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A Comparative Study Of The Influence Of School Environment On Multiple Intelligences Among Government And Private Secondary School Students

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Abstract

(The present study examines the impact of the classroom and school environment on enhancing multiple intelligences among secondary level students of Pune district. The study adopts a descriptive survey method and is grounded in Howard Gardner's theory of multiple intelligences, which recognizes diverse intellectual capacities beyond traditional academic abilities. The sample comprised students from one government secondary school and one private secondary school, selected using stratified random sampling to ensure balanced representation. A self-developed questionnaire was used to collect data related to school environment and multiple intelligences. Statistical analysis involved the use of mean, standard deviation, and t-test to examine differences based on gender and type of institution. The findings reveal significant differences in the impact of school environment on multiple intelligences among male and female students, as well as between government and private secondary schools. Female students demonstrated higher responsiveness to school environments across both institutional types, while private schools showed a stronger overall influence on multiple intelligence development. The study concludes that school environment plays a crucial role in shaping students' intellectual growth and that institutional and gender factors significantly influence this process.)

Keywords: Classroom Environment, Multiple Intelligences, Secondary Level Students, School Climate, Gender Differences, Government Schools, Private Schools, Intellectual Development, Learning Environment, Student Engagement, Educational Psychology, Holistic Education

1. Introduction

Education at the secondary level plays a pivotal role in shaping students' intellectual, emotional, and social development. During adolescence, students experience rapid cognitive growth and develop higher-order thinking abilities that influence their academic achievement and overall personality. The classroom environment, as a core component of the school system, acts as a dynamic space where learning interactions occur. It includes physical facilities, teacher behavior, peer relationships, instructional methods, emotional

climate, and opportunities for participation. A positive classroom environment promotes curiosity, confidence, and motivation, thereby supporting the holistic development of students' intellectual capacities.

The concept of intelligence has evolved significantly over time. Traditional views emphasized linguistic and logical abilities as the sole indicators of intelligence. However, Howard Gardner's theory of Multiple Intelligences broadened this perspective by recognizing diverse forms of intelligence such as interpersonal, intrapersonal, spatial, musical, bodily-kinesthetic, and naturalistic intelligences. According to this theory, students possess unique intellectual profiles that can be nurtured through supportive and stimulating environments. Schools that recognize and value these diverse intelligences create inclusive learning spaces where students can explore their strengths beyond academic achievement alone.

The classroom environment plays a crucial role in facilitating the development of multiple intelligences. Factors such as teacher encouragement, availability of learning resources, collaborative activities, freedom of expression, and emotional support significantly influence how students engage with learning experiences. An environment that encourages discussion, creativity, cooperation, and problem-solving enables students to develop varied intellectual abilities. Conversely, rigid, competitive, or emotionally restrictive environments may limit intellectual growth, particularly for students whose strengths lie outside conventional academic domains.

In the Indian educational context, particularly at the secondary level, differences in school environments between government and private institutions are often evident. Variations in infrastructure, teaching practices, student-teacher interaction, and institutional culture may lead to differences in how students' intelligences are nurtured. Pune district, being educationally diverse, provides a meaningful setting to examine these variations. Therefore, the present study seeks to explore the impact of the classroom and school environment on enhancing multiple intelligences among secondary level students of government and private schools in Pune district.

2. Review of Related Literature

Recent educational research strongly corroborates the influence of classroom environment on students' cognitive and intellectual development. Lin et al. (2024) found that supportive teacher–student interactions, peer relationships, and classroom climate significantly improved creative thinking and engagement, especially when aligned with students' thinking styles. Similarly, Smith and Rahman (2023) reported that secondary classrooms emphasizing collaborative learning and emotional support foster higher student motivation and cognitive flexibility, further underscoring that intellectual growth is responsive to environmental conditions beyond academic content alone. These findings affirm that the quality of the learning environment shapes students' cognitive and metacognitive processes.

Studies grounded in the theory of Multiple Intelligences provide further insight into how instructional environments impact diverse intellectual capacities. Ibrahim (2024) demonstrated that multiple intelligence-based activities significantly enhanced secondary students' critical reading and reasoning skills. Murtafiah et al. (2024) found that language proficiency outcomes were strongly associated with students' dominant intelligence profiles, suggesting that environments catering to diverse strengths yield better academic and cognitive performance. In addition, Xu and Lee (2023) reported that secondary learners exposed to tailored instruction aligned with varied intelligence types exhibited improved problem-solving and interpersonal skills compared to those in traditional learning environments.

