



The Effect of Remedial Teaching Instructional Programme on Academic Achievement and Study Habits of academically low Achievers of class VII in Mathematics subject

Shivangi Aggarwal¹ & Dr. Shalini Singh²

¹PhD Research Scholar, CCSU, Meerut

²Associate Professor, Department of Teacher Education V.M.L.G College, Ghaziabad

Abstract

The present research paper explicitly investigates the effect of Remedial Teaching Instructional Programme on Academic Achievement and Study Habits of Academically low Achievers fir class VII students in Mathematics subject adopting a quasi-experimental approach, the study utilized with a pre-test and post-test design on a single group.

Secondary students (40 females) from grade 7 was drawn from a U.P. Board government school, Bulandshahr distt. Of U.P. using purposive sampling technique. Researcher made diagnostic test and PSSHI by M.N.Palsane and Anuradha Sharma were administered for data collection. The organized quantitative data was statistically treated using Mean, Standard Deviation, independent t-test.

The empirical findings revealed: As the calculated t-value is found to be greater than the tabulated critical t-ratio at both 0.10 and 0.02 level of significance therefore it is demonstrated that there is a significant difference between pretest score and post test score after providing remedial instruction programme. As the calculated t-value is found to be greater than the tabulated critical t-ratio at both 0.10 and 0.02 level of significance therefore it is demonstrated that there is a significant difference between pre instructional test score and post instructional test score after providing remedial instruction programme. In conclusion, remedial teaching instructional programme (game based) has a positive effect on both academic achievement and study habits if apply on students by controlling extraneous variables effectively.

Keywords: Academic Achievement, Study Habits, Remedial Teaching, Remedial Teaching Instructional Program

1. Introduction: Mathematics is a critical subject in secondary education, fundamental for developing logical reasoning, problem-solving skills, and academic success. However, many



students, especially low achievers, struggle to meet expected standards due to factors such as poor study habits, lack of conceptual understanding, and inadequate instructional support. Study habits—including effective time management, note-taking, and motivation—play a vital role in academic performance. Poor study habits characterized by procrastination and disorganization can hinder students' ability to grasp mathematical concepts and solve problems. Addressing these challenges requires targeted interventions like remedial teaching, which provides individualized, student-centered instruction aimed at bridging learning gaps and reinforcing foundational skills.

Traditional remedial methods, while helpful, may fail to engage students who feel discouraged or anxious about mathematics. Incorporating game-based learning into remedial teaching offers an interactive and motivating approach that enhances conceptual understanding and encourages active participation. This study examines the combined impact of remedial teaching and study habits on the academic achievement of 7th-grade low achievers in mathematics. By exploring these factors, the research seeks to provide empirical insights that inform educational policies and practices, fostering inclusive and equitable learning environments and ultimately improving academic outcomes for students facing difficulties in mathematics.

Academic underachievement in mathematics among secondary school students, particularly in Class 7, is a growing concern for educators, parents, and society. Mathematics forms the backbone of scientific thinking and problem-solving, yet many students find it difficult to grasp due to a lack of conceptual clarity, poor study habits, and same teaching approaches. These challenges are even more pronounced among low achievers who require focused and sustained support to overcome their academic difficulties. Remedial teaching is designed specifically to address these challenges by offering personalized and targeted instruction to fill learning gaps. However, teaching interventions alone may not suffice unless they are accompanied by positive study habits, such as. Understanding how these two components—remedial teaching and study habits—interact and influence student achievement is critical for designing more effective support systems in schools.

2. Operational Definitions of Key Terms Used

Academic achievement: Academic achievement refers to the level of success a student has attained in their educational pursuits, typically measured through standardized tests, grades, assessments, and other academic indicators. It reflects how well a student has mastered curriculum content and educational objectives in a specific subject or overall schooling.

Study habits: Study habits refer to the behaviours and practice that students develop and apply consistently in order to learn effectively and succeed. Academically, these habits encompass a wide range of activities from time, management and note taking to environment. Selection and self-assessment. Good study habits can greatly influence academy, performance, motivation and self-confidence.



Low achievers: Low achievers in mathematics are students who perform below the expected academic standard in the subject. Their achievement may be reflected in low test scores, weak conceptual understanding, and difficulty in applying mathematical knowledge to solve problems.

Remedial teaching: Remedial teaching in mathematics is a specialized instructional approach designed to help students who are struggling with mathematical concepts, skills, and procedures. It aims to bridge the learning gaps and enable students to achieve the expected level of proficiency in mathematics.

