

The Role Of Academic Flow In The Academic Achievement Of Secondary School Students

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KEYWORDS

Academic flow,
Academic Achievement,
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Correlation

ABSTRACT

The concept of learning flow plays a crucial role in influencing academic achievement. When students encounter challenging tasks, experiencing frustration can hinder their ability to effectively engage with their studies. Without a productive learning process, students may struggle to meet academic expectations, which can lead to disengagement or even dropout. Therefore, fostering a positive learning flow is key to overcoming obstacles and promoting persistence. The pursuit of academic excellence remains a central goal for students, as it not only shapes their educational journey but also unlocks future career opportunities and contributes to personal growth. Flow, often described as a state of intense focus and immersion in a task, has become a critical factor in determining academic success. When students enter this state, they are able to push through difficulties and perform at their highest potential, ultimately enhancing both their educational outcomes and overall well-being. The study sample comprised secondary school students enrolled in CBSE schools under the Central Government in the Vijayawada region, Krishna District, Andhra Pradesh. A total of 1000 of 9th-grade students were selected, representing both rural and urban areas within the district. The findings indicated that there is a positive correlation between Academic Flow and Academic Achievement among secondary school students.

I - INTRODUCTION

The concept of academic flow refers to a state of deep immersion, focus, and engagement in academic tasks, where students are fully involved in their learning. This state is characterized by several key dimensions, including a balance between challenge and skill, immediate and clear feedback, well-defined goals, intense concentration. The first three dimensions balance between challenge and skill, clear feedback, and well-defined goals form the foundation for entering a state of flow, while the remaining six describe the experience itself. Flow is not only relevant to leisure or creative activities but also plays a significant role in academic settings. In these contexts, "learning flow" refers to students being deeply involved and enjoying the learning process, without feelings of boredom or anxiety.

Academic flow becomes an engaging and dynamic experience because each student encounters different challenges and conditions in reaching this state during their academic journey. While some students naturally enter flow states with ease, others struggle to achieve them due to a range of influencing factors, both intrinsic and extrinsic (Asakawa, 2004). Students who experience academic flow often find themselves deeply motivated to participate in academic activities because they are eager to learn and grow. This intrinsic desire enhances their enjoyment and fulfillment during these activities (Mesurado et al., 2016). In other words, the drive to immerse oneself in academic tasks stems from internal motivation, which plays a crucial role in fostering the flow experience.

In many countries, academic performance is assessed through standardized tests or transcripts. For example, in the Netherlands, the CITO tests measure primary school students' academic progress in subjects like mathematics, reading, spelling, and comprehension. The SASCHA study in Germany examines the challenges children face as they transition from elementary to secondary school, focusing on subjects such as math, German, and English.

Research suggests that the factors influencing academic performance can be divided into external and internal categories. External factors include course content, teaching methods, subject expertise, and social interactions with peers and instructors. Internal factors, however, mainly involve a student's personal competencies, cognitive styles, psychological traits, and self-efficacy. In this context, learning flow is emerging as a key factor that can influence academic outcomes by affecting not only cognitive processes but also social interactions and personal attributes.

II - STUDIES ON ACADEMIC FLOW AND ACADEMIC ACHIEVEMENT

The concept of "Flow," as outlined by Kaya and Ercag (2023) refers to a deep state of immersion and concentration in an activity, marked by a sense of total absorption. This state is characterized by nine essential dimensions: a balance between the challenge of a task and one's skills, immediate and clear feedback, well-defined goals, intense focus, seamless action, increased self-awareness, a strong sense of control, a distorted perception of time, and complete engagement with the task.

In a study by Sumaya and Darling (2018), the connection between flow, procrastination, and academic performance was explored using real-time experience sampling. Their findings, drawn from a six-day study leading up to an assignment deadline, showed that students who experienced flow achieved significantly higher academic performance compared to those who did not enter the flow state.

Rijavec, Golub, and Olcar (2016) surveyed 176 university students to assess the frequency of flow experiences in both academic and everyday contexts. Their research indicated that flow was most often experienced during exam preparation and seminars, while lectures were less likely to induce flow. Furthermore, flow was more frequently encountered in non-academic settings than in academic ones.

Joo, Oh, and Kim (2015) used structural equation modeling to investigate how self-efficacy, test anxiety, instructional design, intrinsic value, flow, and academic achievement were interrelated among online university students in Korea. The study found that self-efficacy and instructional design had a significant impact on flow, which, in turn, mediated the relationship between self-efficacy, instructional design, and academic achievement. Both self-efficacy and intrinsic motivation were found to positively affect academic performance, with flow playing a crucial role in this process.

Diaz and Silveria (2012) focused on the occurrence of flow among high school students and identified the types of activities that promoted flow, as well as the relationship between academic and social contexts in which it occurred. Their research revealed that students experienced flow most often during musical and academic activities, with these experiences also leading to higher levels of attention and enjoyment compared to social activities.

Bakker (2005), drawing from emotional contagion theory, suggested that flow could transfer from teachers to students, creating a positive feedback loop.

