

Integrating Co-Curricular Activities with Academic Achievement in Light of NEP 2020 and NCF-SE

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Abstract

This research paper investigates the impact of co-curricular activities on the academic achievement of senior secondary students. The study emphasizes the significance of holistic development in education, where co-curricular activities (CCAs) play a vital role alongside formal academics. CCAs include a range of non-classroom engagements such as debates, music, sports, drama, arts, and community service that contribute to the cognitive, social, emotional, and physical growth of students. These activities are instrumental in breaking academic monotony, fostering adaptability, improving social interactions, and nurturing essential life skills. The study was conducted among 100 Class 11 students (30 boys and 70 girls) in Ghaziabad city. A checklist was used to record participation in 45 co-curricular activities, and academic scores from four core subjects (Science, Mathematics, Language, and Social Science) were collected. Data were analyzed using Pearson's correlation coefficient and t-tests to determine the relationship between CCA participation and academic performance. The results indicate a significant positive correlation between the level of participation in co-curricular activities and academic performance, especially in Language and Social Science subjects. Girls showed a higher rate of participation and a stronger positive association between CCAs and academic outcomes compared to boys. The findings suggest that co-curricular involvement enhances students' time management, discipline, motivation, and emotional well-being—factors that contribute directly to better academic performance. While some negative aspects such as over-involvement or poor supervision may exist, the positive impact of CCAs overwhelmingly outweighs these concerns. The study concludes that incorporating structured and inclusive co-curricular programs in school curricula can significantly improve not only academic achievement but also the overall personality development of students. Recommendations are made for educational institutions to formally integrate CCAs to fulfill the NEP 2020 vision of holistic and multidisciplinary learning.

Keywords: Co-curricular activities, academic achievement, holistic development, secondary school students, NEP 2020

INTRODUCTION

In the evolving landscape of education, there is a growing consensus among educators, researchers, and policymakers that academic excellence alone is insufficient for the overall development of learners. The emphasis is now shifting toward an education system that nurtures the physical, emotional, social, and cognitive domains of a child's personality. In this context, Co-curricular Activities (CCAs) have gained significant attention as an integral component of holistic education.

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The National Education Policy (NEP) 2020 envisions an education system that is rooted in Indian ethos, aimed at developing not only cognitive capacities but also social, ethical, and emotional dimensions of learners. NEP 2020 promotes

integrating arts, sports, vocational skills, and community-based learning with regular academic curricula to foster experiential and competency-based learning (Government of India, 2020) [9]. Co-curricular activities align well with this vision by providing a platform for learners to engage meaningfully beyond textbooks.

In support of this vision, the National Curriculum Framework for the Foundational Stage (NCF-FS, 2022) and the National Curriculum Framework for School Education (NCF-SE, 2023) emphasize the role of play, storytelling, performing arts, and peer learning in promoting child development. These frameworks stress learning that is enjoyable, inquiry-driven, and interlinked with real-life applications—qualities that co-curricular engagements naturally facilitate.

Numerous researchers have documented the educational benefits of CCAs. For instance, Sood 2010 found that students involved in co-curricular programs showed significantly higher academic motivation and performance. Similarly, Sharma and Mehta (2014) [2] observed that participation in dramatics and public speaking improved self-confidence and communication skills among secondary school students. A study demonstrated that regular involvement in sports and physical education activities enhanced classroom attention and reduced absenteeism.

These findings align with studies such as those by Fredricks and Eccles (2006) [5] and Marsh and Kleitman (2002) [12], which highlight how structured engagement in CCAs contributes to a student's academic persistence, emotional regulation, and interpersonal skills. Moreover, co-curricular involvement often promotes inclusivity, social cohesion, and cultural awareness—key elements for 21st-century education.

Despite these benefits, many schools still treat CCAs as optional or secondary to academic work. Lack of time, inadequate teacher training, and insufficient infrastructure are some of the barriers to effective implementation. It is therefore essential to not only recognize the impact of CCAs on academic success but also to integrate them formally into the curriculum as recommended by NEP 2020 and the NCFs.

This study aims to empirically examine the impact of CCA participation on academic performance, explore gender-based differences in participation and outcomes, and provide insights aligned with current educational reforms.

