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IMPACT OF CO CURRICULAR ACTIVITIES ON PRIMARY LEVEL STUDENTS OF NORTH 24 PARGANAS

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Abstract

This study aims to investigate the impact of co-curricular activities on primary-level students in North 24 Parganas, focusing on three key areas: academic performance, social skills development, and enhancement of creativity and critical thinking. Co-curricular activities such as sports, music, art, drama, and cultural events are widely recognized for their potential to complement academic learning by fostering holistic student development. The study assesses how participation in these activities influences students' academic achievements and contributes to the development of essential social skills like teamwork, communication, and leadership. Additionally, it explores the role of co-curricular activities in stimulating creativity and enhancing critical thinking abilities, which are crucial for overall cognitive development. Data has been gathered through surveys, interviews, and observations of primary school students, providing insights into the significance of these activities in shaping the educational experience. The findings will contribute to understanding the broader benefits of co-curricular engagement, emphasizing its role in academic success, social competency, and intellectual growth in it hasng learners.

Keywords: Co-Curricular Activities, Primary Level Students, Academic Performance, Social Skills, Creativity & Critical Thinking.

1. Introduction

A wide range of extracurricular activities that go beyond the formal curriculum are referred to as co-curricular activities. Students can learn skills that are crucial to their overall development through these activities like sports, music, drama, art, debates, and cultural programs. Co-curricular activities have a significant impact on students'

personalities, creativity, and academic performance in the context of primary education. These activities give kids a fun way to learn social skills, critical thinking, and problem-solving skills outside of the classroom. The purpose of this study is to evaluate the effects of extracurricular activities on primary school students in North 24 Parganas, with a particular focus on academic achievement, the development of social skills, and the development of creativity and critical thinking. The fact that this study examines the broader impact of extracurricular engagement on students who are in a formative stage of their educational journey makes it particularly significant. Parents, policymakers, and educators can all gain a better understanding of the benefits of incorporating extracurricular activities into the primary school curriculum to achieve a more comprehensive education.

2. Background of the Study

The significance of extracurricular activities to students' overall growth has received widespread attention in recent years. These activities provide a platform for developing talents and interests outside of the classroom. While academic learning is crucial for building foundational knowledge, co-curricular activities help in enhancing skills that are often not addressed in the formal classroom setting, such as teamwork, leadership, creativity, and social interaction. A child's cognitive, social, and emotional development is shaped significantly during the primary education phase. Like many other regions, schools in North 24 Parganas have been incorporating a variety of extracurricular activities into the curriculum. These activities are intended to provide a balanced education, fostering both intellectual and non-intellectual capabilities. However, little is known about how these activities affect academic performance and other developmental areas, especially in the local setting.

3. Review of Related Literature

Lee and Patel (2019), who note that activities like coding clubs, science fairs, and robotics competitions encourage students to approach problems logically and creatively, also highlight the role of co-curricular activities in enhancing creativity. These abilities are adaptable and play a significant role in academic success.

According to Brown and Green (2019), children can learn empathy, leadership, and teamwork in real-world situations through social interactions in co-curricular settings. Students, for instance, engage in shared objectives, develop teamwork, and practice constructive communication in sports. In primary schools, where peer relationships play a significant role in emotional development, these social dynamics are especially beneficial.

According to Graham and White (2018), students can grow their imagination and expand their horizons through creative activities like drama and creative writing. Students develop their critical thinking skills by investigating various points of view and engaging in creative activities. These skills are essential in academic settings, particularly for subjects that require analysis and reasoning. Students who regularly participate in sports, cultural events, or clubs,

according to Singh and Kaur (2018), tend to have better organizational and time management skills, which translate into improved academic outcomes. Discipline, concentration, and perseverance, which are necessary for academic success, are fostered through these activities. Ramirez and Mendoza (2017) also say that students tend to get better grades in core subjects when they participate in structured after-school activities, especially those that involve intellectual challenges like debate clubs.

4. Objective of Study

1. To Assess the Impact of Co-Curricular Activities on the Academic Performance of Primary Level Students
2. To Examine the Development of Social Skills Through Co-Curricular Activities
3. To Explore the Role of Co-Curricular Activities in Enhancing Creativity and Critical Thinking

5. Hypotheses of the Study

H₀1: There is no significant impact of co-curricular activities on the academic performance of primary level students in North 24 Parganas.

H₀2: Co-curricular activities do not significantly influence the development of social skills in primary level students.

H₀3: Participation in co-curricular activities does not significantly enhance creativity and critical thinking skills in primary level students.

6. Research Methodology

The research methodology for this study on the **Impact of Co-Curricular Activities on Primary Level Students in North 24 Parganas** will adopt a **quantitative research design** to test the hypotheses and provide empirical evidence on the influence of co-curricular activities on students' academic performance, social skills development, and enhancement of creativity and critical thinking.

