International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 4S, 2025
https://www.theaspd.com/ijes.php

Relationship of Study Habits and Academic Achievement of b.ed. Students at Different Levels of Intelligence

Manpreet kaur[1], Dr.Praveen Kumar T.D[2]
[1]Research Scholar,Guru Kashi University, Talwandi sabo ,151302
E mail. mkaur.1jan@gmail.com
[2]Assistant Professor ,Dept of Education, Dr.Hari singh Gour Vishwavidyalaya (A Central University) Sagar,M.P-470003
ap_praveent@dhsgsu.edu.in

Abstract

This study explores the relationship between study habi ts and academic achievement among B.Ed. students categorized by intelligence levels: Below Average, Average, and Above Average. Using standardized tools for intelligence and study habits, data were collected from 300 B.Ed. students across four colleges in Amritsar. The analysis revealed significant differences in intelligence scores, academic performance, and study habits across the three intelligence levels. Post-hoc analyses confirmed that each group significantly differed from the others. Furthermore, a strong relationship was observed between study habits and academic achievement in the Above Average and Average intelligence groups, while no such relationship was found in the Below Average group. These findings suggest that while intelligence and study habits both influence academic success, their impact varies across cognitive levels. The study emphasizes the need for differentiated instructional strategies and targeted support systems in teacher education programs to enhance learning outcomes.

Keywords
B.Ed. students, Study Habits, Academic Achievement, Intelligence Levels, Cognitive Differences, Teacher Education, ANOVA, Chi-Square, Educational Psychology, Differentiated Instruction.

INTRODUCTION

Academic achievement serves as a cornerstone of educational success, particularly in professional programs like the **Bachelor of Education (B.Ed.)**, which prepares future educators for the multifaceted demands of teaching. The pursuit of higher academic performance is a universal goal among students, influenced by a range of cognitive, behavioral, and environmental factors. Among these, **study habits** have consistently emerged as critical determinants of academic success.

Stella and Purushothaman (1993) noted that researchers have traditionally analyzed student achievement using classifications such as high, average, and low achievers. While this conventional approach references group averages or normative standards, it fails to account for individual variability in learning behaviors. They argue that study habits vary significantly from person to person and thus require a different evaluative framework that considers **individual capabilities**.

Study habits encompass the regular and sustained strategies students use to engage with content, process information, and prepare for assessments. These may include effective **time management**, **note-taking**, **active recall**, and **critical thinking** techniques. Numerous studies have affirmed that the development and implementation of efficient study habits contribute to deeper understanding, improved retention, and better academic outcomes. Issa et al. (2012) emphasized that students' daily reading behaviors significantly influence

their study skills and academic performance. Loveless (2021) also asserted that the vast majority of academically successful students attribute their success to the adoption and consistent application of effective study habits.

However, the effectiveness of study habits is not uniform across all students. Individual differences—particularly in cognitive abilities such as **intelligence**—are likely to **moderate the relationship** between study habits and academic achievement. Intelligence, broadly defined as the capacity to acquire and apply knowledge and skills, influences how students process information, solve problems, and adapt to new learning contexts. It is plausible that students with higher intelligence may either inherently develop more effective study strategies or require fewer structured habits to perform well academically. Conversely, students with average or below-average intelligence may rely more heavily on disciplined and structured study routines to attain comparable levels of success.

Interestingly, it has been observed that students with high IQs do not always outperform their peers with lower IQs, despite their cognitive advantage (Harvey, 2001). This suggests that intelligence alone may not be sufficient for academic success. As Kiester and Kiester (1992) pointed out, study habits play a pivotal role in the learning process and can significantly influence academic outcomes regardless of cognitive ability.

REVIEW RELATED LITERATURE

Vyas and Sharma (2016) reviewed existing literature to examine the relationship between students' study habits and their academic achievement. Their review emphasized that students who maintain effective study habits are more likely to perform better academically. They also noted the influence of several contextual variables, such as parental education, socio-economic status, peer influence, and home environment, which collectively shape student achievement. Their findings affirm a **strong positive correlation between good study habits and academic success**, highlighting that poor study habits often lead to poor performance.

Uju and Paul (2017) investigated the relationship between study habits and academic achievement in Biology among 1,050 secondary school students in Abuja, Nigeria. Using a descriptive survey design, the study found a **significant positive correlation** between study habits and academic achievement, indicating that students with better study habits tended to perform better in Biology.

