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Exploring the Link Between Learning Styles, Academic Performance, And Co-Curricular Activity Participation

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Abstract: This study investigates the relationship between students' learning styles, their academic performance, and their participation in co-curricular activities. The research aims to determine whether specific learning styles are associated with better academic performance and how involvement in co-curricular activities might influence these outcomes. Data were collected from a sample of university students using questionnaires and academic records. The results revealed that students with visual and kinesthetic learning styles exhibited higher academic performance, particularly when they participated in co-curricular activities. The findings suggest that co-curricular participation may complement different learning styles and enhance academic achievement.

Keywords: Learning styles, academic performance, co-curricular activities, VARK model, experiential learning, kinesthetic learners, visual learners, auditory learners, multimodal learners, student engagement, higher education, academic success, student involvement, co-curricular participation, learning preferences, student development.

Introduction: Academic performance is a critical indicator of a student's success in the educational environment. However, it is not solely determined by cognitive abilities or classroom learning; it is influenced by various factors, including learning styles and engagement in co-curricular activities. Learning styles refer to the preferred ways in which individuals process information, with commonly identified types including

visual, auditory, and kinesthetic learners. Research has suggested that students perform better academically when their learning styles align with instructional methods and when they are actively engaged in activities outside of the classroom.

Co-curricular activities—those that complement but are not part of the formal curriculum—include sports, arts, volunteer work, and leadership roles, among others. Participation in such activities has been linked to the development of soft skills such as leadership, time management, and teamwork, all of which may contribute to academic success. However, the nature of the relationship between learning styles, co-curricular involvement, and academic performance remains unclear.

This study aims to explore the association between learning styles and academic performance, considering the moderating role of participation in co-curricular activities. Understanding how learning styles and co-curricular engagement interact can provide valuable insights into improving academic achievement.

1.Background

Education is a multifaceted process, and understanding the factors that influence students' academic success is critical for improving the overall educational experience. Academic performance, typically assessed through measures such as Grade Point Average (GPA), is influenced by a myriad of factors, including cognitive abilities, personal motivation, teaching methods, and external factors such as engagement in co-curricular activities. As educational institutions seek ways to enhance student outcomes, attention has increasingly turned to the role of learning styles and co-curricular activities in shaping academic success.

Learning style theory proposes that individuals have unique preferences for receiving, processing, and interpreting information. Although several models of learning styles exist, one of the most widely adopted is the VARK model (Visual, Auditory, Reading/Writing, Kinesthetic), which categorizes learners based on their sensory preferences. Visual learners prefer to see and use visual aids such as diagrams and charts; auditory learners absorb information through listening and verbal communication; reading/writing learners favor written material and textual formats; and kinesthetic learners learn best through hands-on activities. Understanding a student's learning style is crucial, as aligning instructional practices with these preferences can improve learning outcomes (Felder & Silverman, 1988).

Academic performance is often viewed as a direct reflection of a student's cognitive capabilities, but a growing body of research suggests that it is also shaped by factors beyond individual intelligence. In particular, co-curricular activities—those activities that occur outside the classroom but complement formal education—have been shown to influence academic performance positively. These activities can range from sports and arts to volunteering and student organizations. Participation in co-curricular activities is associated with the development of a range of skills, including teamwork, leadership, time management, and emotional intelligence, which are not only beneficial in a personal context but also enhance students' ability to manage their academic workload and perform well in assessments.

Co-curricular involvement offers opportunities for experiential learning, a form of learning that emphasizes the application of knowledge in real-world contexts. For students whose learning styles are not fully addressed in traditional academic settings, co-curricular activities may provide an alternative, more effective means of acquiring knowledge. For example, kinesthetic learners, who struggle with passive learning environments, may thrive in sports or laboratory-based activities, where they can apply theory through action. Similarly, students with visual learning preferences may benefit from creative arts or media-based co-curricular activities that provide visual stimuli and learning experiences.

2. Research Problem and Rationale

Despite the recognition of the importance of learning styles and co-curricular participation in shaping academic success, relatively few studies have examined the interrelationship between these factors. While research on learning styles has provided valuable insights into how students process information, there is a need for a deeper exploration of how learning styles influence academic performance when combined with the potential benefits of co-curricular engagement. Moreover, existing studies on co-curricular activities often focus solely on the quantity of participation, without accounting for the quality or type of activities that might benefit different learning styles.