7. Research Design

A **descriptive-correlation** research design was employed to understand the relationship between co-curricular activities and the academic, social, and cognitive development of primary level students. The design will help establish patterns and assess the significance of the impact of co-curricular activities on various developmental aspects.

8. Population and Sample

The target population for this study includes primary school students (Grades I-V) in North 24 Parganas. The study was also including teachers, school administrators, and parents to gain a broader perspective on the impact of these activities.

- **Sampling Technique:** A **stratified random sampling** technique was used to select schools from urban and rural areas in North 24 Parganas, ensuring diversity. A representative sample of students was selected from these schools to ensure that the study encompasses different socio-economic backgrounds and educational settings.
- **Sample Size:** The sample size will consist of 200 primary-level students, with 20 students selected from 10 schools in the region (a mix of urban and rural schools). Additionally, 20 teachers and 10 school administrators was included for interviews to provide qualitative insights.

9. Data Collection Tools

- **Survey/Questionnaire:** A structured questionnaire was developed to gather quantitative data on the academic performance of students, their participation in co-curricular activities, and their perceived social skills, creativity, and critical thinking abilities. The questionnaire will include Likert scale items (1-5) to rate the impact of various co-curricular activities on these variables.
 - **Academic Performance Section:** Students was asked to report their grades in key subjects, along with their perceived improvements after engaging in co-curricular activities.
 - **Social Skills Development Section:** Questions will assess skills such as communication, teamwork, and leadership.
 - **Creativity and Critical Thinking Section:** Students was asked to rate their perceived improvement in creativity and problem-solving after participating in different activities.
- **Interviews:** Semi-structured interviews was conducted with teachers, school administrators, and parents to gain qualitative insights into how co-curricular activities influence academic performance, social skills, and cognitive development.
- **Observation:** Researchers will observe the students during their participation in co-curricular activities, noting behavioral changes, engagement levels, and interactions with peers.

10. Variables

- **Independent Variable:** Co-curricular activities (sports, arts, music, drama, cultural events, etc.)

- **Dependent Variables:**

- Academic performance (measured by grades and subject-specific improvement)
- Social skills (measured through self-reports and teacher observations)
- Creativity and critical thinking (measured through self-reports, teacher assessments, and observation of student engagement)

11. Data Analysis

- **Quantitative Data Analysis:**

- **Descriptive statistics** (mean, median, mode) was used to summarize the demographic information of the sample, as well as to describe the frequency of participation in co-curricular activities.
- **Correlation analysis** (Pearson's correlation) was used to measure the strength and direction of the relationship between co-curricular activities and academic performance, social skills, and creativity/critical thinking.
- **Regression analysis** was conducted to determine the extent to which co-curricular activities predict improvements in academic performance, social skills, and creativity/critical thinking.

12. Limitations

- The study is limited to schools in North 24 Parganas, and the results may not be generalizable to other regions.
- Self-report data might be subject to biases, such as social desirability or inaccurate recollection.
- The cross-sectional nature of the study means it will provide a snapshot at one point in time, rather than tracking changes over an extended period.

13. Analysis and Interpretation

Table 1: score of academic, social and creativity & critical thinking in %

Name of Blocks	Academic Performance (Primary level in %)	Social Skills (Primary level in %)	Creativity and Critical Thinking (Primary level in %)
Bagdah	21.32	13.6	9.32
Bongaon	32.21	14.25	8.32
Giaghata	18.21	9.2	7.21
Minakhan	13.21	8.21	5.23
Hingalgang	12.36	7.21	3.21

Table2: Descriptive Statistics

Academic Performance (Primary level in %)	Score	Social Skills (Primary level in %)	Score	Creativity and Critical Thinking (Primary level in %)	Score
Mean	19.462	Mean	10.494	Mean	6.658
Standard Error	3.585088	Standard Error	1.43928	Standard Error	1.097294
Median	18.21	Median	9.2	Median	7.21
Mode	#N/A	Mode	#N/A	Mode	#N/A
Standard Deviation	8.0165	Standard Deviation	3.218327	Standard Deviation	2.453624
Sample Variance	64.26427	Sample Variance	10.35763	Sample Variance	6.02027
Kurtosis	1.230325	Kurtosis	-2.89169	Kurtosis	-0.98369
Skewness	1.191797	Skewness	0.418162	Skewness	-0.57209
Range	19.85	Range	7.04	Range	6.11
Minimum	12.36	Minimum	7.21	Minimum	3.21
Maximum	32.21	Maximum	14.25	Maximum	9.32
Sum	97.31	Sum	52.47	Sum	33.29
Count	5	Count	5	Count	5

The mean for academic performance is 19.462 percent, followed by social skills (10.494 percent) and creativity and critical thinking (6.658 percent). The standard deviation and range of academic performance are larger than those of social skills, creativity, and critical thinking. The mean and standard deviation for creativity and critical thinking are the lowest, and the distribution is more concentrated. Skewness shows that both Academic Performance and Social Skills have positive skew (tail on the right), while Creativity and Critical Thinking has negative skew (tail on the left). In conclusion, the data on academic performance are more dispersed and have a higher mean, whereas the data on social skills, creativity, and critical thinking have lower means and are less variable. The skewness and kurtosis of the distributions for critical thinking, social skills, and creativity are also slightly different.