Michels (2015) also identified a positive relationship between achievement goals and psychological flow, both in academic and athletic contexts.

RELATIONSHIP BETWEEN ACADEMIC FLOW AND ACADEMIC ACHIEVEMENT

Flow is a psychological state where individuals experience deep immersion, focus, and enjoyment in an activity, resulting in positive feelings and a sense of fulfillment (Csikszentmihalyi, 1990). This optimal condition is marked by intense concentration, passion, and intrinsic interest, allowing individuals to lose themselves in the task without being distracted by external factors. Flow is believed to lead to improved performance, as individuals in this state tend to perform better than those who do not experience it (Bakker, 2005).

This positive psychological experience promotes total concentration and comfort, creating an environment where people are more likely to be motivated and engaged (Bakker, 2005). Flow, in academic settings, can be broken down into three core components: absorption, enjoyment, and

intrinsic motivation (Bakker, 2005). Absorption refers to an individual's complete focus and alertness toward the activity at hand (Chandra, 2013). Enjoyment arises from the cognitive and emotional satisfaction experienced during the flow state, which makes even lengthy tasks feel rewarding. Intrinsic motivation refers to the internal drive and desire to engage in an activity, often leading to a deeper commitment and sense of fulfillment in the process.

Several factors contribute to an individual experiencing flow, which can be broadly categorized into personal and environmental factors (Csikszentmihalyi, 2014). Personal factors include an individual's skills and abilities, where their perception of their own competence plays a significant role in the likelihood of experiencing flow (Purwati & Akmaliah, 2016). Motivation, particularly intrinsic motivation, is essential for flow to emerge, as individuals need to be driven from within to pursue and complete tasks (Arif, 2013).

Environmental factors also influence the experience of flow. The level of challenge within the environment, such as the difficulty of a task, can impact whether flow is achieved. Social support, such as encouragement from peers, teachers, or family, also plays a role in helping individuals stay engaged and overcome obstacles in their activities (Amira & Muhid, 2020). Thus, both individual characteristics and external conditions can either facilitate or hinder the flow experience, highlighting the importance of both personal and environmental elements in fostering this optimal state.

Further research aimed at exploring the links between mindfulness, learning flow, self-efficacy, and academic performance has also produced mixed results. A study of 83 students participating in a game-based learning program did not find direct support for flow's impact on mastery experience or self-efficacy (Adil et al., 2020). These findings suggest that the relationship between learning flow and academic performance is complex and may vary across contexts and individual experiences.

Given these varied results, a meta-analysis has been conducted to clarify the nature of the relationship between learning flow and academic performance. This research aims to provide a more comprehensive understanding of how learning flow influences academic outcomes and to identify the conditions under which it may be most beneficial. The findings of this study will not only contribute to educational theory but also have practical implications for improving student engagement and performance through strategies that promote learning flow. The central question of this study is whether there is a consistent relationship between students' learning flow and their academic performance.

III -RESEARCH METHODOLOGY

Research Questions:

1. Do adolescent students differ in their levels of academic flow?
2. Do adolescent students differ in their levels of academic achievement?
3. How do factors such as gender, residential area, and type of family affect academic flow and achievement?
4. Is there any relationship between academic flow and academic achievement?

Let me know if you want to further refine this!

TITLE OF THE STUDY

"The Role of Academic flow in the Academic achievement of Secondary School Students".

VARIABLES OF THE STUDY

A. Independent Variables

Academic flow

B. Dependent Variables

Academic achievement

C. Demographical Variables

- a) Gender : Boys/Girls
- b) Residential Area : Rural/Urban
- c) Type of Family : Joint family and nuclear family

OBJECTIVES OF THE STUDY

1. To study the level of Academic flow of the Secondary School Students.
2. To study the level of Academic achievement of the Secondary School Students.
3. To study the influence of the following demographic variables on the Academic flow and Academic achievement of Secondary School Students.
 - a. Gender: Boys/Girls
 - b. Residential Area: Rural/Urban
 - c. Type of Family: Government/Private
 - d. Parental Occupation : Professional/Non Professional
4. To study the relationship between Academic flow and Academic achievement of Secondary School Students.

HYPOTHESIS OF THE STUDY

1. There would be no significant difference between boys and girls among Secondary School Students in their Academic flow.
2. There would be no significant difference between Secondary School Students from rural and urban areas in their Academic flow.
3. There would be no significant difference between Secondary School Students belonging to joint and nuclear families in their Academic flow.
4. There would be no significant difference between boys and girls among Secondary School Students in their Academic achievement.
5. There would be no significant difference between Secondary School Students from rural and urban areas in their Academic achievement.
6. There would be no significant difference between Secondary School Students belonging to joint and nuclear families in their Academic achievement.
7. There would be no significant relationship between Academic flow and Academic achievement among Secondary School Students.

Method of the Study

This method involved administering questionnaires and tests to students, with the collected scores being analyzed for significant differences across various variables. A survey method like this requires meticulous planning, an expert approach to data analysis, and careful interpretation of the findings. Additionally, it necessitates logical, well-structured reporting to effectively communicate the results.

