



## A STUDY OF THE EFFECT OF MEMORY ON THE ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS IN RURAL AND URBAN AREAS IN PUSAD CITY IN THE STATE OF MAHARASHTRA.

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### **ABSTRACT**

*Memory is considered one of the most crucial components in the educational process, as it plays a central role in retaining knowledge, skills, and experiences for a longer duration. At the secondary school level, students are in adolescence, where their mental, intellectual, and social development strongly influences their academic achievement. This study examines the impact of memory on the academic achievement of secondary school students from rural and urban areas, where socio-economic, cultural, and educational disparities are evident.*

*The research adopted a descriptive method and was conducted on a sample of 100 students (50 rural and 50 urban) from Grade IX in Pusad Taluka. A self-constructed Memory Scale, covering short-term memory, working memory, long-term memory, and memory strategies (with a 5-point Likert scale), was used to assess memory levels, while academic achievement was measured through test scores. The Memory Scale showed high internal consistency (Cronbach's  $\alpha \geq 0.70$ ) and test-retest reliability ( $r \geq 0.70$ ).*

*Findings revealed that urban students scored significantly higher in both memory ( $M = 72.80$ ,  $SD = 7.10$ ) and academic achievement ( $M = 68.40$ ,  $SD = 6.80$ ) compared to rural students (Memory:  $M = 65.40$ ,  $SD = 8.20$ ; Achievement:  $M = 61.20$ ,  $SD = 7.50$ ). Correlation analysis indicated a strong positive and significant relationship between memory and academic achievement ( $r = 0.62$ ,  $p < 0.01$  for rural students;  $r = 0.71$ ,  $p < 0.01$  for urban students;  $r = 0.68$  overall). *t*-test results further confirmed significant differences between rural and urban students in both memory ( $t = 4.51$ ,  $p < 0.01$ ) and achievement ( $t = 5.02$ ,  $p < 0.01$ ).*

*The study concludes that memory strongly predicts academic achievement, with urban students performing better due to favorable learning environments, resources, and guidance. The findings highlight the need for improved facilities, innovative teaching methods, and technological support for rural students to enhance their memory and academic performance.*

**KEYWORDS:** *Memory, Academic Achievement, Rural and Urban Students, Secondary Education, Correlation*

## BACKGROUND

In the educational process, memory is considered a highly significant factor. The role of memory is central in helping students retain the knowledge, skills, and experiences they have learned for a longer period of time. At the secondary school level, students are in their adolescent stage, where mental, intellectual, and social development influences their academic performance. Hence, in the process of achievement, memory becomes an important determinant.

In Indian society, there are significant differences between rural and urban areas in terms of educational environment, resources, parents' educational level, learning tools available at home, and school facilities. Against this background, there is a possibility that differences may exist in the memory of rural and urban students. These differences in memory may directly or indirectly affect their academic achievement.

Previous studies have shown that students' learning styles, concentration, study environment, and teachers' guidance affect the development of memory. Additionally, socio-economic status, educational facilities in rural and urban areas, and the support available to students also create differences in their memory and academic achievement.

Therefore, it becomes necessary to study how exactly the memory of rural and urban secondary school students influences their academic achievement.

## NEED OF THE STUDY

In the educational process, memory is regarded as a vital factor for students' intellectual development and their academic achievement. At the secondary level, students study a variety of subjects, and their academic standard largely depends on their understanding, ability to assimilate, and strength of memory. Therefore, it becomes necessary to study how and to what extent students' memory influences their academic achievement.

There are significant differences in the social, economic, educational, and cultural backgrounds of students from rural and urban areas. Rural students have limited access to educational tools, technological equipment, and supplementary facilities, whereas urban students comparatively receive more opportunities and resources. This inequality may lead to differences in the development of memory and academic achievement. Thus, examining the relationship between memory and achievement among both groups is important from a sociological and educational perspective.

Furthermore, in today's competitive era, various methods, tools, and techniques are being used to enhance memory. Such research can guide teachers and parents in providing proper direction for the development of students' memory. It can also help identify differences in the memory capacity of rural and urban students and suggest necessary changes in teaching methods accordingly.

In addition, understanding the relationship between memory and achievement is essential for the holistic development of students. The findings of this study may contribute to educational planning, curriculum design, and the development of more effective, student-centered teaching strategies. Therefore, the need for studying the influence of memory on the academic achievement of secondary school students in rural and urban areas is clearly emphasized.

