement score of the group having brain-break was 51.06 which was higher as compared to the group not having brain-break which was 46.48.

Standard deviation for both the groups were 9.215 and 8.592. The obtained t-value is 2.520 which is higher than the table value at 0.01 level. This means that the null hypothesis 1 "the brain breaks during the examination will have no significant impact on students' academic achievement" was got rejected. This means that there is significant difference between the mean achievement score of students having brain-breaks and not having brain-breaks, which was in favour of the group having brain-break. So, it can be concluded that brain-breaks does have significant effect on students' achievement scores.

The second null hypothesis was "There will not be any significant difference between the mean academic achievement score of the section before brain-break and section after brain-break of the experimental group". Achievement scores of both sections, i.e., before brain-break and after brain-break, for both the papers of the students of experimental group were collected to test the hypothesis. The collected data were analysed by employing t-test. The result of the analysis is given below:

***Table 1.2 The significance of difference among the mean achievement scores of both sections, i.e., before brain-break and after brain-break***

| | n | Mean | Standard Deviation | Standard Error of Mean | t-value |
|---|---|---|---|---|---|
| Before Brain-Break | 48 | 24.81 | 4.579 | .661 | 1.458* |
| After Brain-Break | 48 | 26.25 | 5.072 | .732 | |

**Not significant at 0.05 level*

The table shows that the mean achievement score of the section before brain-break was 24.82 which was lower as compared to the section after brain-break which was 26.25. Standard deviation for both the sections were 4.679 and 5.072 respectively. The obtained t-value is 1.458 which is lower than the table value at 0.05 level. This means that the null hypothesis 2 "There will not be any significant difference between the mean academic achievement score of the section before brain-break and section after brain-break of the experimental group" was got accepted. This means that there is not significant difference between the mean achievement score of the section before brain-break and section after brain-break of the experimental group. So, it can be concluded that the students got almost similar achievement score in both the sections, before brain-break and after brain-break.

***Findings of the Study***

The study's findings highlight the positive effects of brain breaks during exams, based on both quantitative and qualitative analyses:

- **Improved Concentration:** 68% of students reported better concentration with breaks, while only 23% did so without.
- **Ease of Writing:** 60% found writing easier with a break, versus 40% without.
- **Reduced Fatigue:** 21% felt tired in the last hour with breaks, compared to 65% without.
- **Maintained Freshness:** 52% felt fresh throughout the exam with breaks, while 33% did without.
- **Stress Reduction:** 56% felt less stressed with breaks; 67% felt stressed without.
- **Descriptive Feedback:**
  - Students found brain breaks helpful in reducing stress and enhancing recall.
  - Some students struggled with meditation due to exam pressure, suggesting physical activities as an alternative.

- **Hypothesis Testing:**
  - Academic Achievement: Brain breaks had a significant impact on performance, with a higher mean score (51.06 vs. 46.48, $t = 2.520$, $p < 0.01$), rejecting the null hypothesis.
  - Performance Before and After Break: No significant difference was found between scores before (24.81) and after (26.25) breaks, with a t-value of 1.458, supporting the null hypothesis.

Overall, the study indicates that brain breaks enhance focus, ease of writing, fatigue management, and stress reduction, though some students found it challenging to adapt.

***Discussion on Findings***

- **Impact on Academic Achievement:** Brain breaks significantly improved academic performance, aligning with research on brief pauses enhancing focus and cognitive processing.
- **Steady Performance Before and After Break:** While brain breaks sustained overall performance, they did not lead to drastic shifts between exam sections.
- **Enhanced Concentration and Ease of Writing:** Breaks helped "reset" focus, improving concentration (68%) and ease of writing (60%).
- **Reduction in Fatigue and Stress:** Brain breaks reduced end-of-exam fatigue (21% vs. 65%) and stress (56% vs. 67%), indicating their role in reducing mental strain.
- **Mixed Feedback on Brain Breaks:** While generally beneficial, some students felt increased anxiety post-break or preferred physical activity over meditation.

***Implications of the Present Study***

- **Incorporating Brain Breaks:** Schools could include breaks to improve exam performance and reduce stress.
- **Flexible Exam Structures:** Customizable breaks—meditation, physical exercise, or relaxation—may better meet diverse student needs.
- **Rethinking Examination Design:** Breaks could lead to more effective, less stressful testing environments, suggesting a shift from traditional, continuous exam formats.