Table3: ANOVA single factor Analysis

ANOVA: Single Factor				
SUMMARY				
Groups	Count	Sum	Average	Variance
Academic Performance (Primary level in %)	5	97.31	19.462	64.26427
Social Skills (Primary level in %)	5	52.47	10.494	10.35763
Creativity and Critical Thinking (Primary level in %)	5	33.29	6.658	6.02027

Table 4: ANOVA group factor Analysis

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	431.8039	2	215.9019	8.03185	0.006112	3.885294
Within Groups	322.5687	12	26.88072			
Total	754.3726	14				

Sum of Squares (SS):

- **Between Groups (431.8039):** This measures the variation between the means of the groups being compared.
- **Within Groups (322.5687):** This measures the variation within each group.
- **Total (754.3726):** This is the total variation in the data, combining both the between-group and within-group variations.

Degrees of Freedom (df):

- **Between Groups (2):** This corresponds to the number of groups minus one ($k-1$).
- **Within Groups (12):** This corresponds to the total number of observations minus the number of groups ($N-k$).
- **Total (14):** This is the total number of observations minus one ($N-1$).

Mean Square (MS):

- **MS Between Groups:** This is the **Sum of Squares Between Groups (SS)** divided by its degrees of freedom: $MS = \frac{SS}{df} = \frac{431.8039}{2} = 215.9019$
- **MS Within Groups:** This is the **Sum of Squares Within Groups (SS)** divided by its degrees of freedom: $MS = \frac{SS}{df} = \frac{322.5687}{12} = 26.88072$

F-Statistic:

- The F-statistic is the ratio of the variance between groups to the variance within groups: $F = \frac{MS_{\text{between}}}{MS_{\text{within}}} = \frac{215.9019}{26.88072} = 8.03185$

$$\frac{215.9019}{26.88072} = 8.03185 \quad F = \frac{MS \text{ within}}{MS \text{ between}} = \frac{215.9019}{26.88072} = 8.03185$$

- A larger F-statistic indicates a larger difference between the group means compared to the variance within the groups.

P-value:

- The **p-value** is 0.006112. This is the probability of obtaining an F-statistic at least as extreme as the one observed, under the null hypothesis that all group means are equal.
- Since the p-value (0.006112) is less than the common significance level of 0.05, it has would **reject the null hypothesis**. This suggests that there is a significant difference between at least some of the group means.

F Critical Value (F crit):

- The **F crit** value is 3.885294, which is the threshold for the F-statistic at a 0.05 significance level.
- Since the calculated F-statistic (8.03185) is greater than the critical value (3.885294), this confirms that it has should reject the null hypothesis.

The results of the **ANOVA test** suggest that there is a **significant difference between the means of the groups** being compared, as the p-value (0.006112) is less than 0.05 and the F-statistic (8.03185) exceeds the critical value (3.885294). This means that not all group means are equal. Determine which specific groups differ from each other, it has would need to perform **post-hoc tests** (e.g., Turkey's HSD) to identify the pairs of groups with significant differences.

Table 5: Analysis of t – test paired two sample for means(social skills and Academic performance)

t-Test: Paired Two Sample for Means		
	<i>Social Skills (Primary level in %)</i>	<i>Academic Performance (Primary level in %)</i>
Mean	10.494	19.462
Variance	10.35763	64.26427
Observations	5	5
Pearson Correlation	0.899962	
Hypothesized Mean Difference	0	
df	4	
t Stat	-3.77726	
P(T<=t) one-tail	0.009741	
t Critical one-tail	2.131847	
P(T<=t) two-tail	0.019482	
t Critical two-tail	2.776445	

t-Test Statistics:

- **t Stat:** -3.77726
 - This is the computed t-value for the test. It suggests that there is a significant difference between the two means, as the value is far enough from 0.
- **P (T <= t) One-tail:** 0.009741
 - The p-value for a one-tailed test. Since it is less than 0.05, it has would reject the null hypothesis (the hypothesis that the two means are equal) in favor of the alternative hypothesis, suggesting a significant difference in one direction.
- **t Critical One-tail:** 2.131847
 - The critical value for a one-tailed test at a significance level of 0.05. Since the computed t-value is -3.77726, which is smaller (more extreme) than the critical value, this confirms the rejection of the null hypothesis for a one-tailed test.
- **P (T <= t) Two-tail:** 0.019482
 - The p-value for a two-tailed test. Since it is less than 0.05, it has would reject the null hypothesis in favor of the alternative hypothesis, suggesting a significant difference in the means of the two groups.
- **t Critical Two-tail:** 2.776445
 - The critical value for a two-tailed test at a significance level of 0.05. Since the computed t-value is -3.77726, which is more extreme than the critical value, this also supports rejecting the null hypothesis for a two-tailed test?

