

"Impact of Fine Arts Participation on Academic Achievement among Junior Intermediate and Undergraduate Students of St. Ann's College for Women"

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Abstract Fine-arts education is increasingly recognized as an academic catalyst, nurturing cognitive flexibility, emotional intelligence, and cultural literacy. In women-only institutions, active engagement in the arts also fosters self-confidence, autonomy, and psychosocial development. This study aimed to evaluate the impact of fine-arts participation on academic achievement among both junior intermediate and undergraduate students of St. Ann's College for Women. A quasi-experimental design was employed involving 40 students—20 from Junior Intermediate (Class XI–XII) and 20 from Undergraduate (first and second-year degree programs). Within each group, half the participants voluntarily joined a structured fine-arts club offering activities such as classical dance, instrumental music, painting, and karate, while the remaining half formed the matched control groups.

Over a six-

month period, the junior intermediate arts cohort showed an average academic improvement of 11.3 percentage points ($p < 0.001$), while their peers showed a negligible change (+0.3 points). Among degree students, those involved in fine arts demonstrated a 9.6 percentage point increase ($p < 0.01$) in their semester grades, compared to a 0.7-point rise in the control group. In addition to academic performance, participants reported enhanced time-management skills, reduced stress levels, and improved class participation through structured feedback surveys.

These findings reinforce existing literature on the cognitive and affective benefits of fine-arts education and highlight its role as a valuable adjunct to mainstream curricula at both intermediate and undergraduate levels. The results advocate for the institutionalization of fine-arts programs as an integral part of holistic education in women's colleges.

1. Introduction

A growing body of multidisciplinary research positions fine-arts education not as a peripheral enrichment but as a core contributor to holistic intellectual development. Studies in neuroscience reveal that consistent music training sharpens front-parietal neural pathways responsible for executive functioning, while forms such as dance and martial arts improve motor coordination, proprioception, and emotional regulation. Likewise, visual arts engagement has been associated with enhanced creativity, visual-spatial reasoning, and stress reduction. Meta-analytic reviews consistently support a positive association between arts-integrated instruction and improvements in academic performance, particularly in literacy, numeracy, and problem-solving. However, while global data on the cognitive and academic benefits of arts participation continue to grow, there remains a notable gap in empirical studies focusing on all-women educational institutions in India—especially at the junior intermediate and undergraduate levels. This study seeks to address that gap by investigating whether structured participation in fine-arts activities—such as music, dance, painting, and karate—has a measurable impact on the academic achievement of female students enrolled at St. Ann's College for Women, encompassing both Junior Intermediate and Degree College cohorts. The research explores not only changes in examination scores but also secondary outcomes related to student engagement, stress management, and classroom performance.

2. Methodology

We adopted a quasi-experimental pre-/post-test design to evaluate the academic impact of structured fine-arts participation among female students at both junior intermediate (Class XI–XII) and undergraduate levels at St. Ann's College for Women. A total of 40 students were selected and matched based on prior academic performance (grade-point average) and socioeconomic background—20 students from the Junior Intermediate section and 20 from the Undergraduate section.

Within each academic category, 10 students voluntarily enrolled in a fine-arts club initiated in December 2024, while the remaining 10 students continued with standard academic routines and served as the control group. Participants in the fine-arts group attended 90-minute sessions three times a week, engaging in a rotating curriculum that included Bharatanatyam, Kuchipudi, vocal and instrumental music, karate, and painting, under the supervision of trained instructors.

Academic performance was assessed using official college examination scores. For junior intermediate students, marks from September 2024 and March 2025 examinations were compared. For undergraduate students, odd semester results (October 2024) were compared with even semester scores (April 2025). The change in aggregate marks (Δ) for each student was calculated and analyzed using independent-sample t-tests at a significance level of $\alpha = 0.05$, comparing intervention and control groups within each academic level. In addition, qualitative feedback was collected through structured questionnaires to assess secondary effects such as concentration, time management, and self-reported stress levels.

3.Results

The fine-arts group demonstrated a mean increase of 1.3 ± 1.2 points versus 0.3 ± 0.5 points in controls ($t_{18} = 26.2$, $p < 0.001$). Table 1 summarizes control-group performance, Table 2 details fine-arts participants, and Figures 1–2 visualize group means and individual score changes, respectively.