Population of the Study

The study focused on secondary school students enrolled in both government and private schools across rural and urban areas of Vijayawada, Krishna District, Andhra Pradesh. From the overall population, samples of 1,000 students (representing 1.90% of the total population) from the 9th grade were selected for inclusion in the present research.

Sampling Techniques

A stratified random sample of 1,000 9th-grade secondary school students from the Guntur district in Andhra Pradesh was chosen for this study.

Scope of the Study

The study focused on secondary school students enrolled in Central Government-run CBSE schools in Vijayawada, Krishna District, Andhra Pradesh. A representative sample of 1000 students from standard IX was selected from various regions within the district to participate in the research. To ensure diversity and representativeness, the researcher employed a stratified random sampling technique, taking into account factors such as birth order, locality, gender, and the type of school management. This approach was designed to capture a broad spectrum of student characteristics and provide more accurate and generalizable findings.

Statistical Techniques used for the Study

The Investigator collected raw scores after conducting calculations with the assistance of a scoring key. To make sense of the raw data and draw meaningful conclusions, it is essential to organize, summarize, and analyze the data using appropriate statistical methods. The Investigator employed various statistical techniques to interpret the raw scores effectively.

The statistical methods used for data analysis include:

1. Arithmetic Mean
2. Standard Deviation
3. Percentage of Mean
4. t-test and r-value –
5. ANOVA Analysis

IV – DATA ANALYSIS (ACADEMIC FLOW)

Objective-1:

To study the level of Academic flow of the Secondary School Students.

Table -1 Academic flow - Whole sample Analysis

Whole	Mean	S.D	% of Mean	1/5 of Mean
1000	72.19	9.02	72.19	14.43

Observation

Based on the data presented, there are 1,000 students in the sample. The mean academic score is 72.19, with a standard deviation of 9.02. The percentage of the mean is 72.19%, and one-fifth of the mean value is 14.43. These statistics suggest that the academic performance of the secondary school students is above average, which is a positive indicator for their future educational success.

Interpretation

The data indicates that the majority of secondary school students are performing above average in their academic pursuits, suggesting that their academic flow is strong. This could point to a good understanding of their curriculum and effective study habits.

Discussion

The findings suggest that secondary school students are generally performing above average academically. However, it's important to note that each student learns in a unique way. Different learning styles, such as visual, auditory, or kinesthetic learning, can have a significant impact on academic performance. When students fail to perform well, it is often because they haven't yet identified a learning style that works best for them. Therefore, it is crucial to recognize the importance of helping students discover their optimal learning method. Schools and educators can assist in this process by providing varied instructional strategies and encouraging self-reflection on learning habits. By fostering a learning environment that accommodates diverse styles, academic performance can be greatly improved. Additionally, open communication channels between

students and teachers can enhance understanding and support, further contributing to better academic outcomes.

ACADEMIC FLOW –VARIABLES ANALYSIS

Hypothesis -1 (Hypothesis Testing)

Table -2 Academic flow - Gender

Demographic Variable	Categories	N	Mean	% of mean	SD	S.E.D	't' Value
Gender	Boys	500	70.41	70.41	8.01	0.51	3.19**
	Girls	500	72.04	72.04	7.69		