Other research highlights broader facets of the classroom context and student engagement. Cambay and Paglinawan (2024) showed that positive school climate and effective classroom management strategies significantly increase student involvement and motivation, which are essential precursors to intellectual development. Al-Qahtani (2025) also found that psychologically safe and resource-rich classrooms promote

exploratory learning, autonomy, and higher-order thinking among adolescents, indicating that emotional and material aspects of environment jointly support cognitive growth.

Recent reviews emphasize the integration of environmental design with pedagogy to enhance intellectual outcomes. Suryani et al. (2025) concluded that instruction structured around multiple intelligences improves critical thinking and cognitive flexibility. A 2025 systematic review on smart learning spaces reported that flexible, technology-supported, and inclusive classroom environments significantly boost engagement and intellectual performance. Collectively, these studies validate that well-designed classroom environments are critical for nurturing a broad spectrum of intelligences among secondary level students.

3. Objectives of the Study

1. To study the impact of the school environment on multiple intelligences among students in government and private secondary level schools.

4. Hypothesis of the Study

1. There will be no significant difference found in the impact of the school environment on multiple intelligences between students in government and private secondary level schools.

5. Research Methodology

The present study employed a descriptive survey method, as it is most suitable for studying existing conditions and examining relationships among variables without manipulation. This method enabled the researcher to systematically investigate students' perceptions of the school environment and its influence on the development of multiple intelligences at the secondary level. Since the study aimed to analyze naturally occurring educational settings, the descriptive approach provided a scientific and realistic framework for understanding classroom and school-related factors affecting intellectual development. The study was conducted in Pune district of Maharashtra, which offers a diverse educational landscape comprising both government and private institutions. The population of the study included secondary level students studying in government and private schools within the district. For the purpose of the study, one Government Higher Secondary School and one Private Junior College were purposively selected to represent contrasting institutional environments functioning within the same geographical and administrative context. This selection helped ensure meaningful comparison between the two types of school environments.

A stratified random sampling technique was used to select a representative sample of students from the selected institutions. The sample consisted of male and female students in equal numbers to maintain gender balance. This sampling technique ensured fair representation of students across institutional types and genders, thereby enhancing the validity and reliability of the findings. Such a sampling approach minimized bias and allowed for accurate generalization of results within the defined population. Data were collected using a self-made questionnaire developed in accordance with the objectives of the study and based on dimensions of school environment and multiple intelligences. The tool comprised structured statements measured on a Likert-type scale, enabling quantitative analysis of students' responses. The researcher personally administered the questionnaire to ensure clarity and uniformity. Ethical considerations were followed by obtaining permission from authorities, ensuring voluntary participation, and maintaining confidentiality. The collected data were analyzed using descriptive and inferential statistics such as mean, standard deviation, and t-test.

6. Data and It's Interpretation

Table 1
Study the Impact of the School Environment of Multiple Intelligences
of Male and Female Students of Government Secondary Level School

Sn	Particular	N	Mean	SD	SEM	SED	t-value
1	Male Students	70	12.7986	1.7607	0.212	0.309	9.9312
2	Female Students	70	15.8717	1.8727	0.2255		

degree of freedom = 138
p-value is less than 0.0001
Significant at .05 level

Statistical Interpretation of Table 1

Table 1 presents the statistical comparison of male and female students of government secondary level schools with respect to the impact of the school environment on multiple intelligences. The mean score of male students (Mean = 12.7986, SD = 1.7607) is notably lower than that of female students (Mean = 15.8717, SD = 1.8727). The standard error of mean is 0.212 for male students and 0.2255 for female students, indicating reliable estimation of group means. The standard error of difference (SED = 0.309) is relatively small compared to the mean difference, suggesting consistency in the observed variation. The calculated t-value of 9.9312 with 138 degrees of freedom is highly significant, as the p-value is less than 0.0001. Statistically, this confirms that the difference between the two means is highly significant and not attributable to chance fluctuations.