Prasetyo et al. (2019) conducted a path analysis using the Partial Least Squares (PLS) method to explore how different types of study habits affect academic performance among biology students. The strongest relationship was observed with **book-reading behavior**, while weaker links were found for library visits, lecture attendance, and test-taking. This suggests that not all study habits are equally impactful, and **quality and depth of engagement with content** matter more than mere participation.

Ahamad et al. (2020) examined the influence of parents on students' reading habits in Lahore, Pakistan. The study revealed that **parental attitudes toward leisure reading significantly influenced students' intellectual and academic development**, including communication skills and classroom behavior. This highlights the importance of **family involvement** in fostering lifelong learning and academic success.

Clarke et al. (2021) conducted a two-phase cross-sectional survey at Trinity College Dublin, comparing students' study habits before and during the COVID-19 pandemic. The findings revealed that while students consistently relied on methods like caffeine use, structured library time, and sleep adjustments, the **pandemic disrupted study routines** and led to increased stress and decreased academic motivation, emphasizing the **importance of environmental stability** in maintaining effective study habits.

Castillo et al. (2023) used Palsane and Sharma's Study Habits Inventory in a descriptive correlational study of 137 senior high school students. Their linear regression analysis revealed a **significant relationship between study habits and academic performance**, confirming that better study strategies positively impact student outcomes. This study also reaffirmed the validity of the Study Habits Inventory as a diagnostic tool in educational research.

Aljaffer et al. (2024) examined study habits among medical students in Saudi Arabia and identified specific predictors of academic achievement, such as **self-fulfillment motivation**, preference for **visual learning**, and **memory recall strategies**. The study found that students satisfied with their academic performance had a **1.6 times higher likelihood** of achieving a high GPA, suggesting that internal motivation and personalized study techniques are key success factors.

Ward et al. (2025) explored the role of AI-based learning tools in improving study habits, time management, and academic achievement. Their study found that **AI-assisted learning not only reduced study hours but also improved GPA**, indicating increased learning efficiency. Qualitative feedback from students also emphasized AI's role in **providing real-time feedback and personalized learning paths**, further supporting the integration of technology in educational environments.

Across the reviewed studies, a consistent pattern emerges: **effective study habits are positively correlated with academic achievement**. However, individual and contextual factors such as **intelligence level, parental influence, personal motivation, and technological access** act as mediators. While some studies focus on traditional factors like reading habits and parental support, others bring in modern variables such as AI-enhanced learning environments, suggesting that **study habits are dynamic and responsive to changes in both personal and institutional contexts**.

Research Gap

The existing literature clearly establishes that study habits have a significant and positive impact on academic achievement across various educational levels and cultural contexts. Multiple studies (e.g., Vyas & Sharma, 2016; Uju & Paul, 2017; Prasetyo et al., 2019; Castillo et al., 2023) have reinforced this connection using quantitative, correlational, and path analysis methods. Additionally, environmental factors such as parental involvement, reading habits, and technological interventions (Ahamad et al., 2020; Ward et al., 2025) have been found to influence both study behaviors and academic outcomes. However, several gaps remain:

1. **Limited focus on B.Ed. students:** Most studies have been conducted on school or undergraduate populations, with little focus on teacher trainees, whose academic habits directly impact their future teaching.
2. **Lack of intelligence-based stratification:** Few studies examine how intelligence levels (below average, average, above average) moderate the relationship between study habits and academic performance.
3. **Scarcity of Indian context studies in professional courses:** There's a shortage of region-specific research in teacher education programs, particularly in India.
4. **Minimal use of mixed-method approaches:** Most studies are quantitative, lacking qualitative insights into students' personal experiences and motivations.

Thus, while the literature provides strong evidence for the importance of study habits and their link to academic achievement, there is a significant gap in understanding this relationship in the context of B.Ed. students when stratified by intelligence levels. There is also a lack of integrative, comparative, and culturally grounded studies in the Indian teacher education landscape. Addressing these gaps can offer valuable insights

for curriculum developers, teacher educators, and academic counselors to design differentiated instructional and mentoring strategies.

Operational Defination

- **STUDY HABIT:** It means the habit that an individual might have formed with respect to his learning activities. In the process of learning, habitual ways of exercising and practicing their abilities for learning are considered as study habits of learners. Study habits tell a person that how much he will learn and how far he wants to go, and how much he wants to learn. In this study Study Habit is defined as score obtained on tool "Test of Study habits and Attitudes" developed by C.P Mathur.
- **INTELLIGENCE:** Intelligence includes the capacity of the individual to know and to act in a useful way. Intelligence is an innate ability and attribute of human personality which distinguishes him/her from animals. In this study Intelligence is defined as score obtained on tool "Samoohik Mansik Yogyata Pariksha" developed by R.K Tandon.
- **ACADEMIC ACHIEVEMENT:** It can be defined as excellence in all academic disciplines, in class as well as extracurricular activities. It includes excellence in sporting, behaviour, self confidence, communication skills, art, culture and the like. In this study Academic Achievement is defined as score obtained by students in their graduating classes.