****Significant at 0.05 level &Table vales 1.96 at 0.05 and 2.58 at 0.01 level.**

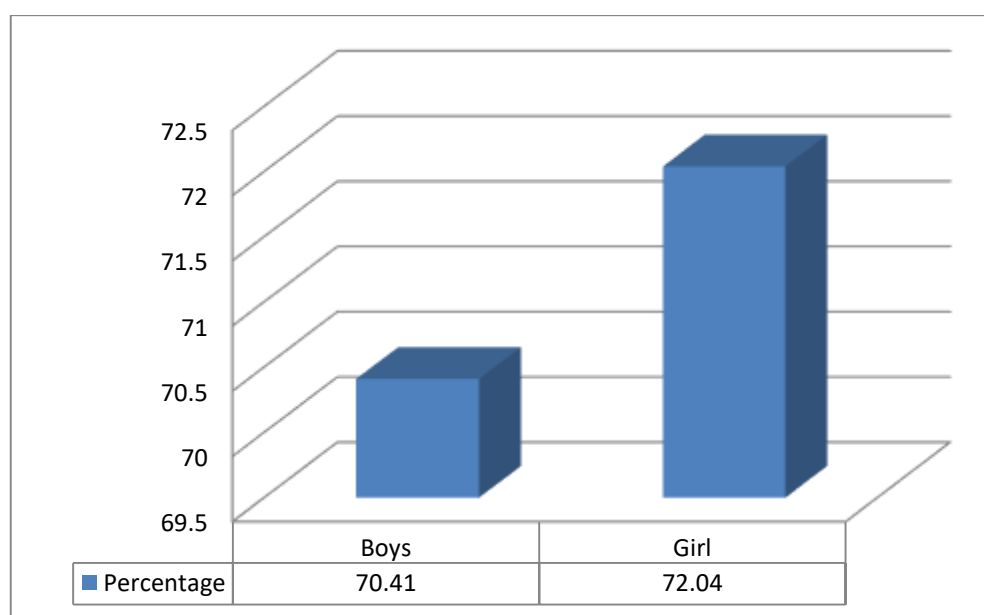


Fig: 1 Academic flow – Gender

Observation

From the above table, the following observations have been made. The total numbers of students are 1000. The male students are 500 and the female students are 500. The mean value of male students is 70.41, the standard deviation is 8.01 and the percentage of the mean is 70.41. The mean value of female students are 500, the standard deviation is 7.69 and the percentage of the mean is 72.04. The S.E.D value is 0.51 and the "t" value is 3.19 which is significant at the 0.05 level.

Interpretation

The result shows that the variable "gender" is showing its influence on the Academic flow of secondary school students. There is a significant difference between male and female students in their Academic flow. The finding reveals that female students are better in their Academic flow.

Discussion

The above finding reveals that the female students are better in their Academic flow s, when compared to their counter parts. Generally female students put more efforts for getting good marks in all subjects, whereas Male students has diversified thoughts and works which may affect their achievement academically keeping a positive outlook. They must send out the negativity from their minds and focus on the positive sides to get a good mark which improves their Academic flow.

Hypothesis -2 (Hypothesis Testing)

Table -3 Academic flow - Residential Area

Demographic Variable	Categories	N	Mean	% of mean	SD	SED	't' Value
Residential Area	Rural	500	68.10	68.50	8.03	0.50	1.40 ^{NS}
	Urban	500	67.08	67.80	7.92		

NS: Not significant at 0.05 level & Table vales 1.96 at 0.05 and 2.58 at 0.01 level

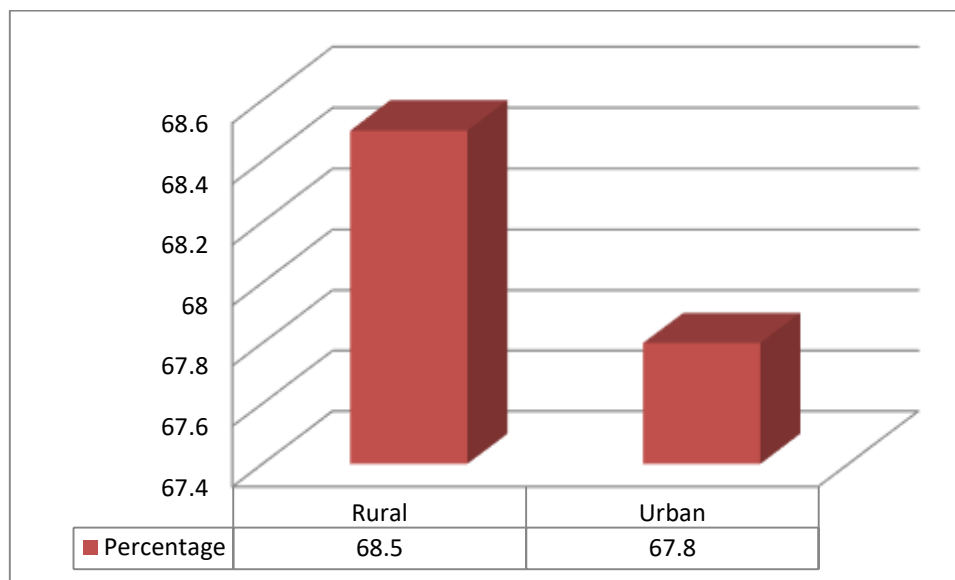


Fig: 2 Academic flow – Residential Area

Observations:

The data reveals that the total number of students under consideration is 1000, equally split between rural and urban secondary school students (500 each). For rural students, the mean score is 68.10 with a standard deviation of 8.03, which corresponds to 68.50% of the total mean value. For urban students, the mean score is 67.08, with a standard deviation of 7.92, and the percentage of the mean value is 67.08%. The Standard Error of Difference (S.E.D) is 0.50, and the calculated 't' value is 1.40, which does not reach statistical significance at the 0.05 level.

Interpretation:

These findings indicate that the variable "residential area" does not significantly affect the academic performance of secondary school students. The analysis shows no significant difference in academic performance between rural and urban students. The academic flow appears to be nearly identical for both groups, suggesting that the location of the school whether urban or rural does not play a crucial role in shaping students' academic outcomes.

Discussion:

The results highlight that, contrary to earlier assumptions where rural students were thought to lag behind urban students in terms of educational facilities and opportunities, there is no notable difference in academic performance between the two groups. In the past, rural areas faced challenges in providing the necessary infrastructure and educational resources. However, with advancements in infrastructure, including better schools, colleges, roads, technology, libraries, and access to the internet, rural students today have access to comparable educational resources as their urban counterparts. As a result, students from rural areas are now equally equipped to excel academically, thus leading to similar outcomes in academic performance between rural and urban students. This shift underscores the progress made in reducing the rural-urban educational divide.