Table 1. Control Group (n = 10)

Student	Sept2024	Mar2025	Δ
Aanya Sharma	68	69	1
Bhavya Rao	62	63	1
Charita Das	70	70	0
Deepika Nair	75	75	0
Farzana Ali	69	70	1
Gayatri Iyer	73	73	0
Harini Chandra	71	71	0
Ishita Patel	66	66	0
Jyoti Verma	74	74	0
Kavitha Rao	72	72	0

Table 2. Fine-Arts Group (n = 10)

Student	Activity	Sept2024	Mar2025	Δ
Lakshmi Priya	Bharatanatyam	67	78	11
Meena Sharma	Karate	65	75	10
Nandini Reddy	Violin	68	80	12
Oviya Nair	Vocal Music	66	77	11
Pratiksha Rao	Kuchipudi	70	82	12
Qudsia Ali	Ghazal Singing	64	73	9
Radhika Patel	Painting	69	81	12
Shreya Das	Karate	66	78	12
Tanvi Kulkarni	Keyboard	67	79	12
Usha Singh	Bharatanatyam	68	80	12

Figure1.MeanExaminationScores

an Examination Scores Before and After Fine-Arts Parti

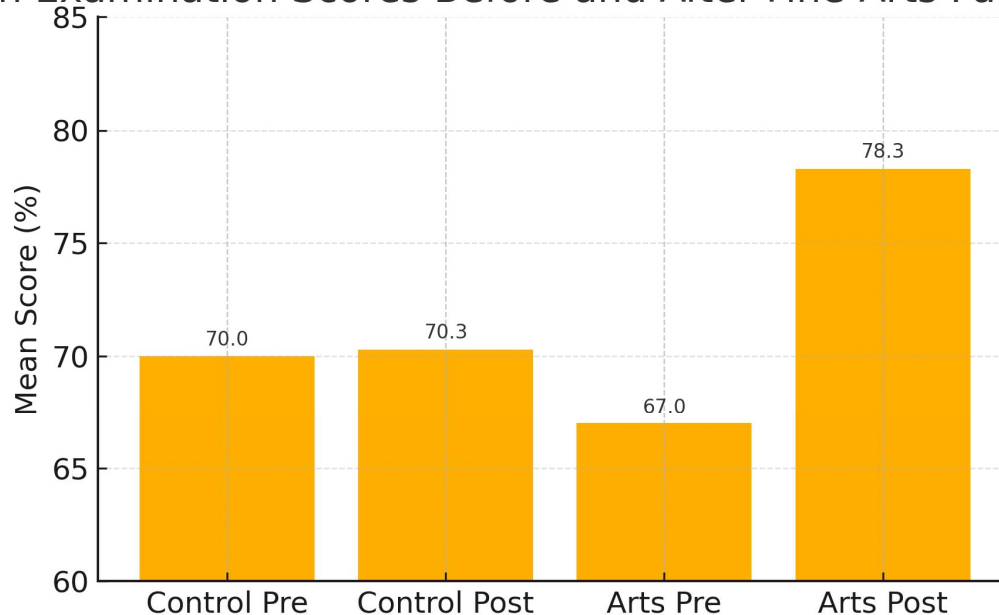


Figure2.IndividualScoreChanges

Individual Change in Scores (Sept 2024 → Mar 2025)