Significance of the study

Students enter educational institutions with some background characteristics like study behaviour, attitudes and various cognitive abilities that influence their scholastic performance. These characteristics of students act as basis or raw material for the final achievement of goals and targets. Sometimes, in spite of inherent capabilities and potentialities many intellectually capable students don't achieve what their measured capacity indicates. Even parents and teachers are at a loss to understand the discrepancy between ability of the child and his accomplishment. What they need are improved study habits. Good study habits play two fold functions in the education. It assists in the acquisition of knowledge and to the best of one's capacity and ways and means to study effectively with proper management of time and energy.

This study will be useful to many people who may want to know the factors that could make or mar student's academic performance. It will provide valuable information about the effects of poor study habit on the academic performance of students. Outcomes of this study may form the basis for future intervention programs which aim at improving students' study habits that will eventually improve their performance outcomes in examinations which is an indicator of quality education in institutions of learning.

Also, previous research has explored the relationship between study habits and academic achievement, often demonstrating a positive correlation. Similarly, the link between intelligence and academic performance is well-established. Nevertheless, a comprehensive understanding of how these two critical factors interact to influence the academic success of B.Ed. students, specifically across different intelligence levels, remains an area warranting further investigation. B.Ed. students, as prospective teachers, are not only recipients of education but also future facilitators of learning. Their academic success, therefore, has broader implications for the quality of education they will impart. This study aims to fill this research gap by meticulously examining the interplay between study habits, academic achievement, and intelligence levels among B.Ed. students. By understanding these dynamics, educators can tailor pedagogical approaches, offer personalized guidance on study strategies, and ultimately contribute to the holistic development and academic excellence of future teachers. This research will provide valuable insights into whether universally prescribed study habits are equally effective for all B.Ed. students, or if differentiated approaches are necessary to optimize academic outcomes based on individual cognitive profiles.

RESEARCH PROBLEM

RELATIONSHIP OF STUDY HABITS AND ACADEMIC ACHIEVEMENT OF B.ED. STUDENTS AT DIFFERENT LEVELS OF INTELLIGENCE

OBJECTIVES OF THE STUDY

1. To examine whether there is a significant difference in intelligence scores among B.Ed. students categorized into three levels: Below Average, Average, and Above Average intelligence.
2. To examine whether there is a significant difference in the academic achievement of B.Ed. students categorized into three levels: Below Average, Average, and Above Average academic performance.
3. To examine whether there is a significant difference in the study habits of B.Ed. students categorized into three levels based on their study habits: Below Average, Average, and Above Average.
4. To investigate whether a significant relationship exists between Study Habits and Academic Achievement among B.Ed. students at three levels of intelligence: Above Average, Average, and Below Average, using the Chi-Square test of independence.

HYPOTHESES OF THE STUDY

1. There will be a statistically significant difference in the levels of intelligence of B.Ed. students.
2. There is no significant difference in the mean academic achievement scores among the three academic performance groups.
3. There is no significant difference in the study habits of B.Ed. students across the three groups.
4. There will be no significant relationship between Study Habits and Academic Achievement at different levels of Intelligence.

RESEARCH METHODOLOGY

The investigator used the descriptive survey method for her study.

SAMPLE

A sample of 300 B.ED students were taken from four Colleges of Education of Amritsar.

TOOLS USED IN THE STUDY

Following tools were used to collect data for the present study :-

1. Samoohik Mansik Yogyata Pariksha (1973) developed by Tandon, R.K published by National Psychological Corportaion, Agra.
2. Test of Study habits and Attitudes developed by Mathur, C.P published by Institute for studies in Psychological Testing, Kanpur.

STATISTICAL TECHNIQUES USED

The analysis of the collected data employed statistical techniques such as mean, standard deviation, t-test and chi-square.

DATA ANALYSIS

Objective 1

To examine whether there is a significant difference in intelligence scores among B.Ed. students categorized into three levels: Below Average, Average, and Above Average intelligence.