OBJECTIVES OF THE STUDY

- To examine the impact of co-curricular activities on students' academic achievement.
- To assess gender-based differences in CCA participation and its academic outcomes.
- To analyze how NEP 2020, NCF-FS, and NCF-SE frameworks support the integration of CCAs.
- To provide actionable recommendations for embedding CCAs in school practices.

REVIEW OF LITERATURE

Several researchers have highlighted the role of co-curricular engagement in improving academic outcomes:

The relationship between co-curricular activity (CCA) participation and academic achievement has been extensively studied in educational research. Scholars generally agree that CCAs are not only supplementary to formal education but also instrumental in promoting holistic development, as emphasized in India's National Education Policy (NEP 2020) and National Curriculum Frameworks (NCF-FS and NCF-SE).

Marsh and Kleitman (2002) [12] highlighted that participation in school activities significantly boosts students' academic motivation and engagement. Their longitudinal study found that CCAs positively

influenced academic self-concept, homework completion, and time management. Similarly, Eccles and Barber (1999) observed that engagement in structured extracurricular activities such as music, drama, and school clubs promoted a sense of identity, improved interpersonal skills, and enhanced academic discipline.

Fredricks and Eccles (2006) [5] offered a model of structured engagement where CCAs acted as scaffolding for school adjustment, self-regulation, and emotional intelligence—all of which are critical for academic success. Their findings support NEP 2020's emphasis on integrating "critical life skills" into the curriculum through active learning and participatory environments.

In a meta-analysis of over 800 studies, Hattie (2009) [11] ranked student-teacher relationships, engagement, and meta-cognitive strategies—many of which are developed in co-curricular settings—among the top predictors of academic performance. CCAs, by encouraging collaboration, communication, and creativity, foster these high-impact strategies organically.

Darling, Caldwell, and Smith (2005) [3] further validated that participation in extracurricular activities during adolescence promotes school attachment, reduces dropout rates, and enhances emotional and cognitive functioning. Their findings are particularly relevant in the post-COVID era, where re-engagement in learning and socialization is crucial.

Fujita (2006) [7] investigated STEM-oriented co-curricular programs such as robotics and science clubs and found that they significantly improve critical thinking and academic persistence in mathematics and science. These findings support the NEP's proposal to blend vocational, technological, and academic education for skill synergy.

Goodenow (1993) [8] emphasized the role of "belongingness" in school culture, asserting that CCAs create emotional safe spaces where students build community, confidence, and academic drive. Similarly, Someone found that at-risk students who participated in after-school programs were more resilient academically than those who did not.

Guest and Schneider argued that the benefits of extracurricular participation extend into adulthood, with participants demonstrating better career readiness, civic responsibility, and leadership skills—key areas targeted in the NEP 2020 vision of developing globally competent citizens.

Lamborn et al. (1992) noted that students involved in co-curricular activities often showed higher academic performance and lower rates of behavioral problems. This aligns with the NEP's competency-based approach, which promotes character development alongside cognitive growth.

Gulati (2021) [10] made a strong case for integrating CCAs into school-based assessment systems, particularly through formative and portfolio evaluations as suggested in NCF-SE. According to her, CCAs serve as practical avenues to assess competencies like teamwork, leadership, and communication in authentic contexts.

Fredricks, Blumenfeld, and Paris (2004) [6] developed a tripartite model of engagement—behavioral, emotional, and cognitive—that offers a theoretical framework to understand how CCAs contribute to learning. Emotional and behavioral engagement, often fostered through CCAs, create the foundational base necessary for cognitive engagement and academic excellence.

Zehner (2011) [15] highlighted that participation in service-learning projects, student governance, and cultural festivals are linked to improved problem-solving skills and reflective thinking. These qualities are central to the goals of both the NEP 2020 and NCFs.

In Indian contexts, Chatterjee and Sharma (2020) [2] observed that co-curricular involvement was a significant predictor of academic confidence and personal well-being among school children. Their

study emphasized the need for institutional support, equitable access, and teacher facilitation—echoing the reforms proposed in NEP 2020.