Remedial teaching instructional program: Remedial teaching instructional program in mathematics is a structured and systematic approach designed to support students who have fallen behind in mathematical understanding. It is tailored to address specific gaps in learning and aims to enhance overall mathematical proficiency.

3. Review of Related Literature

The present findings from various researchers from India and abroad highlight the vital role of study habits in influencing academic achievement across different educational levels. Maiyo Julius K. (2015) reported a strong positive correlation ($r=0.66$) between good study habits and academic achievement among higher secondary students, recommending focused efforts to cultivate effective study habits. Mayanchi S.A. Khan (2019) identified a significant positive correlation between study habits, self-concept, and academic performance, reinforcing the importance of study behaviors. Nair Ranju T (2020) demonstrated a significant link between study habits and English achievement among secondary students, using both correlational and qualitative methods. Rana Nishta (2020) further supported these findings by showing that study habits significantly impact academic success, noting that students in private schools tend to have better study habits compared to those in government schools. Ahmad Rafiq (2021) defined study habits as regular behavioral patterns critical to mastering academic content and linked these habits directly to academic success. Thimmaraju T. (2022) found a strong positive correlation between secondary school students' study habits and their academic performance through a quantitative survey involving 180 participants. Singh Rashmi (2022) reported a positive relationship between study habits and academic achievement, while also acknowledging additional influences such as home environment, motivation, and socioeconomic status. Bhat Ishfaq Ahmad (2022) defined study habits as regular behavioral patterns critical to mastering academic content and linked these habits directly to academic success. Nithya Priya (2023) emphasized that poor study habits contribute significantly to students' poor academic outcomes, underscoring the need for establishing effective study routines for success. Collectively, these studies affirm that effective study habits are essential for enhancing students' academic outcomes across various contexts.

After reviewing all the above literature, this 'research gap' emerges. Although, there are many individual and connected studies on remedial teaching (game based), academic achievement and study habits. Many studies reveal that there is a direct relationship between remedial teaching and academic achievement but there is a lack of studies that shows relationship between



remedial teaching and study habits of VII class students in Mathematics subject. There is still a lack of adequate and focused research in the Indian context. These contradictory and limited findings from previous research provide a solid foundation for the current study. Therefore, this research work attempts to make a new and authentic contribution to this field by statistically examining the actual relationship between these three variables.

4. Objectives of the Study

1. To study academic achievement of VII class students in mathematics subject.
2. To find out the academically low achievers of VII class students in mathematics subject
3. To study the study habits of academically low achievers of VII class students in mathematics subject.
4. To develop a remedial teaching instructional programme for academically low achievers of VII class students in mathematics subject
5. To apply a remedial teaching instructional programme for academically low achievers of VII class students in mathematics subject.
6. To find out the effectiveness of remedial teaching instructional programme on academic achievement of VII class students in mathematics subject.
7. To find out the effectiveness of remedial teaching instructional programme on study habits of VII class students in mathematics subject

5. Hypothesis of the Study

1. There is no effect of remedial teaching instructional programme on academic achievement of low achievers of class VII students in mathematics subject.
2. There is no effect of remedial teaching instructional programme on study habits of low achievers of class VII students in Mathematics subject.

6. Research Method

A quasi-experimental design is a research design that aims to establish a cause-and-effect relationship between an independent and dependent variable. Unlike a true experiment, a quasi-experiment does not rely on random assignment. Instead, subjects are assigned to groups based on non-random criteria. This experimental typically allow the researcher to control the assignment to the treatment condition, but using some criterion other than random assignment.

7. Population

The target population consisted of all Secondary School Students (grades 7) studying across U.P. Board government schools located within the Bulandshahr district of Uttar Pradesh.

8. Sample and Sampling Technique

Purposive sampling (also called judgmental sampling) is a type of non-probability sampling where a researcher deliberately selects individuals who are most relevant to the research purpose. Participants are chosen based on specific characteristics, knowledge, or experience that make them valuable to the study then diagnostic was conducted on those students who are low achievers so that their understanding of learning can be improved.



The sampling process followed a purposive sampling technique. First, an **Achievement Test was administered to a population of 200 students**. Based on their performance in the test, students who **scored below 40% were identified**. From the total group, **40 students who obtained scores below 40% were selected through purposive sampling** for the study. Thus, the final sample consisted of 40 students who met the specified criterion of scoring below 40% in the Achievement Test.

