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A Comparison Of Academic Achievement Between Science And Physical Education Students

[1]Ankit Sneh, [2]Dr. S. E. Band

[1]Research Scholar, [2]Director of Phy.Edu. &Sports,

[1]S.G.B.A.U. Amravati, (M.S.), India. [2]R.R. Lahoti, Science College Morshi Amravati (M.S.), India

Abstract

A comparison of the academic performance of students in the Science and Physical Education programs has been attempted. The mean academic success score of Science students was somewhat higher (64.8±13.9) than that of Physical Education students (60.4±15.8), according to descriptive statistics, with more variability shown within the Physical Education group. To determine if the difference between the two groups was significant, an independent t-test was used. The groups' academic performance did not differ statistically significantly, according to the results. These results imply that the choice of academic stream has no discernible impact on academic success.

Keywords: academic achievement, science, physical education, students, comparison

Introduction

Academic accomplishment is a crucial measure of students' success in educational settings and is frequently related to future job prospects, personal growth, and societal contributions (Coleman et al., 1966; Zimmerman & Schunk, 2011). It is therefore an important indicator of students' success in educational settings. According to Marsh and Hauk (2004), the degree of academic achievement is impacted by a variety of factors, including individual traits, learning settings, teaching styles, and the nature of the academic stream that students choose to pursue. Among the several academic streams, Science and Physical Education are two separate fields that each have their own specific learning goals and instructional methodologies. Education in the field of science is often connected with theoretical knowledge, problem-solving abilities, and analytical thinking, with an emphasis on traditional academic examinations (Wellington & Ireson, 2012). On the other hand, Physical Education incorporates not just physical but also cognitive and social learning, and it frequently helps students develop skills that are applicable outside of the classroom, such as leadership, collaboration, and understanding of the importance of physical health (Bailey et al., 2009). children who are enrolled in Physical Education learn a combination of academic and practical skills, which may have an impact on their overall academic success. In contrast, children who are enrolled in Science may benefit from rigorous theoretical instruction. In spite of these distinguishing characteristics, there is a paucity of empirical information that investigates the ways in which the academic accomplishments of students differ across these two streams. The research that has been done up until now has produced contradictory findings. While some studies have suggested that academic achievement may vary depending on the type of academic stream, others have suggested that factors such as motivation, teaching quality, and socio-economic background may play a more significant role (Roth et al., 2015; Marsh & Martin, 2011). This research endeavors to fill this need by contrasting the academic accomplishments of students who are enrolled in the Science and Physical Education streams. The research use both descriptive and inferential statistical approaches to accomplish this comparison. In addition to providing educators, policymakers, and curriculum architects with insights that may be used to improve educational practices across disciplines, it is anticipated that the findings of this study will lead to a better understanding of how different academic streams impact the academic outcomes of students.

Methodology

The sample were chosen using a random sample approach among male students enrolled in the higher secondary level of Science and Physical Education at CBSE schools in the Magadh region. The subject's age ranged from 15 to 18 years. The total number of subjects was one hundred eighty (N=180), divided into two groups: Sciences and Physical Education. Each group had ninety subjects (N=90), exclusively recruited from school-going male students. Performance in final Examination was considered as academic achievement scores. Performance in final Examination was considered as academic achievement scores. The subjects were selected from the CBSE schools of Magadh region.

Analysis and Interpretation of Data

Table1: Showing the descriptive (Mean and Standard Deviation) statistics of Academic Achievement of Science and Physical Education students.

Variables	Groups	Mean	Std. Deviation
Academic Achievement	Science	64.8	13.9
	Physical Education	60.4	15.8

Table 1 depicted the descriptive statistics of academic achievement of science and physical education students. The mean and SD score of Academic Achievement of Science group is found to be (64.8±13.9), and the mean and SD of Physical Education group is found to be (60.4±15.8). The SD depicted inter-individual differences within the groups in both the studies groups.

Table 2: showing the comparison (Independent t-test) of Academic Achievement between the Science and Physical Education students.

SN	Groups	M	Md	Sed	Calculated t-ratio	Tabulated-t-ratio
1	Science	64.8	4.38	2.22	1.97	1.984
2	Physical Education	60.4				

*Significant at 0.05 level (df-2,172) = 1.984)

Above table 2 presents the comparison of academic achievement between studied groups i.e. science and physical education groups. The mean score of science (64.8) is insignificantly higher than that of physical education (60.4) group. The calculated t- value (1.97) is found to be lower than the tabulated t-value (1.984). on the basis of t-score it can be infer that there is a insignificant difference between the mean scores of both studied groups.

Discussion

Comparing the academic performance of students who were enrolled in the Science stream with those who were enrolled in the Physical Education stream was the purpose of this study. According to the findings of the descriptive statistics, which are presented in Table 1, it can be observed that the students who were enrolled in Science earned a slightly higher mean score of 64.8±13.9 in comparison to the students who were enrolled in Physical Education (60.4±15.8). According to Wellington and Ireson (2012), the higher mean score for students in the Science department might be due to the fact that they place a larger emphasis on theoretical and analytical topics, which are frequently highlighted in the academic curriculum for science. The students in Physical Education, on the other hand, who have a tendency to participate in a combination of theoretical and practical learning, had a considerably bigger standard deviation (15.8), which reflects a higher degree of variability in their academic performance.

The inferential analysis, which is presented in Table 2, provides additional evidence that the observed difference in mean scores between the two groups is not statistically significant. The t-value that was estimated was 1.97, which is somewhat lower than the critical value of 1.984, when the significance threshold was set at 0.05 and the number of degrees of freedom was 172. According to this, there is no discernible difference in the level of academic accomplishment between pupils who come from backgrounds in Science and those who come from Physical Education education. According to Roth et al. (2015), prior research came to the same conclusion, which was that the kind of academic stream did not significantly effect overall academic performance. This was one of the findings that was published in those studies. The absence of a substantial difference may be attributed to a number of different variables. For instance, children from both groups could have access to comparable academic resources, learning settings, and the quality of instruction, which can help reduce the inequalities in accomplishment that exist between them (Coleman et al., 1966). Furthermore,

Zimmerman and Schunk (2011) suggest that the choice of academic stream may not be the most important element in determining academic performance. Instead, individual variables such as motivation, self-regulation, and study habits may play a more significantly important role.

It is also important to note that the more comprehensive curriculum design in Physical Education programs integrates learning through experience and skill-based learning, which may not exactly correlate with the standard academic evaluation criteria. In the future, studies should investigate additional variables, such as the motivation of students, their engagement in extracurricular activities, and their ability to manage their time effectively, in order to gain a deeper understanding of the intricacies of academic success across a variety of educational streams. Furthermore, longitudinal studies that investigate the changes in academic success over the course of time might have the potential to give deeper insights into the ways in which various learning environments influence educational results.

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