Furthermore, Batra (2022) [1] advocated for integrated scheduling in schools that balance academic instruction with CCA sessions, arguing that this synergy improves learning retention and student well-being. She identified that the emerging focus on foundational literacy and numeracy must also be complemented with avenues for expression and play, as detailed in the NCF-FS (2022).

In summary, the literature underscores a robust consensus: co-curricular activities are not peripheral to education—they are central to achieving its full purpose. They facilitate the interplay of emotional, social, and cognitive domains of learning, supporting the NEP 2020 vision of joyful, inclusive, and experiential education.

RESEARCH METHODOLOGY

The teaching–learning process involves Planning, Presentation, Practice, and Evaluation. Each stage helps teachers and learners achieve learning outcomes effectively.

Research Design

The present study adopts a descriptive–correlational design, aligning with the four stages of the teaching–learning process — Planning, Presentation, Practice, and Evaluation. In the planning phase, the objectives were clearly defined to describe and explore the relationship between co-curricular participation and academic achievement, without implying causation. The presentation phase involved systematic collection and organization of data, while practice included implementing the tool to measure actual engagement levels. Finally, the evaluation stage focused on analysing and interpreting the results in light of the stated hypotheses.

The correlational aspect was retained to examine associations between variables; however, no causal inferences were drawn.

Sample

A non-probability sampling technique was used due to feasibility constraints and accessibility of participants. This approach was appropriate for obtaining relevant data within the educational setting, although it limits generalizability. The rationale and inherent limitations are acknowledged and discussed in the study. The study sample included unequal numbers of boys and girls. Appropriate statistical adjustments (e.g., use of weighted means or non-parametric tests) were considered to minimize bias arising from unequal group sizes.

A total of 100 students (30 boys and 70 girls) from Class 11 across schools in Allahabad City were selected using non-probability sampling. Care was taken to ensure uniformity in socio-economic background, curriculum board, and geographical location.

Tools Used

The 45-item Co-curricular Activities (CCA) Checklist was validated through expert review and pilot testing. Its reliability was established using internal consistency measures (Cronbach’s alpha). The tool ensured comprehensive coverage of participation dimensions across planning, presentation, and practice stages of the learning process. It was administered. Students were asked to tick activities they had participated in over their school years. Academic achievement was measured using 10th-grade marks in four core subjects.

Data Analysis

Pearson’s correlation coefficient (r) was used to determine the relationship between the number of activities participated in and academic scores. Independent sample t-tests were used to identify gender differences.

DATA AND ANALYSIS

Hypothesis 1: There is a significant relationship between participation in co-curricular activities and students' academic achievement.

Pearson's correlation coefficient revealed a moderate to strong positive correlation ($r = 0.64$, $p < 0.01$) between CCA participation and academic performance. Students participating in more CCAs tended to have better scores in Language and Social Science subjects. These subjects, which emphasize communication and critical thinking, may benefit more directly from skills fostered through debate, theatre, and group discussions in CCAs.

Hypothesis 2: There is a significant difference between boys and girls in terms of participation in CCAs and academic achievement.

The results showed that girls ($n=70$) participated in an average of 25.7 CCAs, while boys ($n=30$) averaged 18.4. Girls outperformed boys in all subjects: Science (72.8% vs. 67.2%), Mathematics (70.2% vs. 65.5%), Language (78.5% vs. 71.3%), and Social Science (74.3% vs. 69.4%). An independent t-test confirmed the gender differences in participation and performance were statistically significant ($t = 2.89$, $p < 0.05$) as shown in Table 1.

Table 1. Participation and academic achievement by gender

Gender	Avg. CCA Participation	Science (%)	Math (%)	Language (%)	Social Science (%)	Overall (%)
Boys ($n=30$)	18.4	67.2	65.5	71.3	69.4	68.35
Girls ($n=70$)	25.7	72.8	70.2	78.5	74.3	73.95

Hypothesis 3: Integration of co-curricular activities is aligned with the vision and goals of NEP 2020 and the National Curriculum Frameworks.

The positive outcomes of CCA participation strongly affirm the policy directives of NEP 2020 and the NCFs, which emphasize experiential, integrated, and holistic learning. The frameworks advocate the inclusion of arts, sports, and values-based education within the school curriculum. The higher scores in Language and Social Science indicate that CCA-linked competencies—communication, collaboration, empathy—translate into measurable academic outcomes, particularly in subjects requiring interpretation and social reasoning.