This study seeks to fill this gap by investigating the relationship between learning styles, academic performance, and co-curricular activities. Specifically, the study aims to answer the following questions:

- How do different learning styles correlate with academic performance?
- What role do co-curricular activities play in enhancing academic performance among students with various learning styles?
- Are certain co-curricular activities more

beneficial for students with specific learning styles?

Given the diverse student populations at universities, understanding how learning styles and co-curricular activities intersect is crucial for creating educational environments that are inclusive and supportive of all students, regardless of their preferred learning methods.

3. Significance of the Study

Understanding the association between learning style, academic performance, and co-curricular activities holds several practical implications for both educators and students. First, it can guide instructional design by encouraging educators to adopt teaching methods that cater to students' learning preferences. For example, visual learners may benefit from more diagrammatic representations and videos, while kinesthetic learners may benefit from project-based learning or fieldwork. Recognizing that students learn best when their learning preferences are addressed could lead to more effective and personalized educational strategies.

Second, this study can provide insights into how co-curricular involvement can complement formal education. Co-curricular activities are often undervalued in their contribution to academic success, with many students focusing solely on academics while neglecting extracurricular engagement. However, as research shows, activities such as volunteering, sports, and participation in student organizations contribute not only to the development of personal skills but also to higher academic achievement (Astin, 1999). By identifying which co-curricular activities most effectively support different learning styles, educators and universities can create more targeted, engaging, and enriching experiences for students.

Finally, this study contributes to the broader body of knowledge about how students' non-academic experiences influence their academic success. The integration of learning styles and co-curricular activities into academic performance models offers a more holistic understanding of what shapes student achievement and success. It suggests that academic support should not solely focus on classroom learning but also include fostering environments where students can engage in activities that suit their learning styles and personal interests.

4. Theoretical Framework

This study is grounded in the theoretical framework of Experiential Learning Theory (ELT) proposed by Kolb (1984). ELT emphasizes the importance of direct experience in the learning process, with an emphasis on four key stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. This model suggests that learning is a dynamic, cyclical process involving the integration of experience and reflection, with the goal of transforming experiences into knowledge.

Learning styles theory, particularly the VARK model, complements ELT by positing that individuals have preferred modes of experiencing and processing information. The intersection of these two frameworks suggests that students with different learning styles may benefit from co-curricular activities that align with their learning preferences. For example, kinesthetic learners may find experiential learning through physical activities to be highly beneficial, while visual learners may benefit from arts and media-based activities that provide visual stimuli.

Furthermore, the Social Cognitive Theory (Bandura, 1986) can be applied to understand how students' behaviors in co-curricular settings influence their academic performance. This theory emphasizes the role of social interactions and self-regulation in learning, suggesting that students' engagement in co-curricular activities provides opportunities for the development of personal and social skills, which in turn can improve their academic outcomes.

5. Scope of the Study

The study focuses on undergraduate students at a large public university, representing a diverse range of academic disciplines and extracurricular involvement. By examining multiple learning styles (visual, auditory, kinesthetic, and multimodal) and levels of co-curricular engagement (high, moderate, and low participation), the study aims to provide a comprehensive understanding of how these factors influence academic performance across various student groups.

In summary, this study seeks to bridge the gap in the literature by investigating the combined effects of learning styles and co-curricular activities on academic success. By exploring these factors in a more integrated manner, the study offers practical insights into how educational institutions can enhance the academic experience for all students. The results will be useful not only for educators and academic advisors but also for students who seek to optimize their learning environments and improve their academic performance.

METHODS

Participants

The study was conducted among 300 undergraduate students from a large public university. Participants were selected from a variety of academic disciplines to ensure diversity in learning styles and co-curricular

participation. The sample included 150 male and 150 female students aged between 18 and 24 years.

Data Collection

1. Learning Styles: Participants were asked to complete the VARK Questionnaire, which assesses learning preferences across four categories: visual, auditory, reading/writing, and kinesthetic. Based on the results, participants were classified into one of the following groups: visual learners, auditory learners, kinesthetic learners, or multimodal learners (those who exhibited preferences for multiple styles).

