EXAMINING THE INFLUENCE OF GENDER ON ENGAGEMENT AND ACHIEVEMENT IN PHYSICAL EDUCATION

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ABSTRACT

The present research study has explored the relationship between gender and student engagement and performance in Physical Education. The research design was descriptive and comparative and was carried out on a sample of 80 students who were sampled with the use of stratified random sampling study technique that consisted of 40 male and 40 female students. A standardized Student Engagement Scale that measured behavioural, emotional and cognitive dimensions were used to measure student engagement, and performance-based assessments and practical examination scores were used to measure achievement. The data that was obtained were analyzed in terms of mean, standard deviation, independent samples t-test, and correlation analysis. The results indicated that the female students indicated a better mean score in the engagement and achievement than male students. The t-test outcomes implied that gender differences in the engagement and achievement are statistically significant, which implies that the gender factor is not insignificant in developing the participation and performance of students in Physical Education. Moreover, correlation analysis revealed that there was a strong positive relationship between engagement and achievement such that, the level of engagement was linked to better academic and performance outcomes. The paper identifies the need to promote inclusive and encouraging Physical Education settings that will facilitate gender participation.

Keywords: *Gender, Student Engagement, Student Achievement, Physical Education, t-test, Correlation.*

1. INTRODUCTION

Physical Education is crucial in the overall development of the student through physical fitness, motor coordination, emotional balance as well as social interaction. In addition to the material gains, it also leads to cultivation of discipline, team work, confidence, and healthy lifestyle. Student participation in Physical Education in the learning environment is taken to be one of the influencing elements of participation, learning and general performance.

Gender is a variable that has been identified as significant in terms of its influence on the attitude, the motivation and participation of students in the academic and co-curricular activities of students. The differences in the patterns of socialization, cultural expectations, and psychological factors can influence the perception and participation in the Physical Education by male and female students. Such differences have the potential to not only affect the level of engagement, but performance and achievement.

Academic success has a tight connection with student engagement, which comprises behavioural, emotional, and cognitive components. Increased involvement will in many cases result in increased participation, acquisition of skills and better performance. Nevertheless, there could be gender variations in the patterns of engagement and this could be part of unequal learning experiences and results in the context of Physical Education.

It would be imperative to examine how gender affects the engagement and achievement so as to gain insight into the student behaviour and the means of improving the teaching methods. The current paper aims to investigate gender discrepancies in participation and success in Physical Education, thus, offering some evidence that can guide teachers to develop more inclusive and effective teaching models.

2. REVIEW OF LITERATURE

Molinillo et al., (2020) investigated the effects of social support and community-related variables on customer engagement and its further effects on the loyalty behaviours in social commerce settings. Their experiment showed that the perceived social support and interaction with the community were very important in improving user engagement, which positively affected loyalty intentions. The results supported the role of engagement-related outcomes as being strengthened by the presence of interactive and supportive environments.

Shoval et al., (2021) examined the relationship between sports involvement, self-efficacy, and academic success with the gender disparity in mind. The researchers discovered that gender served a prominent moderating factor since the interaction between sports engagement and academic achievement was different between male and female students. Their findings emphasized that self-efficacy and involvement in sports had a positive interaction with the academic performance, which implied that the consideration of gender-specific motivational and psychological processes was necessary.

Tidmarsh et al., (2022) examined how motivation climate can influence female students to participate in secondary school Physical Education. The authors, with the help of a dual-study approach, found out that a mastery-oriented climate (with encouragement, autonomy, and personal improvement) had a positive impact on female engagement. On the other hand, participation and motivation were observed to be lowered by performance-oriented climates. The article has highlighted the importance of enabling pedagogical interventions in fostering gender-sensitive interactions.

Vazou et al., (2019) performed a meta-analysis and narrative review to determine the findings of physical activity interventions on the cognitive outcomes of young people. Their review showed that physical activity positively influenced cognitive functioning but the effects of the interventions were different depending on their characteristics. The authors concluded that physical involvement did not only help in the physical well-being but also academic and mental growth.