Hypothesis 4: Strategic implementation of CCAs in schools can enhance student performance and holistic development.

Based on the study, it is recommended that schools:

- Embed CCA periods in the school schedule.
- Recognize CCA performance in student evaluations.
- Provide teacher training to effectively integrate CCAs.
- Foster inclusive environments for gender and social equity in participation.

These changes align with the NEP 2020's emphasis on equity, inclusivity, and learner-centric pedagogy, supporting academic excellence through holistic learning structures.

Interpretation

The data clearly indicates that students who actively participate in co-curricular activities (CCAs) tend to score higher academically, particularly in Language and Social Science subjects. The Pearson correlation coefficient of +0.64 highlights a moderately strong positive relationship between the extent of CCA participation and academic achievement. This correlation supports previous research (Marsh &

Kleitman, 2002 [12]; Fredricks & Eccles [5], 2006) suggesting that co-curricular engagement enhances cognitive and non-cognitive skills that are transferable to academic domains.

Girls in this study demonstrated higher levels of participation and better academic performance across all subjects, which may be attributed to their frequent engagement in communication-intensive activities such as debates, elocution, and community services. These activities are known to enhance metacognitive awareness, self-regulation, and social intelligence (Eccles & Barber, 1999) [4], skills that directly contribute to academic success in humanities-based subjects.

NEP 2020 strongly advocates for this kind of integrated development, emphasizing the interplay of emotional, social, and academic competencies. The NCF-SE (2023) also encourages project-based learning and thematic instruction where subject knowledge is built through interdisciplinary and real-life contexts—many of which are best simulated through co-curricular settings. For instance, a student participating in a school magazine or a storytelling club inadvertently strengthens their language, creativity, collaboration, and critical thinking—directly supporting language curricula objectives.

These findings suggest that academic and co-curricular competencies are not isolated; they complement and reinforce one another. When students engage in music or theater, they don't just gain aesthetic skills—they often improve memory, attention span, and verbal articulation (Hattie [11], 2009; Zehner, 2011 [15]). Similarly, participation in sports improves discipline, time management, and emotional regulation—all crucial for consistent academic engagement.

DISCUSSION

The findings of this study underscore the growing consensus that co-curricular activities serve as catalysts for academic success and personal development. The observed gender variation in participation and its academic effects suggests the need for gender-responsive approaches in designing CCA programs.

From the lens of NEP 2020, co-curricular activities are integral to the transformation from rote learning to experiential and competency-based education. The policy places equal emphasis on the development of "head, heart, and hand"—cognitive, emotional, and psychomotor domains—which are all addressed holistically through well-structured CCAs. For example, school gardening not only teaches sustainability (Science, Social Science) but also improves perseverance and collaboration, as highlighted in NEP's vision for eco-conscious citizenship.

The NCF-FS (2022) emphasizes the "learn by doing" philosophy for foundational years, proposing art, play, and story-based engagement to build early literacy and numeracy. These co-curricular forms of learning are now seen as core pedagogical tools, not optional extras. As students move to middle and secondary levels (NCF-SE, 2023), these experiences scale up through dramatization, exhibitions, interdisciplinary projects, and digital storytelling—each linking personal expression with academic understanding.

Moreover, co-curricular engagement fosters a sense of belonging, which has been identified as a key determinant of student success (Goodenow, 1993). Students who feel emotionally and socially connected to their school are more motivated and likely to persevere through academic challenges. This aligns with Fredricks et al. (2004) [6], who stress that emotional and behavioral engagement, often cultivated in CCAs, strongly predicts academic effort and persistence.

Beyond frequency, qualitative dimensions of intensity, involvement, and engagement in CCA were considered. This provided a more holistic understanding of students' participation and its potential correlation with learning outcomes.

Furthermore, the literature suggests that when students are exposed to problem-solving tasks in clubs or competitions (e.g., Science fairs, Robotics teams), they develop confidence and adaptive skills that enhance performance in traditional subjects like Mathematics and Science (Fujita, 2006) [7].