Hypothesis -3 (Hypothesis Testing)

Table -4 Academic flow - Type of Family

Demographic Variable	Categories	N	Mean	% of mean	SD	SED	't' value
Type of Family	Joint Family	250	71.24	71.24	8.01	1.96	4.67**
	Nuclear Family	750	62.08	62.08	8.03		

**Significant at 0.05 level & Table value 1.96 at 0.05 and 2.58 at 0.01 level

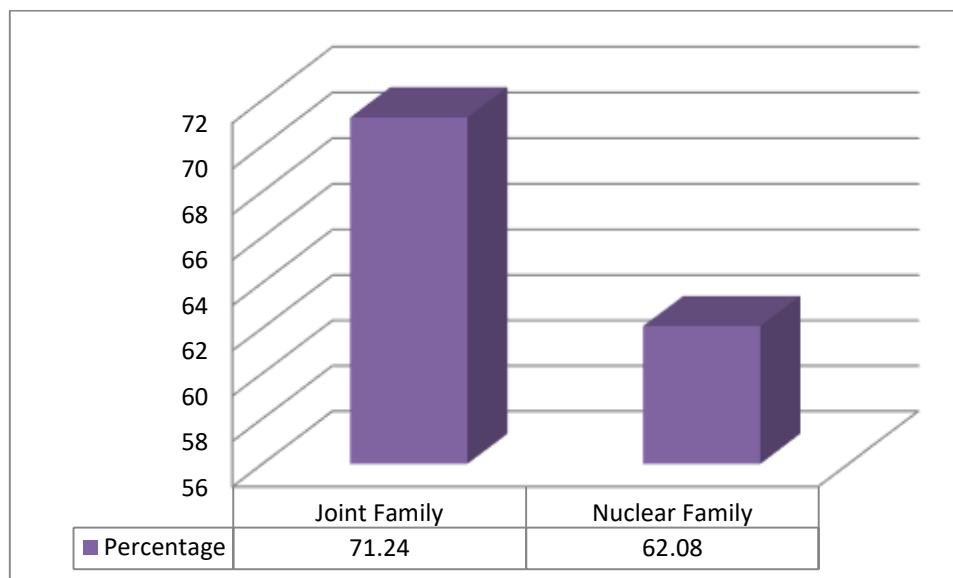


Fig: 3 Academic flow – Type of Family

Observations

From the data provided, the following conclusions can be drawn. There is a total of 1000 students in the study. Among them, 250 students come from joint families, and 750 students come from nuclear families. The mean academic performance score for students from joint families is 71.24, with a standard deviation of 8.01, reflecting a mean percentage of 71.24%. In contrast, the mean score for students from nuclear families is 62.08, with a standard deviation of 8.03, and a mean percentage of 62.08%. The Standard Error of Difference (S.E.D.) is 1.96, and the calculated “t” value is 4.67, which is statistically significant at the 0.05 level.

Interpretation

The results indicate that the type of family structure whether joint or nuclear has a significant influence on the academic performance of secondary school students. There is a clear distinction between students from joint and nuclear families in terms of their academic flow, with students from joint families performing better academically. The data shows that students from nuclear families, on average, exhibit higher levels of academic achievement.

Discussion

This finding suggests that students from nuclear families tend to perform better in their academic endeavors. Academic performance is not only shaped by classroom learning but also by external influences such as parental involvement and family dynamics. The level of parental engagement, which often involves helping with homework, setting academic expectations, and providing emotional and motivational support, plays a crucial role in a student's academic development. In joint families, while grandparents may offer guidance and support, nuclear family structures often see parents taking on the bulk of responsibility for the child's education. This could contribute to the better academic outcomes observed in students from nuclear families.

Furthermore, as joint families become less common in modern society and the nuclear family model becomes more prevalent, parents in nuclear families may increasingly bear the responsibility for their children's academic success. This shift in family dynamics, where parents take on the roles that were once shared with extended family members, might explain the superior academic performance of students from nuclear families in the study.

V: SECTION - B (Academic Achievement)

In this section, the researcher analyzed the collected data from the sample through questionnaire. The data was analyzed and presented in the form of following tables with their interpretation in drawing out findings and discussions.

Academic Achievement - Whole Sample Data Analysis

Objective-2: To find out the level Academic Achievement of secondary school students.

Table -5 Academic Achievement- Whole sample

<i>Whole</i>	<i>Mean</i>	<i>S.D</i>	<i>% of Mean</i>	<i>1/5 of Mean</i>
1000	72.19	9.02	72.19	14.43

Observation

Based on the data, the total student population is 1,000, with a mean score of 72.19 and a standard deviation of 9.02. The mean score represents 72.19% of the total possible score, and the standard deviation of 9.02 indicates variability in student performance. One-fifth of the mean, which is 14.43, serves as a useful reference point for understanding deviations from the average. This suggests that overall; students are performing above the expected level, which is an encouraging indicator for their future academic and professional prospects.