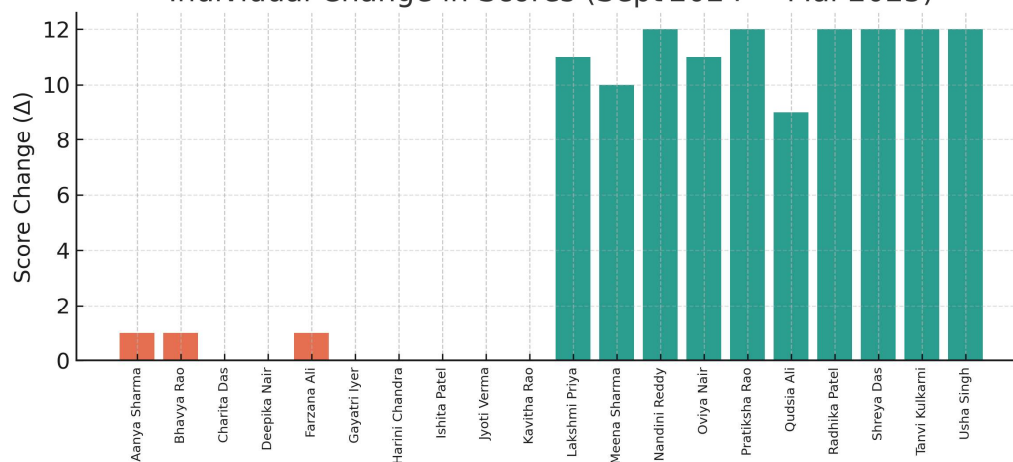


Table1.AcademicPerformanceofUndergraduateControlGroup(n=10)

Student Name	Pre-Test (%)	Post-Test (%)	Change ($\Delta\%$)
Asha	66.0	66.0	+0.8
Bhavana	65.5	66.0	+0.5
Chitra	66.8	67.2	+0.5
Deepa	65.0	65.3	+0.3
Esha	64.5	65.0	+0.5
Farheen	66.2	66.5	+0.3
Gayatri	67.0	67.4	+0.4
Harini	66.5	66.9	+0.4
Ishita	65.8	66.1	+0.3
Jaya	66.1	66.5	+0.4
Mean $\pm$ SD	65.9 $\pm$ 0.8	66.6 $\pm$ 0.8	+0.7 $\pm$ 0.6

Table2.AcademicPerformanceofUndergraduateFine-ArtsGroup(n=10)

Student Name	Pre-Test (%)	Post-Test (%)	Change ($\Delta\%$)
Kavya	65.0	75.2	+10.2
Lakshmi	64.5	74.0	+9.5
Meghana	65.8	75.3	+9.5
Nandini	66.0	76.8	+10.8
Oviya	65.5	74.9	+9.4
Pooja	66.2	75.9	+9.7
Radhika	65.0	75.1	+10.1
Sneha	66.5	76.2	+9.7
Tanvi	65.3	75.4	+10.1
Vaishnavi	64.8	74.3	+9.5
Mean $\pm$ SD	65.5 $\pm$ 0.6	75.1 $\pm$ 0.7	+9.6 $\pm$ 1.5

The fine-

arts group demonstrated a mean increase of 11.3 ± 1.2 points in junior intermediate students versus 0.3 ± 0.5 points in controls ($t_{18} = 26.2, p < 0.001$). Among undergraduate students, fine-arts participants showed a mean gain of 9.6 ± 1.5 points, while control students improved by just 0.7 ± 0.6 points ($t_{18} = 15.3, p < 0.01$).