Interpretation:

Since the p-value is less than the significance level of 0.05, it has rejected the null hypothesis, which suggests that the means of social skills and academic performance are significantly different. The negative t-statistic (-3.77726) and the p-value for both the one-tailed (0.009741) and two-tailed (0.019482) tests indicate that there is a significant difference between social skills and academic performance at the primary level.

The negative t-value indicates that, on average, social skills are lower than academic performance in the sample.

Table 6: Analysis of t – test paired two sample for means (Creativity & critical thinking and Social Skills)

t-Test: Paired Two Sample for Means		
	<i>Creativity and Critical Thinking (Primary level in %)</i>	<i>Social Skills (Primary level in %)</i>
Mean	6.658	10.494
Variance	6.02027	10.35763
Observations	5	5

Pearson Correlation	0.898528	
Hypothesized Mean Difference	0	
df	4	
t Stat	-5.79971	
P(T<=t) one-tail	0.002198	
t Critical one-tail	2.131847	
P(T<=t) two-tail	0.004395	
t Critical two-tail	2.776445	

t- Test Statistics:

- ❖ t Stat: -5.79971 The calculated t-value is 5.79971. It is a large negative number, suggesting a strong difference between the two means.
- ❖ The p-value for a one-tailed test is 0.002198 (P(T = t) One-tail). A one-tailed test would reject the null hypothesis and draw the conclusion that there is a significant difference between the means in the expected direction if this was less than 0.05.
- ❖ t Critical One-tail: 2.131847 The significance level for a one-tailed test at 0.05. The rejection of the null hypothesis for a one-tailed test is confirmed by the computed t-value, which is -5.79971, which is significantly smaller (more extreme) than the critical value.
- ❖ The p-value for a two-tailed test is 0.004395 (P(T = t) Two-tail). Since this is also less than 0.05, it has would reject the null hypothesis for a two-tailed test, suggesting a significant difference between the two variables.
- ❖ t Critical Two-tail: 2.776445 The significance level for a two-tailed test at 0.05. Since the computed t-value (-5.79971) is more extreme than the critical value, this supports rejecting the null hypothesis for a two-tailed test as well.

Interpretation:

- The negative t-statistic (-5.79971) and the p-value for both the one-tailed (0.002198) and two-tailed (0.004395) tests indicate that there is a **significant difference** between **Creativity and Critical Thinking** and **Social Skills** at the Primary level.
- The negative t-value indicates that **Creativity and Critical Thinking** is lower on average than **Social Skills** for this sample. Since the p-values are both less than 0.05, it has can **reject the null hypothesis** and conclude that there is a significant difference between **Creativity and Critical Thinking** and **Social Skills**. Additionally, the negative t-statistic suggests that **Creativity and Critical Thinking** tends to be lower than **Social Skills** in the sample.

14. Major Finding

- ❖ Primary-level students perform better academically when they participate in co-curricular activities. Studies have consistently demonstrated that students who participate in extracurricular activities tend to have higher academic engagement and higher grades.
- ❖ Academic clubs, sports, music, and drama all aid in the development of discipline, time management, and focus, all of which directly contribute to higher academic achievement. Primary students' social skills are significantly influenced by co-curricular activities.
- ❖ Students develop essential social skills like communication, teamwork, leadership, and conflict resolution through these activities, particularly those that involve group participation (such as sports, drama, or group projects).
- ❖ Co-curricular activities significantly influence the development of social skills in primary students. These activities, especially those involving group participation (like sports, drama, or group projects), help students develop essential social skills, including communication, teamwork, leadership, and conflict resolution.

15. Conclusion

The ANOVA test suggests that the groups are significantly different, particularly in terms of how co-curricular activities affect academic performance, social skills, creativity, and critical thinking. According to the statistical findings, co-curricular activities appear to have a significant impact on academic performance, social skills, and creativity and critical thinking. Co-curricular activities may have different effects on students' development in academic performance, social skills, and creativity because of the significant differences between the three groups. Co-curricular activities that have the greatest impact on academic performance, social skills, and creativity could be the subject of future research. To apply these results to a wider range of primary school students, a larger sample size would be beneficial. According to the findings of this study, extracurricular activities have a significant impact on students' growth in terms of their social skills, creativity, and critical thinking abilities. The results are statistically significant, highlighting the importance of incorporating such activities into the primary education curriculum.

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