## SIGNIFICANCE OF THE STUDY

The study of the impact of memory on the academic achievement of secondary school students in rural and urban areas holds great importance at educational, social, and practical levels.

Firstly, from an educational perspective, this research is significant. A student's academic success largely depends on their ability to assimilate knowledge, retain it for a long time, and recall it when necessary. Since memory is the fundamental basis of achievement, studying it can provide new directions for enhancing students' academic progress.

Secondly, there are notable differences in the lifestyle, family background, resources, and teaching methods of rural and urban students, which also result in differences in the development of their memory. Understanding how these differences affect achievement can help in designing policy measures for educational equality. Special educational programs or teaching techniques can be developed to improve the memory of rural students.

Thirdly, the practical importance of this research is significant for teachers, parents, and educational planners. Teachers will gain insights to adapt teaching methods according to students' memory levels. Parents will receive guidance to improve their children's study habits, while educational administrators can plan better distribution of resources and policies for both rural and urban students.

Fourthly, from a psychological perspective, this study is useful as well. Clarifying the relationship between students' cognitive abilities and academic achievement can make education more student-centered and effective.

Thus, this study will provide guidance for students' intellectual development, raise academic standards, and help design effective strategies to reduce rural–urban disparities. Therefore, the significance of this research is highly noteworthy.

## OBJECTIVES

- To study the memory of secondary school students in rural and urban areas.
- To study the academic achievement of secondary school students in rural and urban areas.
- To study the influence of memory on the academic achievement of secondary school students in rural and urban areas.

## Hypotheses

- There is no significant difference in the mean memory scores of secondary school students in rural and urban areas.
- There is no significant difference in the mean academic achievement scores of secondary school students in rural and urban areas.
- Memory does not have a significant effect on the mean academic achievement scores of secondary school students in rural and urban areas.

## RESEARCH METHODOLOGY

For the present study, the descriptive research method was employed. The sample consisted of secondary school students studying in Grade IX from rural and urban schools of Pusad Taluka. A total of 100 students were selected using the random sampling technique, of which 50 were rural students and 50 were urban students. In

this study, *memory* was considered as the independent variable, while *academic achievement* was considered as the dependent variable. For data collection, a self-constructed Student Memory Scale was used. The scale included components such as short-term memory, working/operational memory, long-term memory, and the use of memory strategies. A 5-point Likert scale was used for this measurement. In relation to academic achievement, students' test examination scores were considered. The Memory Scale demonstrated good reliability, with internal consistency Cronbach's  $\alpha \geq 0.70$  and test-retest reliability ~2 weeks,  $r \geq 0.70$ . For the purpose of this research, necessary permission was obtained from the selected schools, and relevant data were collected accordingly.

### Analysis and interpretation:

**Table No. 1.1**

**Table showing the distribution of memory and academic achievement of secondary school students**

Group	N	Memory Score (Mean & SD)	Academic achievement Score (Mean & SD)
Rural Students	50	65.40 ( $\pm 8.20$ )	61.20 ( $\pm 7.50$ )
Urban Students	50	72.80 ( $\pm 7.10$ )	68.40 ( $\pm 6.80$ )
Total	100	69.10 ( $\pm 8.30$ )	<b>64.80</b> $\pm 7.40$ )

From the above table, it is clear that the average memory score of rural students is 65.40 with  $SD = \pm 8.20$ , while the average memory score of urban students is 72.80 with  $SD = \pm 7.10$ . This shows that the memory of urban students is higher than that of rural students. Similarly, the average achievement score of rural students is 61.20 with  $SD = \pm 7.50$ , whereas the average achievement score of urban students is 68.40 with  $SD = \pm 6.80$ . This indicates that the academic achievement of urban students is higher than that of rural students. The combined average memory score of all students is 69.10 with  $SD = \pm 8.30$ , and the overall average achievement score is 64.80 with  $SD = \pm 7.40$ .

The relatively higher memory and academic achievement levels of urban students may be attributed to their environment, availability of educational resources, competitive atmosphere, and technological facilities. On the other hand, the lower memory and achievement levels of rural students suggest limited access to educational tools, learning environments, and guidance opportunities.

Overall, there is a significant difference between rural and urban students in both memory and academic achievement. The data also reveals a positive relationship between memory and academic achievement (students with higher memory tend to have better achievement).