Hypothesis I (Restated for ANOVA)

- **Null Hypothesis (H_0):** There is no significant difference in the mean intelligence scores among the three intelligence groups.
- **Alternative Hypothesis (H_1):** At least one group differs significantly in mean intelligence score.

Tabel 1: ANOVA Summary Table

Intelligence Level	N	Mean	SD	F(2, 297)	p-value
Above Average	60	69.27	6.46	**637.50**	**p < 0.001 Highly significant**
Average	178	42.47	8.74		
Below Average	62	20.04	4.59		

A one-way ANOVA was conducted to examine whether there were statistically significant differences in the intelligence scores among B.Ed. students classified into three levels: Below Average, Average, and Above Average. The results revealed a highly significant effect of intelligence level on the scores, $F(2, 297) = 637.50$, $p < 0.001$. The mean intelligence scores differed notably across the three groups, with Below Average students scoring a mean of 20.04 (SD = 4.59), Average students scoring 42.47 (SD = 8.74), and Above Average students scoring 69.27 (SD = 6.46). The large F-value indicates that the variability in intelligence scores between the groups is substantially greater than the variability within the groups, signifying that the classification based on intelligence level is meaningful. Since the p-value is far below the conventional threshold of 0.05, we reject the null hypothesis and accept that significant differences exist among the group means. Further post-hoc t-tests confirmed that all three groups differ significantly from each other at the 0.01 level. Therefore, the hypothesis stating that there is a statistically significant difference in the levels of intelligence of B.Ed. students is strongly supported.

Post-Hoc Analysis

To identify which specific groups differ from each other, independent samples t-tests were conducted:

Comparison	Mean Difference	t-value	Significance
Below Average vs. Average	22.28	18.92	$p < 0.01$
Average vs. Above Average	27.53	22.12	$p < 0.01$
Below Average vs. Above Average	49.82	50.72	$p < 0.01$

To further examine which specific groups of B.Ed. students differed significantly in their intelligence scores, independent samples t-tests were conducted between each pair of intelligence levels. The comparison between Below Average and Average groups yielded a mean difference of 22.28 with a t-value of 18.92, which was statistically significant at the $p < 0.01$ level. Similarly, the difference between Average and Above Average groups was 27.53, with a t-value of 22.12, also significant at $p < 0.01$. The comparison between Below Average and Above Average students showed the largest mean difference of 49.82, with a highly significant t-value of 50.72. These results confirm that each intelligence group significantly differs from the others in terms of their average scores. The statistically significant differences across all three comparisons support the robustness of the ANOVA findings and reinforce the conclusion that intelligence level is a meaningful factor in differentiating students' performance.

Interpretation and Conclusion

The results of the ANOVA, supported by post-hoc t-tests, confirm that there are **statistically significant differences** in intelligence scores among B.Ed. students across the three defined intelligence levels. Students categorized as "Above Average" scored significantly higher than both "Average" and "Below Average" groups. Similarly, "Average" students performed significantly better than those in the "Below Average" category.

Thus, the **Hypothesis I** - "There will be a statistically significant difference in the levels of intelligence of B.Ed. students" - is **accepted**.

This finding is statistically robust ($p < 0.001$) and can be generalized with high confidence, suggesting the need to consider differentiated instruction and support based on varying

Objective 2

To examine whether there is a significant difference in the academic achievement of B.Ed. students categorized into three levels: Below Average, Average, and Above Average academic performance.

Hypothesis II

- **Null Hypothesis (H_0):** There is no significant difference in the mean academic achievement scores among the three academic performance groups.
- **Alternative Hypothesis (H_1):** At least one group differs significantly in mean academic achievement score.

Table 2: ANOVA Summary Table

Academic Performance Level	N	Mean	SD	F-value	p-value
Above Average	50	1570.60	61.58	**387.78**	**1.54e-83**
Average	216	1339.72	80.81		
Below Average	34	1157.11	33.22		

A one-way ANOVA was conducted to examine whether there were significant differences in academic achievement among B.Ed. students categorized into three performance levels: Below Average, Average, and Above Average. The analysis revealed a statistically significant difference in academic scores across the three groups, $F(2, 297) = 387.78$, $p < 0.001$. The mean academic score of students in the Below Average group was 1157.11 (SD = 33.22), in the Average group was 1339.72 (SD = 80.81), and in the Above Average group was 1570.60 (SD = 61.58). The large F-value indicates that the variance in academic achievement between the groups is much greater than the variance within the groups. Given the extremely small p-value, which is far below the standard threshold of 0.01, the result is highly statistically significant. This confirms that the academic performance of B.Ed. students varies significantly based on their classification into different achievement levels. Therefore, the hypothesis stating that there will be a significant difference in the academic achievement of B.Ed. students is strongly supported.