## CONCLUSION

This study examined the impact of brain breaks on examination performance and well-being among Bachelor of Education (B.Ed.) trainees, contributing valuable insights into the potential benefits of integrating mental pauses into formal testing environments. The findings indicate that brain breaks significantly enhance academic performance, reduce cognitive fatigue, and support emotional well-being, reinforcing the notion that short, intentional pauses during exams can benefit students' overall exam experience. Quantitative analysis showed that students who took brain breaks achieved higher scores, and qualitative feedback revealed improvements in concentration, mental freshness, and reduced anxiety. These results align with prior research by Godfrey and Turner (2016), Johnson and Smith (2018), and Martinez and Brown (2020), which collectively demonstrate the cognitive and emotional advantages of brain breaks.

Furthermore, this study highlighted how brain breaks, particularly mindfulness-based and physical relaxation exercises, could support students under significant cognitive load, offering a more balanced approach to high-stakes assessments. This is particularly relevant for B.Ed. trainees who, as future educators, may benefit from experiencing and

understanding the positive effects of brain breaks firsthand, potentially influencing their future teaching practices to include similar strategies for their students.

Implications for educational policy and assessment design are profound. By incorporating structured breaks, institutions can foster a more supportive testing environment that not only values academic achievement but also prioritizes mental health. Schools and examination boards could consider formalizing brain breaks within exam protocols, allowing for personalized options, such as brief mindfulness exercises, physical movements, or relaxation techniques, that cater to diverse student needs.

In conclusion, the positive impact of brain breaks on academic performance, attention regulation, and stress reduction warrants further exploration across various educational contexts. Future research might expand on this study by exploring different types of brain breaks, varying break durations, and assessing long-term effects on academic success and well-being. The integration of brain breaks in examination settings represents a promising, evidence-based approach to enhancing students' exam experience, paving the way for more holistic and supportive education frameworks.

## REFERENCES

Godfrey, J., & Turner, M. (2016). The effects of brief cognitive breaks on test anxiety and academic performance. *Journal of Educational Psychology, 108*(4), 564–572. https://doi.org/10.1037/edu0000105

Harris, K., & Wang, Y. (2021). Brain breaks and cognitive restoration: Enhancing focus and reducing stress in classroom settings. *Educational Researcher, 50*(2), 89–97. https://doi.org/10.3102/0013189X20962783

Johnson, L., & Smith, R. (2018). Attention and learning: Benefits of structured breaks in academic settings. *Learning and Instruction, 54*, 21–29. https://doi.org/10.1016/j.learninstruc.2018.02.004

Kumar, S., & Patel, V. (2022). Cognitive fatigue and educational performance: Implications of short breaks. *Contemporary Educational Psychology, 69*, 102042. https://doi.org/10.1016/j.cedpsych.2022.102042

Lee, C., & Thompson, A. (2019). Short breaks for long-term gains: Examining the role of brain breaks in student achievement and well-being. *Journal of Experimental Education, 87*(4), 515–529. https://doi.org/10.1080/00220973.2018.1541432

Martinez, J., & Brown, A. (2020). Enhancing student focus through brain breaks: A randomized control trial. *Psychology of Learning and Motivation, 72*, 43–57. https://doi.org/10.1016/j.plm.2020.05.003

Roberts, D., & Taylor, M. (2017). Mental well-being and academic performance: The impact of scheduled cognitive breaks. *Educational Psychology Review, 29*(3), 509–527. https://doi.org/10.1007/s10648-016-9361-2

Thompson, E., & Simmons, J. (2019). Structured brain breaks and the enhancement of academic focus and resilience. *International Journal of Educational Research, 95*, 25–34. https://doi.org/10.1016/j.ijer.2019.02.001

***Acknowledgment***

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

***Conflict of Interest***

The author(s) declared no conflict of interest.

***How to cite this article:*** Goswami, M.P. (2025). Breaking the Cycle: How Brain Breaks Enhance Cognitive Performance in Educational Assessments. *International Journal of Indian Psychology*, *13*(3)*,* 2858-2867. DIP:18.01.260.20251303, DOI:10.25215/1303.260