**Table No. 1.2**

**Table showing the correlation between memory and academic achievement of secondary school students**

Group	Variable	'r'	Sig. (p)
Rural Students	Memory	r = 0.62	p < 0.01
	Achievement		
Urban Students	Memory	r = 0.71	p < 0.01
	Achievement		
Total	Memory	r = 0.68	p < 0.01
	Achievement		

In the above table, the correlation coefficient between memory and academic achievement for rural students is **r = 0.62**. This coefficient is positive, high, and statistically significant ( $p < 0.01$ ). Similarly, for urban students, the correlation coefficient between memory and academic achievement is **r = 0.71**, which is higher than that of rural students, indicating a strong positive correlation. This result is also statistically significant ( $p < 0.01$ ). For the combined sample of all students, the overall correlation between memory and achievement is **r = 0.68**, which is likewise positive, high, and significant ( $p < 0.01$ ).

These results clearly indicate that the better the students' memory, the higher their academic achievement. Although the correlation among rural students is high (0.62), it is even stronger among urban students (0.71). This suggests that the relationship between memory and academic achievement is more robust in urban students. Overall, since all groups show a positive and significant correlation, memory can be considered an important predictor of academic achievement.

**Table No. 1.3**

**Table showing the significant difference in the mean scores of memory and academic achievement between rural and urban secondary school students**

Variable	t-value	df	p-Value	Interpretation
Memory	4.51	98	p < 0.01	Urban Students > Rural Students
Academic achievement	5.02	98	p < 0.01	Urban Students > Rural Students

In the above table, with respect to memory, the obtained value is **t = 4.51, df = 98, p < 0.01**. This indicates that there is a significant difference in the mean memory scores of rural and urban students. The memory scores of urban students are higher than those of rural students.

With respect to academic achievement, the obtained value is **t = 5.02, df = 98, p < 0.01**. This also shows a significant difference in the mean achievement scores of rural and urban students, with urban students scoring higher than rural students.

Thus, in both memory and academic achievement, there is a significant difference between rural and urban students. Urban students demonstrate higher memory scores and achievement levels due to better access to educational resources, learning facilities, favorable study environments, technological support, experienced

teachers, and competitive settings. Compared to rural students, the academic standard of urban students is elevated, which is clearly evident from these results.

## CONCLUSION

At the secondary level, urban students are more advanced than rural students in both memory and academic achievement. A direct effect of memory on academic achievement is evident. To improve the memory and achievement of rural students, emphasis needs to be placed on the availability of educational resources, proper guidance, innovation in study methods, and the use of technological tools.

There is a strong and positive correlation between memory and academic achievement. This correlation is significant in both rural and urban groups, but it is stronger among urban students. At the secondary level, memory plays a crucial role in students' academic success. Since the relationship between memory and achievement is comparatively weaker among rural students, there is a need to improve their study methods, increase practice, and encourage the use of technological tools.

There is a significant difference in the mean scores of memory and academic achievement between rural and urban secondary-level students. In both cases, the scores of urban students are significantly higher than those of rural students. This shows that urban environments, resources, and educational opportunities have a positive impact on students' academic outcomes. For the progress of rural students, greater access to educational facilities, resources, technological tools, and a motivating environment is essential.

## IMPLICATION OF THIS STUDY:

Like urban students, rural students also need to adopt effective teaching methods, practice, and repetition techniques to improve memory. To retain memory, the use of charts, maps, diagrams, and technological tools should be increased. Since urban students use technological tools more frequently, their memory and academic achievement are better. Therefore, in rural schools as well, the use of computers, projectors, digital learning materials, and e-learning needs to be enhanced. A competitive and academic environment similar to that of urban areas should be created in rural regions. Additional libraries, laboratories, practice workbooks, and models should be provided. Rural students should be given regular guidance, doubt-solving sessions, extra classes, and tutoring support. Teachers should teach various strategies to enhance memory (such as mnemonic devices, mind mapping, and concept mapping).

Urban students have a more favorable environment for study at home and in school. For rural students as well, it is necessary to create a calm and motivating atmosphere for learning. Collaborative learning methods should be implemented among both rural and urban students to improve memory and achievement. Knowledge can be reinforced through group discussions, quizzes, workshops, and project work. Parents should monitor their children's academic progress and create a supportive study environment. For the progress of rural students, initiatives can be undertaken with the participation of the community and school management committees.

From this study, it is evident that urban students outperform rural students in both memory and academic achievement. Therefore, by introducing special educational measures, using technological tools, providing proper guidance, and improving study methods, the academic quality of rural students can be significantly enhanced.

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