A concerning issue, however, is that many Indian schools, especially those in rural or low-income urban areas, still view co-curriculars as secondary or “leisure” time fillers. This mindset runs counter to policy recommendations. Unless CCAs are embedded within school time-tables, linked with assessment rubrics, and guided by trained facilitators, their potential remains underutilized. The NCF-SE explicitly recommends portfolio-based assessment, self-reflection, and project evaluation—methods which are inherently tied to co-curricular practice.

To conclude, the findings not only reinforce the need for embedding CCAs into school systems but also call for systemic changes in infrastructure, teacher preparation, and community engagement. CCAs are not a diversion from academics—they are an essential pillar of the NEP 2020 vision for joyful, inclusive, and quality learning.

CONCLUSION

The findings of this study affirm that co-curricular activities (CCAs) significantly contribute to the academic achievement and holistic development of students at the senior secondary level. Drawing from both empirical analysis and established literature, it is evident that students who engage in CCAs—such as debates, sports, drama, arts, and community service—develop competencies that complement and reinforce formal academic learning.

The positive correlation observed between CCA participation and higher academic scores, especially in Language and Social Science, is consistent with prior research. For instance, Fredricks and Eccles (2006) and Marsh and Kleitman (2002) demonstrated that structured extracurricular involvement enhances student motivation, time management, and emotional engagement, which in turn improve academic outcomes. The study also reaffirms Goodenow’s (1993) assertion that a sense of belonging and social connectedness cultivated through CCAs fosters academic perseverance.

The gender-specific findings of the study—showing higher CCA participation and academic performance among girls—highlight the need for equitable encouragement and inclusion, particularly for boys and students from marginalized communities. These patterns suggest that socio-cultural and institutional support mechanisms significantly shape access to and outcomes of co-curricular learning.

Importantly, this study aligns closely with the National Education Policy (NEP) 2020, which envisions a shift from rote learning to experiential, competency-based education. The National Curriculum Frameworks (NCF-FS and NCF-SE) reinforce this vision by advocating for the integration of art, physical education, and life skills into the daily curriculum. These frameworks emphasize that academic and non-academic domains are not mutually exclusive—rather, they function as interdependent pathways to learner growth.

For example, a student participating in drama club may improve expressive language and empathy, which then supports better performance in literature or history. Similarly, engagement in sports or yoga can enhance focus, resilience, and health—factors closely linked to academic consistency and attendance. As Fujita (2006) noted, involvement in STEM-based clubs like robotics not only nurtures critical thinking but also improves conceptual understanding in core subjects.

Moreover, CCAs develop transversal competencies like collaboration, problem-solving, creativity, and leadership—skills now emphasized across global educational paradigms and echoed in NEP 2020’s goal of preparing students for the demands of the 21st century (Government of India, 2020 [9]; NCERT, 2022, 2023) [13, 14].

Thus, this research reaffirms that co-curricular and academic domains operate in synergy. Participation in CCAs is not a diversion from academic pursuits but a catalyst for meaningful, engaged, and reflective learning. When properly integrated, CCAs support the NEP's aspiration to create joyful, inclusive, and developmentally appropriate classrooms that nurture well-rounded individuals.

To fully realize this vision, educational stakeholders—policy makers, school leaders, teachers, and parents—must acknowledge the centrality of CCAs and embed them structurally into school timetables, assessments, and resource planning. Teacher training, infrastructure development, inclusive policies, and student portfolios documenting CCA engagement are critical next steps in operationalizing this holistic paradigm of education.

In conclusion, the study reinforces a simple yet transformative idea: education is not merely about learning more but about learning more meaningfully. And co-curricular activities, when valued and implemented purposefully, offer just that—a bridge between knowledge and life.

Recommendations

- *Formal Integration:* Schools must integrate CCAs into timetables and subject assessments.
- *Teacher Training:* Teachers should be equipped to lead arts, physical, and vocational CCAs.
- *Infrastructure Support:* NEP's holistic approach must be matched with playgrounds, art rooms, and clubs.
- *Equity Focus:* Girls and marginalized groups should be given equal opportunities.
- *Portfolio Assessment:* Encourage students to build personal portfolios of CCA engagement.

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