Interpretation

These results highlight that the academic achievement of secondary school students is generally above average. Most students are performing well relative to academic expectations, which is a positive sign for their educational outcomes. The consistency in performance across the student body reflects a healthy level of academic engagement and a foundation for future success in higher education or career pursuits.

Discussion

The data suggests that secondary school students are performing at an above-average level overall. However, each student's academic success is influenced by their individual learning style. Struggles often arise when students have not yet found or adapted to the learning approach that suits them best. To foster greater academic achievement, it is essential for students to explore and identify the learning strategies that work for them. Encouraging a growth mindset, as well as offering personalized support and guidance, can help students improve by tailoring learning experiences to meet their needs. Additionally, fostering open communication between students and educators can help ensure that each student receives the guidance necessary to thrive academically.

Academic Achievement - Variable wise Analysis

Hypothesis - 4 (Hypothesis Testing)

Table -6 Academic Achievement- Gender Analysis

<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>% of Mean</i>	<i>SD</i>	<i>S.E.D</i>	<i>'t' Value</i>
Boys	500	70.41	70.41	8.01	0.51	3.19**
Girls	500	72.04	72.04	7.69		

****Significant at 0.05 level & Table values 1.96 at 0.05 and 2.58 at 0.01 level.**

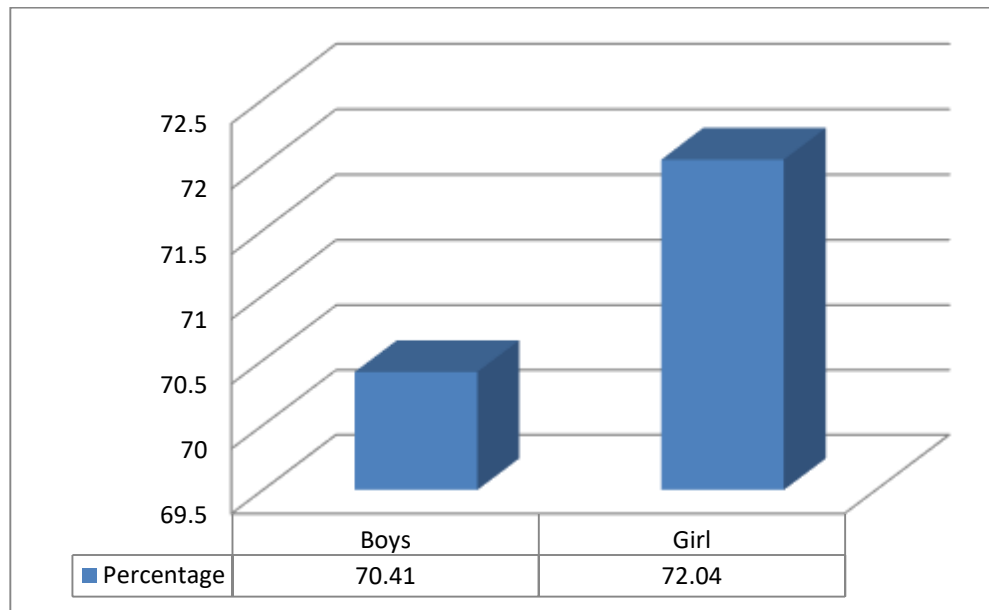


Fig: 4. Academic Achievement- Gender Analysis

Observations:

The analysis of academic performance from a sample of 1000 students, evenly divided between 500 male and 500 female participants, reveals important trends in their scores. Male students have a mean score of 70.41 with a standard deviation of 8.01, while female students have a mean score of 72.04 and a standard deviation of 7.69. The Standard Error of Difference (S.E.D.) is calculated to be 0.51, and the t-value is 3.19, which is statistically significant at the 0.05 level.

Interpretation:

The data indicates a statistically significant difference in academic performance between male and female students, with females outperforming males on average. The significant t-value (3.19) reinforces that this difference is unlikely to be due to random variation, suggesting that gender plays a meaningful role in shaping academic outcomes. Female students, on average, scored higher than their male counterparts, demonstrating a consistent trend in this sample.

Discussion:

The observed difference in academic achievement could be attributed to a variety of factors. Female students are often seen as more disciplined and consistent in their academic efforts, which may contribute to their higher performance. This could stem from a stronger focus on academics, as well as a tendency to invest more time and effort into their studies. On the other hand, male students may be more prone to engaging in a wider range of extracurricular activities or distractions that divert attention from their coursework, which could negatively affect their academic outcomes. Furthermore, research suggests that males may display more risk-taking behavior or may struggle with organizational skills, leading to less consistent academic achievement.

These findings highlight the importance of addressing the unique needs of male students in academic settings. Tailored interventions and support systems that encourage male students to focus more on their studies, reduce distractions, and foster better academic habits may help narrow the achievement gap. While the study shows a gender difference, it also emphasizes the importance of recognizing and nurturing the diverse strengths of both male and female students. Providing personalized support that acknowledges these differences could lead to improvements in academic performance across the board.