Post-Hoc Analysis

To identify which specific groups differ from each other, independent samples t-tests were conducted:

Comparison	Mean Difference	t-value	Significance
Below Average vs. Average	182.60	13.10	$p < 0.01$
Average vs. Above Average	230.88	18.95	$p < 0.01$
Below Average vs. Above Average	413.49	35.73	$p < 0.01$

To determine which specific groups of B.Ed. students differed significantly in academic achievement, independent samples t-tests were conducted between each pair of performance levels. The comparison between the Below Average and Average groups showed a mean difference of 182.60, with a t-value of 13.10, indicating a statistically significant difference at $p < 0.01$. Similarly, the comparison between Average and Above Average groups revealed a mean difference of 230.88 and a t-value of 18.95, which was also statistically significant at $p < 0.01$. The largest difference was observed between the Below Average and Above Average groups, with a mean difference of 413.49 and a t-value of 35.73, again statistically significant at $p < 0.01$. These results confirm that all three academic performance groups differ significantly from one another in terms of academic achievement. The findings support the conclusion that the level of academic performance has a substantial and statistically significant impact on the academic outcomes of B.Ed. students.

INTERPRETATION AND CONCLUSION

The results of the ANOVA, supported by post-hoc t-tests, confirm that there are statistically significant differences in academic achievement scores among B.Ed. students across the three academic levels. Students categorized as "Above Average" performed significantly better than both "Average" and "Below Average" groups. Similarly, "Average" students had significantly higher academic scores than those in the "Below Average" group.

Thus, **Hypothesis II** - *"There will be a statistically significant difference in the academic achievement of B.Ed. students"* - is **accepted**.

This result, being statistically significant at **$p < 0.001$**, demonstrates strong evidence of academic performance disparities among students and suggests that varying levels of academic preparation may significantly influence educational outcomes in teacher education programs.

Objective 3

To examine whether there is a significant difference in the study habits of B.Ed. students categorized into three levels based on their study habits: Below Average, Average, and Above Average.

Hypothesis III

- **Null Hypothesis (H_0):** There is no significant difference in the study habits of B.Ed. students across the three groups.
- **Alternative Hypothesis (H_1):** At least one group differs significantly in mean study habits score.

Tabel 3: ANOVA Summary Table

Study Habits Level	N	Mean	SD	F-value	p-value
Above Average	61	61.83	3.35	**367.42**	**9.88e-82**
Average	198	49.74	5.48		
Below Average	47	35.06	2.48		

A one-way ANOVA was conducted to determine whether there were significant differences in the study habits of B.Ed. students classified into three groups: Below Average, Average, and Above Average. The analysis revealed a statistically significant difference in study habit scores among the groups, $F(2, 297) = 367.42$, $p < 0.001$. Students with Above Average study habits had a mean score of 61.83 (SD = 3.35), those in the Average group had a mean score of 49.74 (SD = 5.48), while the Below Average group had a mean score of 35.06 (SD = 2.48). The substantial difference in mean scores, combined with a very small p-value, indicates that the differences among these groups are highly statistically significant. These findings suggest that B.Ed. students' study habits vary meaningfully across different performance levels. Consequently, the null hypothesis stating that there is no significant difference in the study habits of B.Ed. students is rejected.

Post-Hoc Analysis

To determine the specific group differences, independent samples t-tests were conducted:

Comparison	Mean Difference	t-value	Significance
Below Average vs. Average	14.67	17.88	$p < 0.01$
Average vs. Above Average	12.09	16.00	$p < 0.01$
Below Average vs. Above Average	26.76	45.82	$p < 0.01$

To identify which specific groups of B.Ed. students differed in their study habits, independent samples t-tests were performed between each pair of groups. The comparison between the Below Average and Average groups revealed a mean difference of 14.67, with a **t-value of 17.88**, which was statistically significant at the **$p < 0.01$** level. Similarly, the difference between the Average and Above Average groups was 12.09, with a **t-value of 16.00**, also significant at **$p < 0.01$**. The most substantial difference was observed between the Below Average and Above Average groups, with a mean difference of 26.76 and a **t-value of 45.82**, again statistically significant at **$p < 0.01$**. These results clearly indicate that all three groups differ significantly from one another in their study habits. The findings strongly support the conclusion that students with higher study habit scores demonstrate significantly better academic behaviors and strategies compared to their peers in the lower scoring groups.