Graph 1
Bar-Graph of Impact of the School Environment of Multiple Intelligences
of Male and Female Students of Government Secondary Level School

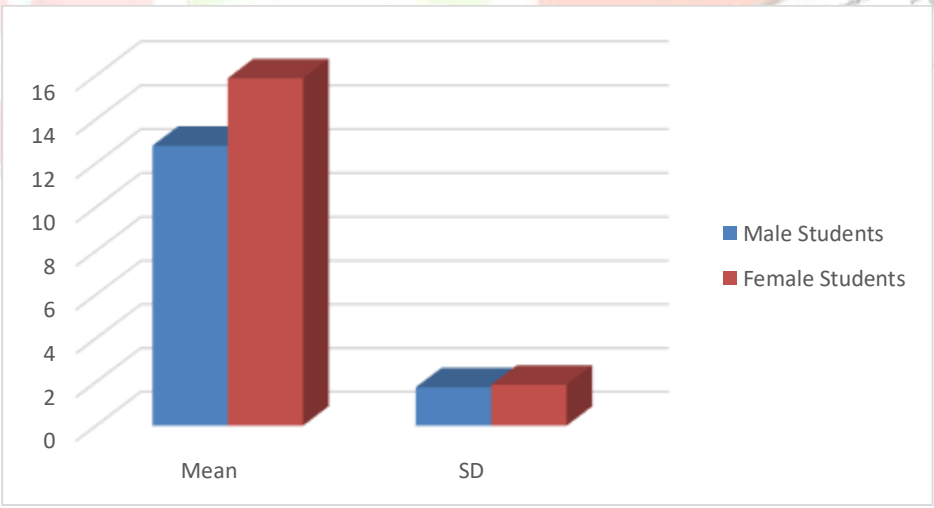


Table 2
Study the Impact of the School Environment of Multiple Intelligences
of Male and Female Students of Private Secondary Level School

Sn	Particular	N	Mean	SD	SEM	SED	t-value
1	Male Students	70	13.5232	1.9125	0.2302	0.313	8.3417
2	Female Students	70	16.1326	1.7590	0.2118		

degree of freedom = 138
p-value is less than 0.0001
Significant at .05 level

Statistical Interpretation of Table 2

Table 2 statistically examines the impact of the school environment on multiple intelligences among male and female students of private secondary level schools. The mean score of male students is 13.5232 with a standard deviation of 1.9125, while female students show a higher mean score of 16.1326 with a standard deviation of 1.7590. The standard error of mean values are low (SEM = 0.2302 for males and 0.2118 for females), indicating precision in mean estimation. The standard error of difference is 0.313, which is small in relation to the difference between the two mean scores. The computed t-value of 8.3417 at 138 degrees of freedom is statistically significant, with a p-value less than 0.0001. This statistical evidence confirms that the difference in mean scores between male and female students is highly significant.

Graph 2
Bar-Graph of Impact of the School Environment of Multiple Intelligences
of Male and Female Students of Private Secondary Level School

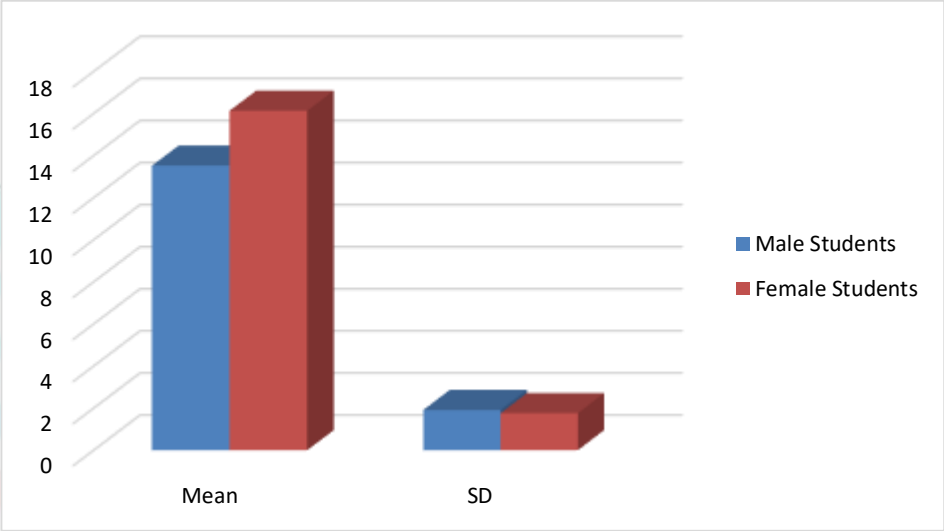


Table 3
Study the Impact of the School Environment of Multiple
Intelligences of Government and Private Secondary Level School