9. Data Collection and Organization

The data collection process was carried out systematically. First, an Achievement Test was administered to the students to assess their academic performance. Based on the results of the Achievement Test, low achievers who scored below 40% were identified and selected for the study. Subsequently, a Study Habits Inventory and a Diagnostic Test were administered to the selected low-achieving students to assess their study habits and identify their learning difficulties, respectively. The information obtained from both the Study Habits Inventory and the Diagnostic Test was then used for the development of the Remedial Teaching Instructional Program (RTIP). The developed RTIP was subsequently applied to the selected students. After the completion of the remedial teaching programme, a Post-Test was conducted to assess the effectiveness of the intervention and determine the students' improvement in achievement. Finally, the data collected through the various tools and tests were organized and analyzed using appropriate statistical techniques.

Instructions for data collection are essential to ensure that all steps are followed consistently and the collected data are valid and reliable. Below are clear and practical instructions for collecting data in mathematics using achievement tests, diagnostic tests, and study habits inventory.

- Prepare the Research Tools
- Select and Inform Participants
- Administer the Mathematics Achievement Test
- Conduct the Diagnostic Test (for Low Achievers)
- Distribute the Study Habits Inventory

10. Statistical Techniques Used

The organized quantitative data was statistically treated using the following analytical operations:

- Mean (M): To calculate the central tendency of scores.
- Standard Deviation (S.D.): To understand the variability and dispersion of scores.
- t-test: To evaluate the significance of differences between group means.

11. Analysis and Interpretation of Data

Following the data collection using the Achievement test Diagnostic test and study habit tool, the data was analysed. The tool was administered on 40 students studying in class VII in secondary schools.

EFFECT OF RTIP ON ACADEMIC ACHIEVEMENT



Table 1 showing the significance of difference of means of pretest and post test scores of the students on achievement in mathematics.

SCORES	N	M	SD	DF	T-value	Level of significance	
						0.10	0.02
PRE TEST	40	7.225	3.55	29	10.92	1.70	2.46
POST TEST	40	14.6				Significant*	Significant**

In this section the selected variables namely academic achievement is subjected to inferential statistics and are compared with respect to pre-test and post test scores.

Table 1 shows that the mean score of pre-test (diagnostic test) is 7.225 and mean score of post-test is 14.60 and the obtained standard deviation is 3.55 with their calculated t-value is 11.26, whereas the tabulated critical t-ratio is 1.70 at 0.10 level of significance and 2.46 at 0.02 level of significance for degree of freedom 29.

As the calculated t-value is found to be greater than the tabulated critical t-ratio at both 0.10 and 0.02 level of significance therefore it is demonstrated that there is a significant difference between pre-test score and post test score after providing remedial instruction programme. Hence, the null Hypothesis H01.1 is rejected.

EFFECT OF RTIP ON STUDY HABITS

Table 2 showing the significance of difference of means of pre instructional scores and post instructional scores of the students on study habits in mathematics.

SCORES	N	M	SD	DF	T-value	Level of significance	
						0.10	0.02
PRE INSTRUCTIONAL	40	7.225	3.55	29	10.92	1.70	2.46
POST INSTRUCTIONAL	40	14.6				Significant*	Significant**

Table 2 shows that the mean score of pre instructional test of study habits is 46.5 and mean score of post instructional test of study habits is 61.75 and the obtained standard deviation is 4.41 with their calculated t-value is 18.95, whereas the tabulated critical t-ratio is 1.70 at 0.10 level of significance and 2.46 at 0.02 level of significance for degree of freedom 29.

As the calculated t-value is found to be greater than the tabulated critical t-ratio at both 0.10 and 0.02 level of significance therefore it is demonstrated that there is a significant difference between pre instructional test score and post instructional test score after providing remedial instruction programme. Hence, the null Hypothesis H01.2 is rejected.

12. Major Findings : The remedial teaching affects the academic achievement of academically low achievers in mathematics subject in a significant manner as the mean



score before the remedial instructional programme comes out to be 7.225 and the mean score after the remedial instructional programme comes out to be 14.6.

The remedial teaching affects the study habits of academically low achievers in mathematics subject in a significant manner as the mean score before the remedial instructional programme comes out to be 46.5 and the mean score after the remedial instructional programme comes out to be 61.75.

13. Conclusion

The present study is descriptive and inferential research based on quantitative data having a major emphasis on finding significant positive difference between the academic achievement and study habits before and after the remedial instructional programme. The findings of present study supported by Maiyo Julius K., Mayanchi S. A. Khan, Nair Ranju T., Thimmaraju T. that shows a positive correlation between academic achievements and study habits. So as our RTIP affect positively on both academic achievement and study habits.