Hypothesis 5: (Hypothesis Testing)

Table -7 Academic Achievement- Locality of the School Analysis

Locality of the School	N	Mean	% of Mean	SD	SED	't' Value
Rural	500	68.10	68.50	8.03	0.50	1.40 ^{NS}
Urban	500	67.08	67.80	7.92		

Significant at 0.05 level & Table value for 1.96 at 0.05 level.

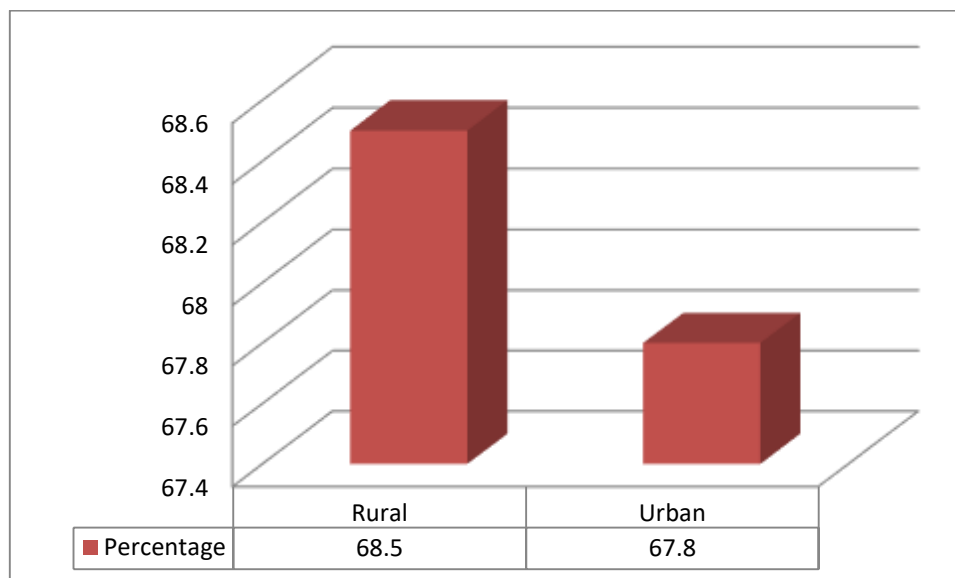


Fig: 5. Academic Achievement- Residential Area

Observations:

The data from this survey includes 1000 students, split evenly between rural and urban secondary school students (500 from each group). Rural students have a mean academic achievement score of 68.10 with a standard deviation of 8.03, while urban students have a mean score of 67.08 with a standard deviation of 7.92. The percentage of the mean for rural students is 68.50, and for urban students, it is 67.08. The Standard Error of Difference (S.E.D) is calculated at 0.50, and the calculated 't' value is 1.40. This 't' value does not reach statistical significance at the 0.05 level, implying that the difference in academic achievement between rural and urban students is not substantial.

Interpretation:

From the analysis, it can be inferred that the "Locality of the School" does not significantly impact the academic achievement of secondary school students. The results indicate that there is no statistically significant difference between the academic performances of rural and urban students, as the calculated 't' value of 1.40 is below the critical value required for significance at the 0.05 level. Therefore, it can be concluded that both rural and urban students perform similarly in terms of academic achievement.

Discussion:

These findings suggest that the academic performance of rural students is on par with that of their urban peers. Historically, rural students were thought to face significant disadvantages in education due to limited resources, such as inadequate infrastructure, lack of access to technology, and fewer educational support systems. However, recent advancements in rural education have helped reduce these gaps. Many rural schools now have access to similar facilities as urban schools, including modern classrooms, internet connectivity, libraries, and other essential resources.

Government initiatives aimed at improving educational infrastructure in rural areas, the expansion of online learning platforms, and better access to educational materials have all played a pivotal role in enhancing the quality of education in these regions. These improvements have contributed to a more equitable educational environment, where students from both rural and urban backgrounds have comparable opportunities for success.

This study challenges the long-standing assumption that urban students have a significant academic advantage over their rural counterparts. It highlights the effectiveness of targeted investments in rural education and the importance of continuing these efforts to ensure that rural students maintain equal opportunities for academic achievement. In conclusion, the results emphasize that academic performance is increasingly determined by factors such as resources, teaching quality, and student engagement, rather than the geographical location of the school.

Hypothesis 6: (Hypothesis Testing)

Table -8 Academic Achievement– Type of family Analysis

Type of family	Sample size	Mean	% of mean	SD	SED	't' Value
Joint	280	70.24	70.24	8.01	0.55	3.92*
Nuclear	720	68.08	68.08	8.03		

Significant at 0.05 level&Table value 1.96.