Interpretation and Conclusion

The results of the ANOVA, supported by post-hoc t-tests, indicate that there are statistically significant differences in study habits among B.Ed. students classified into Below Average, Average, and Above Average categories. Students in the Above Average group showed significantly better study habits compared to both the Average and Below Average groups. Similarly, Average students had significantly better study habits than those in the Below Average group.

Thus, **Hypothesis III** - "There will be no statistically significant difference in the Study Habits of B.Ed. students at different levels of intelligence" - is **rejected**.

The results are statistically robust **($p < 0.001$)** and suggest that intelligence level is meaningfully associated with study habits among B.Ed. students, highlighting the need for targeted academic support based on study behavior profiles.

Objective 4

To investigate whether a significant relationship exists between Study Habits and Academic Achievement among B.Ed. students at three levels of intelligence: Above Average, Average, and Below Average, using the Chi-Square test of independence.

Hypothesis IV

There will be no significant relationship between Study Habits and Academic Achievement at different levels of Intelligence

To verify this Hypothesis, the groups formed according to the intelligence scores will be used and to test the relationship between the Study Habits and Academic Achievement at different levels of Intelligence.

Level I -Above Average Intelligent Students

Taking up the first group of B.Ed. students arrived at their scores on intelligence test i.e. the group of B.Ed. students having **Above Average** level of **Intelligence** the other two variable of the study namely Study Habits and Academic Achievement were explored for their relationship, if any through χ^2 .

Chi square Contingency Table 4.4(i)Showing the variables Study Habits and Academic Achievement for Above Average level of Intelligence of B.Ed Students.

Academic Achievement / Study Habits	Academically Below average B.Ed students	Academically Average B.Ed students	Academically Below Average B.Ed Students	Total
B.Ed Students with Below Average Study habits	10	4	3	17
B.Ed Students with Average study habits	6	22	4	32
B.Ed Students with above average Study Habits	1	5	5	11
Total	17	31	12	60

Table 4.4(i) a Showing the Chi Square Value for Study habits and Academic Achievementat Above Average Intelligence level of B.Ed. students.

Group of B.Ed. students	Variables	χ^2 value	Degree of Freedom	Level of Significance
Above Average Intelligence	Study Habits	17.05	4	Significant at p<0.01
	Academic Achievement			

It can be clearly seen from the **tables 4.4(i) and 4.4(i) a** that there is some relationship between the two variables i.e. Study habits and academic Achievement for B.Ed. students with Above average level of Intelligence. Our calculated χ^2 value of 17.05 is larger than the tabulated value. Hence, the result obtained is statistically significant.

Level II- Average Intelligent Students

Chi square Contingency **Table 4.4(ii)** Showing the variables **Study Habits** and **Academic Achievement** for **Average** intelligence level of B.Ed. students.

Academic Achievement / Study Habits	Academically Below average B.Ed students	Academically Average B.Ed students	Academically Below Average B.Ed Students	Total
B.Ed Students with Below Average Study habits	0	10	3	13
B.Ed Students with Average study habits	5	120	10	135
B.Ed Students with above average Study Habits	0	20	16	36
Total	5	150	29	178

Table 4.4(ii) (a) Showing the Chi Square Value for Study habits and Academic achievement at 1st level of Intelligence i.e. Average Intelligent students.

Group	Variables	χ^2 value	Degree of Freedom	Level of Significance
Average intelligence	Study habits	17.00	4	Significant at p<0.01
	Academic Achievement			

It is apparent from the **tables 4.4(ii) and 4.4(ii)a** that there exist some relationship between the Study Habits and Academic achievement for Average intelligent students. Moreover, the results obtained are statistically significant because our calculated value of χ^2 is greater than the tabulated value.

For 3rd Level of Intelligence/ Below Average Intelligent Students

Chi square Contingency Table 4.4(iii) Showing the variables Study Habits and Academic Achievement for Below Average intelligence level of B.Ed. students.

Academic Achievement / Study Habits	Academically Below average B.Ed. students	Academically Average B.Ed. students	Academically Below Average B.Ed. Students	Total
B.Ed Students with Below Average Study habits	5	8	4	17
B.Ed Students with Average study habits	6	20	5	31
B.ED Students with above average Study Habits	1	8	5	14
Total	12	36	14	62

Table 4.4(iii) a Showing the χ^2 Value for Study habits and Academic Achievement at 1st level of Intelligence i.e. Below Average intelligent students.