14. References

- Banerjee, A., Banerji, R., Berry, J., Duflo, E., Kannan, H., Mukerji, S., Shotland, M., & Walton, M. (2016). Mainstreaming an effective intervention: Evidence from randomized evaluations of “Teaching at the Right Level” in India. NBER Working Paper No. 22746.
- Best, J. W., & Kahn, J. V. (2015). Research in education (10th ed.). PHI Learning.
- Brown, T., & Fletcher, L. (2019). Gender and academic achievement: The impact of remedial teaching programs. *Educational Studies*, 45(3), 302–315.
- Brown, T., Patel, S., & Kim, J. (2017). Customizing remedial instruction to enhance mathematics understanding. *Teaching and Teacher Education*, 65, 41–52.
- Byiringiro, E. (2024). Effect of remedial teaching on mathematics achievement among secondary school students in Sweden: Evidence from high secondary school. *International Journal of Recent Research in Mathematics, Computer Science and Information Technology*, 10(2), 37–44.
- Clark, R., & Weiner, M. (2017). Gender differences in post-remedial mathematics achievement. *Mathematics Education Review*, 29(1), 77–89.
- Dalnaik, S. K. (2022). Effect of remedial teaching on mathematics achievement among secondary school students. *International Journal of Applied Research*, 8(11), 100–102.
- Denton, M., & Mohr, K. (2016). Gender and academic achievement: An analysis of intervention program outcomes. *Journal of Educational Psychology*, 108(2), 251–263.
- Dash, B. N. (2012). Research in education. Dominant Publishers.
- Geetha, R. (2002). Effectiveness of remedial programs in enhancing word-recognition and reading comprehension skills of low-achieving secondary school students in Kerala. *Indian Journal of Educational Research*, 21(2), 67–75.
- Graham, P. (2018). The impact of remedial mathematics programs on student



- achievement. *Journal of Educational Research*, 111(2), 120–132.
- Jarrar, S. (2014). The impact of remedial classes on the performance of fourth grade low achievers in English in public school in Ramallah District. *Contemporary Education and Teaching Research*, 1(2), 32–33.
 - Johnson, R., & Williams, S. (2015). Evaluating the effect size of remedial teaching in mathematics: A meta-analysis. *Educational Psychology Quarterly*, 32(4), 289–304.
 - Joshi, R., & Sharma, S. (2014). Impact of remedial teaching on academic performance of secondary students in Himachal Pradesh. *Journal of Indian Education*, 40(1), 58–70.
 - Lee, D. (2014). Strengthening mathematical reasoning through remedial teaching programs. *Asia-Pacific Journal of Mathematics Education*, 9(2), 88–97.
 - Lee, S., & Kim, J. (2020). Effect of remedial teaching on English language skills in South Korean secondary school students. *Korean Journal of Educational Psychology*, 37(2), 134–146.
 - Lone, R. A. (2021). Study habits and academic performance among students: A systematic review. *Research Review International Journal of Multidisciplinary*, 6(5), 132–135. <https://doi.org/10.31305/rrijm.2021.v06.i05.019>
 - Louch, R. (2014). The impact of remedial English on improvement of English proficiency of freshmen at the United States International University. *Contemporary Education and Teaching Research*, 1(2), 31–32.
 - Mayanchi, S. A., Khan, A., & Latif, A. A. (2019). Relationship among self-concept, study habits and academic achievement of Pre-NCE students in Zamfara State College of Education. *International Journal of Recent Technology and Engineering*, 7(6S5), 777–780.
 - Mishra, S., & Pandey, R. (2011). Remedial teaching and academic achievement among underachievers at the secondary level in Bihar. *Indian Journal of Psychology and Education*, 41(3), 89–98.
 - Muralidharan, K. (2017). Field experiments in education in developing countries. *Handbook of Economic Field Experiments*, 2, 323–385.
 - Musabyimana, J., & Mugiraneza, J. P. (2023). Impact of digital numeracy as a remedial activity in public secondary schools. *International Journal of Educational Technology*, 11(1), 22–34.
 - Nair, R. T., & Kulkarni, U. K. (2020). Study habits and its impact on academic performance in English of secondary school students in Kalaburgi region. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(12), 670–682.
 - Nithya Priya, P., & Kannammal, V. (2023). Impact on learning habit and academic performance of students. *Journal of Foundational Research*, 31(2C).
 - Patil, S., & Desai, V. (2021). Effect of remedial teaching on mathematical performance



in rural Maharashtra. *Journal of Rural Education*, 17(2), 77–85.