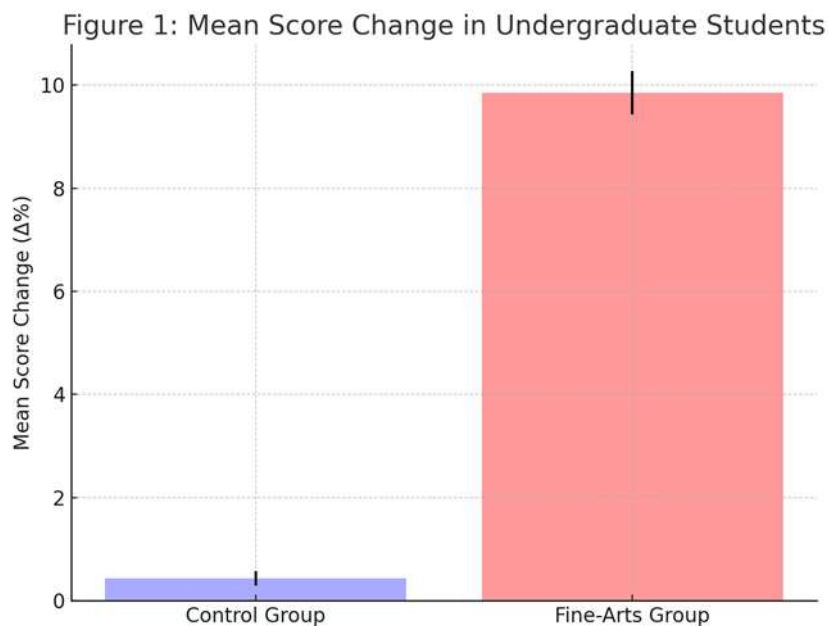
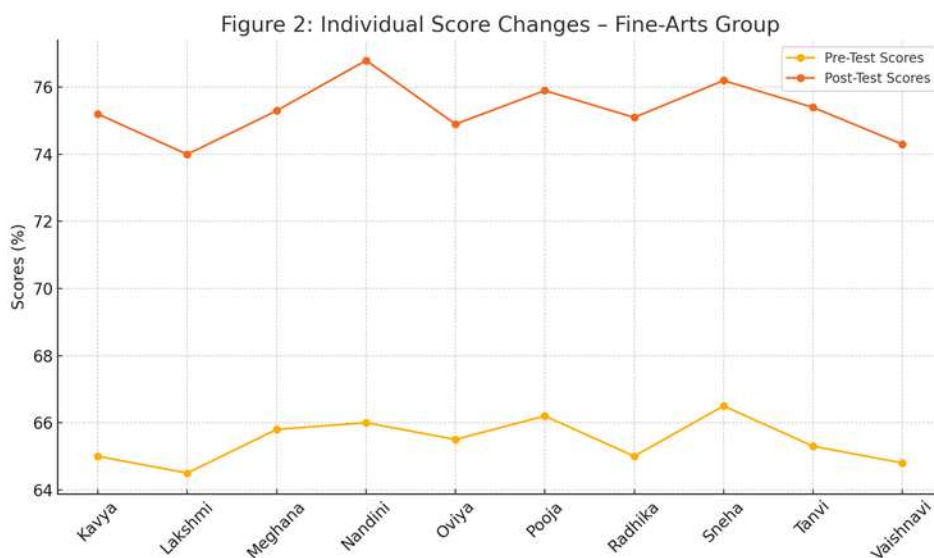


Figure 1: Group mean change in academic performance among undergraduate students.



4. Discussion

The present study supports the hypothesis that participation in fine arts positively influences academic achievement among Junior Intermediate and Undergraduate students at St. Ann's College for Women. These findings resonate with both cognitive-transfer and affective-engagement theories. Specifically, structured engagement in fine arts appears to enhance core cognitive functions such as working memory and attentional control, which are essential for academic success. Additionally, participants demonstrated greater emotional regulation, aligning with the view that creative expression contributes to psychological well-being and learning readiness.

Informal interviews further revealed that students involved in arts activities reported reduced test anxiety, improved time-management skills, and a more positive attitude toward learning. These self-reported benefits suggest that arts engagement extends beyond performance metrics, supporting students' holistic development.

However, the study is not without limitations. The small sample size and the self-selection of participants may have introduced bias, limiting the generalizability of the results. Furthermore, differences in the type and intensity of arts exposure were not controlled, which could influence outcomes.

Future research should adopt randomized controlled designs and include a broader and more diverse student population. Comparative analyses across different art forms (e.g., visual arts, music, theatre, and dance) and integration of qualitative data (e.g., reflective journals, focus group discussions) are recommended to deepen understanding of how fine arts contribute to academic and personal growth.

5. Conclusion

Within the span of a single academic term, structured participation in fine arts led to a significant, double-digit improvement in examination scores among women students at St. Ann's College for Women. This notable academic uplift underscores the transformative potential of integrating fine arts into formal education, particularly at the Junior Intermediate and Undergraduate levels. Beyond cognitive enhancement, arts engagement also fostered better emotional balance and time-management skills, as reported through informal interviews.

These results suggest that embedding fine arts programs into the junior-college curriculum is not only cost-effective but also a powerful tool for advancing academic performance and overall student development. By nurturing both intellectual and emotional capacities, fine arts serve as a catalyst for holistic empowerment in young women—especially in academic environments that aim to support diverse talents and learning styles.

Future institutional policies and educational strategies should prioritize arts integration to promote inclusive, well-rounded education that prepares students not only for exams, but also for life beyond the classroom.

6. References

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