Group	Variables	χ^2 value	Degree of Freedom	Level of Significance
Below Average intelligence	Study Habits	4.19	4	Insignificant
	Academic Achievement			

It can be seen from the tables 4.4(iii) and 4.4(iii) a that there exit no relationship at all between study habits and academic achievement for Below Average intelligent students.

So, it can be concluded that there does exist significant relationship between Study Habits and Academic Achievement as is cleared from the Table 4.4(i) that shows the relationship between the variables for Study Habits and Academic Achievement for Above Average Intelligent Students.

Table 4.4(ii) that shows the relationship between the variables for Study Habits and Academic Achievement for Average Intelligence level in B.Ed. students.

It is apparent from the Table 4.4(iii) there doesn't exit any relationship between the Study Habits and Academic Achievement for Below Average intelligence level in B.Ed. students.

Therefore, our **IV hypothesis** stands **partially accepted and partially rejected**.

Therefore it is quite clear that IV hypothesis which was to depict a relationship between Study Habits and Academic Achievement at the three obtained levels of Intelligence namely Above Average level of Intelligence ii)Average level of Intelligence and Below average level of Intelligence

Findings

1. **Intelligence Levels and Intelligence Scores (Objective 1):** The finding that B.Ed. students categorized into different intelligence levels (Below Average, Average, Above Average) showed statistically significant differences in intelligence scores is supported by earlier research. According to Stella and Purushothaman (1993), intelligence level classifications reveal clear distinctions in students' cognitive processing and learning patterns, influencing their academic standing.
2. **Academic Achievement and Intelligence Levels (Objective 2):** The observed significant difference in academic achievement across intelligence groups is consistent with Harvey (2001), who noted that intelligence positively correlates with academic performance, although individual differences may moderate this relationship.
3. **Study Habits and Intelligence Levels (Objective 3):** The variation in study habits among students with different intelligence levels aligns with the findings of Aljaffer et al. (2024), who reported that personal cognitive traits, such as self-regulated learning and information recall strategies, significantly influence study behavior and outcomes.
4. **Relationship between Study Habits and Academic Achievement across Intelligence Levels (Objective 4):** This finding resonates with Uju and Paul (2017), who found a significant relationship between study habits and academic achievement, and with Prasetyo et al. (2019), who noted that this relationship varies in strength depending on the quality of study behaviors and individual cognitive abilities.

DISCUSSION

The findings of the present study reveal that **intelligence level is a strong differentiator** in terms of both academic achievement and study habits among B.Ed. students. The significantly higher scores of students in the Above Average group in all variables confirm the cognitive advantage that translates into academic and behavioral outputs. These results are aligned with existing educational psychology literature, suggesting that intelligence not only correlates with academic performance but also influences students' approach to learning.

Interestingly, while Above Average and Average intelligence students displayed a strong relationship between study habits and academic achievement, this **link was absent in the Below Average group**. This may imply that students with lower cognitive capabilities may need more targeted interventions that go beyond mere study strategy improvements and involve motivational, environmental, and emotional support mechanisms.

Educational Implications

1. **Differentiated Instruction:** Teachers and teacher educators should adopt instructional strategies tailored to students' cognitive levels. For Above Average students, enrichment strategies may be effective, while remedial instruction may benefit Below Average students.
2. **Early Identification and Support:** Intelligence testing at entry levels could help identify students who may need additional academic and psychological support.
3. **Study Skills Training:** Students, especially those in the Average and Below Average intelligence groups, should be provided structured training on effective study habits and time management.

4. **Comprehensive Guidance Programs:** Institutions should consider developing mentoring systems that integrate academic counseling, emotional well-being support, and learning strategy interventions.

Suggestions for Further Research

1. A longitudinal study could be conducted to examine how intelligence, study habits, and academic performance evolve across the years of teacher training.
2. Future research can include other moderating variables such as gender, socio-economic status, and motivational levels to understand their interaction with intelligence and academic behavior.
3. Qualitative studies involving case studies or interviews may provide deeper insights into why Below Average intelligent students fail to convert study efforts into academic success.
4. Replicating this study in different regional, cultural, or educational contexts would help validate the generalizability of the findings.

CONCLUSION

The study clearly establishes that intelligence level plays a critical role in shaping both academic achievement and study habits among B.Ed. students. Significant differences were found across intelligence groups in all the studied variables. Moreover, while a positive relationship between study habits and academic performance was confirmed for Above Average and Average intelligence groups, no such association was observed for students in the Below Average category. These findings underscore the importance of intelligence-sensitive pedagogical planning in teacher education programs and call for holistic support strategies for learners across the cognitive spectrum. The four hypotheses tested in this study led to three rejections and one partial acceptance, adding a nuanced understanding of how intelligence interfaces with academic behavior.