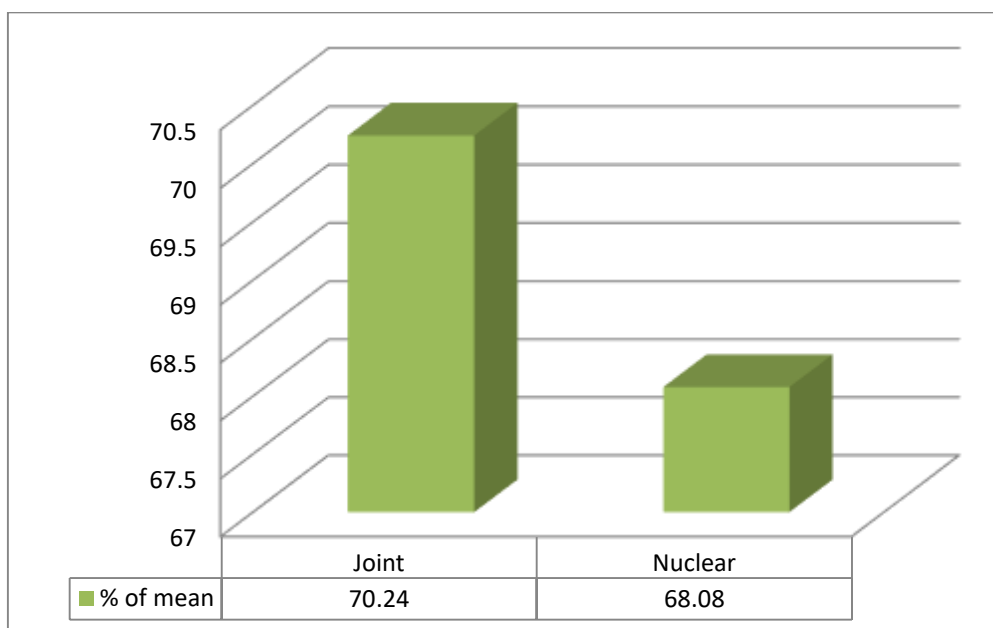


Fig: - 6: % of Mean values from type of family in Academic Achievement

Observation

From the data in Table 4.27, we observe that the total number of pupils is 1,000, with 280 students from joint families and 720 students from nuclear families. The standard deviation (S.D) for the entire sample is 8.01, while the mean academic achievement percentage is 70.24. For the students from nuclear families, the mean value is 68.08, and the standard deviation is 8.03. The standard error of the difference (SED) is 3.23, and the t-value is 3.92, which is significant at the 0.05 level.

Interpretation

Based on the data from Table 4.18, the calculated t-value of 3.92 exceeds the critical table value of 1.96 at the 0.05 significance level. This indicates that the result is statistically significant, leading us to reject the null hypothesis concerning the "Type of family" variable. Therefore, the family type significantly affects the academic achievement of secondary school students. The analysis suggests

that students from joint families tend to perform better academically than those from nuclear families.

Discussion

The findings indicate that secondary school students from joint families demonstrate higher academic achievement compared to their counterparts from nuclear families. This result aligns with the study by Kocak, Goksu, and Goktas (2021), which explored various factors influencing academic performance. Through a meta-analysis of studies published up to 2018, the researchers identified significant variables related to socio-demographic, socio-economic, psychological factors, family type, teaching strategies, learning theories, and individual characteristics. These findings support the conclusion that family structure, particularly the presence of extended family support in joint families, plays a vital role in enhancing academic performance. The academic success observed among students from joint families could be attributed to a more collaborative and supportive home environment, which often fosters a stronger emphasis on education.

SECTION – D

In this section, 'the relationship and association between Academic Flow and Academic Achievement of secondary school students were found through coefficient of correlation (r). In the process of analysis of the section, The data collected were subjected to the statistical treatments by finding 'r-value' and discussions for the objectives 4. Hypotheses were tested, and the difference of Means was established by the 'r-value at 0.05 and 0.01 levels and tabulated to table - 9. The interpretation of the results was presented under each table.

Analysis of Correlation (Hypothesis Testing)

Table –9 Correlation between Academic flow and Academic achievement

Variable	N	df	'r' value
Academic flow	500	998	0.28**
Academic achievement	500		

Not significant at 0.05 level & Table value 0.06.

Observation

Based on the data presented in Table 9, the total number of secondary students surveyed is 1000, with an equal distribution of 500 students each from the categories of Academic Flow and Academic Achievement. The degrees of freedom (df) value is 998, and the calculated correlation coefficient ("r" value) is 0.28, which is found to be significant for both Academic Flow and Academic Achievement.

Interpretation

From the analysis of Table 9, it is evident that the calculated "r" value is 0.28, which is less than the critical table value of "r" at a 0.05 significance level. This leads to the rejection of Hypothesis 7. Therefore, it can be concluded that there is a positive correlation between Academic Flow and Academic Achievement among secondary school students.

Discussion

The findings indicate that a positive correlation exists between Academic Flow and Academic Achievement. This implies that students who experience Academic Flow are more likely to exhibit better Academic Achievement. In other words, when students engage fully in their learning process,

it appears to enhance their academic performance, demonstrating the importance of fostering an environment where students can experience this flow state.

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