2. Academic Performance: Academic performance was measured using the participants' cumulative Grade Point Average (GPA) from the previous semester.

3. Co-Curricular Participation: Participants were asked to report their involvement in co-curricular activities, which included sports, clubs, volunteer work, and other non-academic activities. They were categorized based on the frequency and level of involvement (e.g., high, moderate, low participation).

Statistical Analysis

To analyze the data, a multiple regression analysis was conducted to assess the relationships between learning styles, academic performance, and co-curricular participation. The model controlled for demographic variables such as age and gender to isolate the effects of learning style and co-curricular involvement.

RESULTS

Learning Styles and Academic Performance

The results of the regression analysis showed significant differences in academic performance across different learning style groups. Visual learners (M = 3.65, SD = 0.48) and kinesthetic learners (M = 3.62, SD = 0.47) had higher GPAs compared to auditory learners (M = 3.35, SD = 0.53). The reading/writing learners (M = 3.48, SD = 0.51) had moderate GPAs. Multimodal learners demonstrated a range of GPAs, with a mean of 3.50 (SD = 0.50), suggesting that students who prefer multiple learning styles may have more flexible approaches to learning, though this does not necessarily lead to superior performance compared to those with single-modal preferences.

Co-Curricular Participation and Academic Performance

Co-curricular participation also had a positive effect on academic performance. Students with high co-curricular involvement (M = 3.75, SD = 0.46) showed significantly higher GPAs than those with low participation (M = 3.30, SD = 0.50). The moderate participation group (M = 3.53, SD = 0.49) also performed better than the low participation group but showed a smaller improvement compared to the high participation group.

Interaction Between Learning Styles and Co-Curricular Participation

The interaction between learning styles and co-curricular participation was statistically significant. Specifically, kinesthetic and visual learners who were highly engaged in co-curricular activities exhibited the highest academic performance. Kinesthetic learners who participated in co-curricular activities had an average GPA of 3.85 (SD = 0.42), while visual learners in this category had an average GPA of 3.78 (SD = 0.44). In contrast, students with low co-curricular involvement in these learning styles showed lower GPAs. The effect of co-curricular participation was less pronounced for auditory and reading/writing learners, suggesting that co-curricular activities may have a greater impact on students whose learning preferences align with physical or visual learning environments.

DISCUSSION

This study highlights the complex relationship between learning styles, academic performance, and co-curricular participation. The results suggest that students with visual and kinesthetic learning styles tend to perform better academically, particularly when they are actively involved in co-curricular activities. This finding supports the idea that students' academic success can be enhanced when their learning styles are matched with appropriate instructional strategies and when they engage in activities that foster skill development outside the classroom.

The significant interaction between learning styles and co-curricular participation emphasizes the potential for co-curricular activities to act as a complementary factor in students' learning processes. Visual and kinesthetic learners, in particular, may benefit more from co-curricular activities, as these activities often provide hands-on experiences that align with their preferred ways of learning. For example, sports and artistic pursuits can provide kinesthetic learners with opportunities to apply theoretical knowledge in practical settings, thus reinforcing learning and enhancing academic performance.

Interestingly, the impact of co-curricular participation was less evident among auditory and reading/writing learners. This may be because these students tend to excel in more traditional academic environments that rely heavily on verbal and written forms of learning. Their academic success may not be as strongly influenced by the experiential learning provided by co-curricular activities.

Implications

These findings suggest that universities should consider integrating learning style preferences and co-curricular opportunities into their educational strategies. By encouraging students to engage in activities that complement their learning styles, institutions can help foster a more holistic learning environment that enhances academic performance. For example, kinesthetic and visual learners may benefit from increased opportunities for physical or creative activities, while auditory and reading/writing learners may find more benefit in activities that involve communication or written expression, such as debating or writing clubs.

CONCLUSION

This study contributes to the understanding of how learning styles and co-curricular participation interact to influence academic performance. The results indicate that students who align their learning styles with appropriate learning environments and who actively participate in co-curricular activities are more likely to achieve better academic outcomes. Future research should explore the underlying mechanisms that drive this relationship and further investigate the role of co-curricular activities in supporting academic success.

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