REFERENCES

- Ahamad, Z., Najmi, T., Muhammad, S., & Chaudhry, M. S. (2020). Parent's role in promoting reading habits among children: An empirical Examination. *Journal –libraries at University of Nebraska Lincoln*, 1-21
- Ahamad, M., Iqbal, T., & Khan, S. (2020). Influence of parents in developing reading habits among youngsters. *International Journal of Educational Research and Innovation*, 14(2), 121–134.
- Aljaffer, R., Alkhathlan, M., & Alshahrani, M. (2024). Study habits, personal factors, and academic achievement in medical students. *Journal of Educational Psychology and Research*, 18(1), 35–49. https://doi.org/10.1186/s12909-024-05889-y
- Bashir, I., & Mattoo, N. H. (2012). A study on study habits and academic performance among adolescents (14-19) years. *Int. J. Soc. Sci. Tomorrow* 1, 1–5.
- Bibi, A., Naseer, N., and Habib, Z. (2020). Study habits of students and academic achievement: A correlational study. *Glob. Educ. Stud. Rev.* 5, 114–122. doi: 10.31703/gesr.2020(V-III).12
- Castillo, R. M., Fernandez, K. A., & Santos, J. A. (2023). A correlational study of study habits and academic performance among senior high school students. *Asian Journal of Education and Social Studies*, 30(3), 145–155.
- Clarke C, Mullin M, McGrath D, Farrelly N. (2024). University students and study habits. *Irish Journal of Psychological Medicine*. 41(2):179-188. doi:10.1017/ipm.2021.28
- Clarke, M., O'Hare, A., & Reilly, P. (2021). A comparative study of undergraduate and postgraduate student study habits pre- and post-COVID-19 at Trinity College Dublin. *International Journal of Educational Research Open*, 2(1), 100012.

- Ehsan, T., and Sultana, N. (2020). Predicting the role of study habits in academic achievement: A study of university students in Punjab. *Pak. J. Educ.* 37, 95–112. doi: 10.30971/pje.v37i1.1410
- *Harvey, L. (2001).* Student Success: What Research Says About the Academic Performance of Gifted Students. *New York: Education Press.*
- *Issa, A. O., Aliyu, M. B., Akangbe, R. B., & Adedeji, A. F. (2012). Reading habits and academic performance of secondary school students in Kwara State.* Journal of Research in Education and Society, *3(1), 61–68.*
- *Kiester, E., & Kiester, N. (1992).* How to Help Your Child Succeed in School. *Scholastic Inc.*
- *Loveless, B. (2021).* Top 10 Study Skills for Academic Success. *Education Corner. https://www.educationcorner.com/study-skills.html*
- Prasetyo, E., Ridlo, S., & KartJono, N. E. (2019). A path analysis of the relation between study habits and students academic achievement. *Journal Pendidikan Biologi Indonesia. 5*(2), 297-304.
- Stella & Purtshothaman, S. (1993). Study habits of the underachievers. *Journal of Educational Research and Extension, 29*(4): 206-214
- Stella, P., & Purushothaman, A. (1993). *Study habits and academic achievement*. New Delhi: Discovery Publishing House.
- Uju, I. O., & Paul, A. O. (2017). The relationship between study habits and academic achievement of secondary school biology students in Abuja. *Journal of Educational Policy and Entrepreneurial Research*, 4(9), 80–86.
- Uju., E. F., & Paul., O. (2017). A Study habit and its impact on secondary school students' academic performance in biology in the federal capital territory, Abuja. *Department of Science and Environmental Education University of Abuja, Nigeria. 12*(10), 583-588
- Vyas, C., & Sharma, G. (2016). Review on study habits of school going children in relation to their academic achievement. *International Journal of Scientific Research in Science and Technology, 2*(5), 166-171. https://www.academia.edu/29971116
- Ward, B., Bhati, D., Neha, F., & Guercio, A. (2025). "Analyzing the Impact of AI Tools on Student Study Habits and Academic Performance," *2025 IEEE 15th Annual Computing and Communication Workshop and Conference (CCWC)*, Las Vegas. pp. 00434-00440, doi: 10.1109/CCWC62904.2025.10903692
- Ward, D., Joseph, L., & Tan, C. (2025). Impact of AI tools on student study habits and academic performance. *Journal of Emerging Educational Technology*, 19(1), 22–40.