- Pathak, R. P. (2012). *Methodology of educational research*. Atlantic Publishers.
- Rana, N., & Deepika. (2020). Study habits of higher secondary school students in relation to their gender, type of school and academic stream. *MIER Journal of Educational Studies, Trends & Practices*, 10(1), 113–123. <https://doi.org/10.52634/MIER/2020/V10/I1/1361>
- Rather, T. L., & Bhat, I. A. (2020). Study habits among students: An overview. *Kala Sarovar*, 23(4), 188–192.
- Reddy, K., & Narayan, S. (2018). Effectiveness of remedial teaching in enhancing science achievement among secondary students in Andhra Pradesh. *Science Education International*, 29(4), 350–360.
- Saha, S., & Roy, A. (2016). Impact of remedial teaching on higher secondary students' mathematics performance in West Bengal. *Bengal Journal of Education*, 12(1), 101–110.
- Selvarajan, R., & Vasanthagumar, R. (2012). Effectiveness of remedial teaching in improving students' ability in Tamil language and mathematics. *International Journal of Scientific and Research Publications*, 2(11), 1–4.
- Sharma, R. A. (2010). *Educational research: Designs and techniques*. R. Lall Book Depot.
- Siahi, E. A., & Maiyo, J. K. (2015). Study of the relationship between study habits and academic achievement of students: A case of Spicer Higher Secondary School, India. *International Journal of Educational Administration and Policy Studies*, 7(7), 134–141. <https://doi.org/10.5897/IJEAPS2015.0404>
- Singh, P., & Gupta, R. (2003). Role of remedial teaching in improving higher secondary students' mathematics performance in Uttar Pradesh. *Indian Educational Review*, 39(2), 55–64.
- Singh, R., & Sharma, R. (2022). A review of the relation of study habits to the academic achievement of students. *International Journal for Research Trends and Innovation*, 7(4), 14–19.
- Smith, J., & Lee, H. (2016). Effects of remedial instruction on mathematics performance in secondary schools. *Mathematics Education Review*, 28(3), 201–215.
- Thimmaraju, T. (2022). Influence of study habits on academic achievement of secondary school students. *International Journal of Creative Research Thoughts*, 10(3), F756–F761.
- Trivino, M. (2016). Remedial class improved students' participation and assessment scores. *Contemporary Education and Teaching Research*, 1(2), 34–35.
- Tucker, M., & Harding, L. (2017). Bridging the gap: Remedial programs and academic achievement among underperforming students. *International Journal of Educational*



Improvement, 19(1), 66–79.

- Wang, L., & Zhang, Y. (2023). Effectiveness of remedial teaching on mathematical performance of secondary school students in China. *Asia-Pacific Education Review*, 24(1), 88–101.
- Yadav, S. K. (2014). Remedial teaching in mathematics: A case study of secondary school students in India. *Indian Journal of Educational Studies*, 1(2), 45–54.

Cite this Article:

Aggarwal, Shivangi Singh, Dr. Shalini. (2026). The Effect of Remedial Teaching Instructional Programme on Academic Achievement and Study Habits of academically low Achievers of class VII in Mathematics subject. *The Research Dialogue*, 5(2), 637–646, Volume-05, Issue-02, July-2026. DOI: <https://doi.org/10.64880/theresearchdialogue.v5i2.66>



This is an Open cess Journal / article distributed under the terms of the Creative Commons Attribution License CC BY-NC-ND 3.0) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. All rights reserved.

Disclaimer/Publisher's Note: The views, findings, and opinions expressed in this publication are solely those of the author(s). The publisher and editorial team are not responsible for any errors, claims, or consequences arising from the use of the published content.





CERTIFICATE

of Publication

This Certificate is proudly presented to

Shivangi Aggarwal¹ & Dr. Shalini Singh²

The Effect of Remedial Teaching Instructional Programme on Academic Achievement and Study Habits of academically low Achievers of class VII in Mathematics subject

Dialogue' Peer-Reviewed / Refereed Research Journal and E-ISSN: 2583-438X,
Volume-05, Issue-02, Month July, Year-2026, Impact Factor (RPRI-4.73/ 6.79)

Dr. Lohans Kumar Kalyani
Editor- In-chief



Dr. Neeraj Yadav
Executive-In-Chief- Editor

Note: This E-Certificate is valid with published paper and the paper must be available online at: <https://theresearchdialogue.com/>
DOI : <https://doi.org/10.64880/theresearchdialogue.v5i2.66>