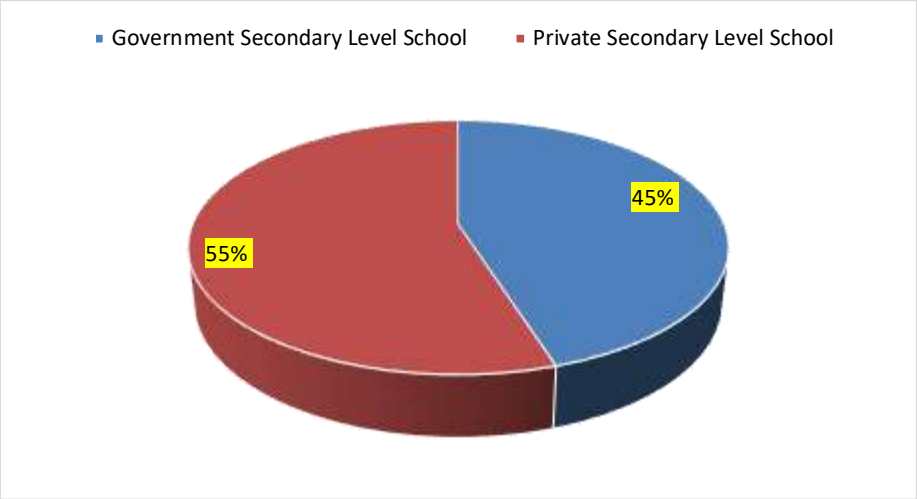
Sn	Particular	N	Mean	SD	SEM	SED	t-value
1	Government Secondary Level School	140	13.1374	1.8805	0.1595	03221	12.9064
2	Private Secondary Level School	140	15.9939	1.8090	0.1534		

degree of freedom = 278
p-value is less than 0.0001
Significant at .05 level

Statistical Interpretation of Table 3

Table 3 presents a statistical comparison between government and private secondary level school students regarding the impact of the school environment on multiple intelligences. The mean score of government school students is 13.1374 with a standard deviation of 1.8805, whereas private school students show a substantially higher mean score of 15.9939 with a standard deviation of 1.8090. The standard error of mean is low for both groups (SEM = 0.1595 for government schools and 0.1534 for private schools), reflecting stable mean estimates. The standard error of difference (SED = 0.3221) is small relative to the observed mean difference. The calculated t-value of 12.9064 with 278 degrees of freedom is extremely high, and the p-value is less than 0.0001, indicating a statistically highly significant difference between the two groups.

Graph 3
Pie-Graph of Impact of the School Environment of Multiple Intelligences
of Students of Government and Private Secondary Level School



7. Final Conclusions

The present study leads to the conclusion that the classroom and overall school environment plays a decisive role in enhancing multiple intelligences among secondary level students. The findings clearly indicate that intellectual development is not merely an outcome of individual ability but is strongly influenced by environmental factors such as classroom climate, teacher–student interaction, institutional support, and learning opportunities. A positive and structured school environment contributes significantly to the balanced development of diverse intelligences, enabling students to engage meaningfully with learning experiences beyond conventional academic measures. The study further concludes that gender differences exist in the way students respond to the school environment in both government and private secondary schools. Female students consistently demonstrate higher levels of multiple intelligence development in response to the prevailing school environment. This suggests that the instructional practices, emotional climate, and interaction patterns commonly present in secondary schools may be more aligned with the learning preferences and engagement styles of female students. The school environment, therefore, does not exert a uniform influence but interacts with learner characteristics to shape intellectual outcomes. Finally, the research establishes that private secondary schools exhibit a significantly stronger impact of the school environment on the enhancement of multiple intelligences when compared to government secondary schools. Differences in institutional resources, academic culture, exposure to enrichment activities, and emphasis on holistic development contribute to this variation. Consequently, the hypothesis stating that there is no significant difference between government and private schools is rejected. The study conclusively affirms that both institutional context and gender play a critical role in determining how effectively the school environment enhances multiple intelligences among secondary level students.

8. Suggestions

1. Schools should consciously design classroom environments that recognize and support diverse learning styles so that students with different intellectual strengths receive equal opportunities for growth and engagement.
2. Government secondary schools should strengthen activity-based, experiential, and learner-centered teaching practices to enhance the development of multiple intelligences, especially among students who benefit from hands-on and interactive learning experiences.
3. Teachers at the secondary level should be provided with regular professional development programs focusing on multiple intelligence theory and classroom strategies to address varied intellectual abilities effectively.

4. Equal encouragement should be given to both male and female students to participate in academic, co-curricular, and creative activities so that intellectual development remains balanced and inclusive.
5. Schools should promote a positive emotional and social climate that encourages cooperation, communication, and self-expression, which are essential for the development of interpersonal and intrapersonal intelligences.
6. Institutional policies should emphasize holistic education by integrating academics with cultural, creative, and skill-oriented activities that foster overall intellectual and personality development among students.

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