Yu, Gao, and Wang (2021) studied how educational games could influence the learning outcomes, motivation, student engagement, and satisfaction. The researchers have found that learning strategies based on games contributed greatly to the level of student engagement and motivation that resulted in the increased levels of academic performance and satisfaction. They proposed that the positive impact of innovative and interactive pedagogical strategies on the engagement-related variables in educational settings might be achieved.

3. RESEARCH METHODOLOGY

This section presents the study methodology which consists of the research design, sampling technique, variables, data collection tool, procedure, statistical analysis and ethical considerations adopted in the research to investigate gender difference in engagement and achievement in Physical Education.

3.1. Research Design

The present research design was based on descriptive and comparative research design in order to investigate the impact of sex on learners' engagement and performance in Physical Education. The design was chosen because it provides the opportunity to describe and compare variables in a systematic way and without any experiments manipulating the variables as they arise. The comparative method helped to analyze the differences in male and female students as regards to their engagement patterns as well as their level of achievement in Physical Education.

3.2. Sample and Sampling Technique

A total of 80 students were used in the study. Stratified random sampling method was taken to make the sample equally represent both genders. The sample size was 40 men students and 40 women students. The sampling procedure was in such a way that participants were similar in terms of their academic attributes hence uniformity and reduction of sampling bias. Gender-based comparisons were enhanced by the application of the stratified sampling.

3.3. Variables of the Study

Gender was the independent variable, which was classified into male and female. Student engagement and student achievement in Physical Education were used as the dependent variables. Student engagement was including behavioural, emotional, and cognitive aspects that reveal the involvement of students to the Physical Education activities. Student achievement was defined as the quantifiable outcomes in the form of performance scores, practical tests, and assessments with regard to Physical Education.

3.4. Data Collection Tools

The data was gathered by using standardized and structured instruments. The measure of student engagement was a Student Engagement Scale developed to determine behavioural engagement, emotional engagement, and cognitive investment. The performance-based assessment, practical examination results, and skill test results were used to get the achievement data of the students. The instruments used guaranteed reliability, objectivity and consistency in measurement of data.

3.5. Procedure of Data Collection

Data collection was done systematically. The Student Engagement Scale was given to the participants with explicit instructions in order to give accurate responses. Students got sufficient time to fill in the questionnaire. Data based on achievement were collected using evaluation records and performance assessment. A neutral and unbiased environment was observed when collecting the data.

3.6. Statistical Techniques Used

The data gathered was analyzed with the help of the suitable statistical methods. The engagement and achievement scores were summarized using descriptive statistics like means and standard deviation. The independent samples t-test as a form of inferential statistics were used to identify significant differences between male students and female students. Correlation analysis was done where it was required to test the relationships between engagement and achievement variables.

3.7. Ethical Considerations

The study was conducted in a very ethical manner. The participants were asked to participate on a voluntary basis and informed consent was signed. Anonymity and confidentiality of the responses was guaranteed. The information was gathered purely on academic and research systems.

4. RESULTS AND DISCUSSION

This section shows the data analysis and interpretation of gathered data in order to explore how gender affects student involvement in and performance in Physical Education. The results are presented in terms of descriptive statistics, inferential statistics, and correlation to discover patterns, differences, and relationship between the variables under the study. Results are presented in a clear and systematic way using tables and figures.

Table 1 shows the descriptive statistics of the student engagement score given in terms of gender. The table contains the values of N (number of participants), mean scores and the values of standard deviation of the male and female students. The two groups are of 40 people each. The value of mean and standard deviation of the engagement scores is useful as they give an overview of the central tendency and variability of the engagement scores in each gender group. These descriptive statistics are presented as a graph as shown in figure 1, which visually shows the distribution of engagement scores between male and female students.

Table 1: Descriptive Statistics of Student Engagement Scores

Gender	N	Mean	Standard Deviation
Male Students	40	72.45	8.62
Female Students	40	76.30	7.95

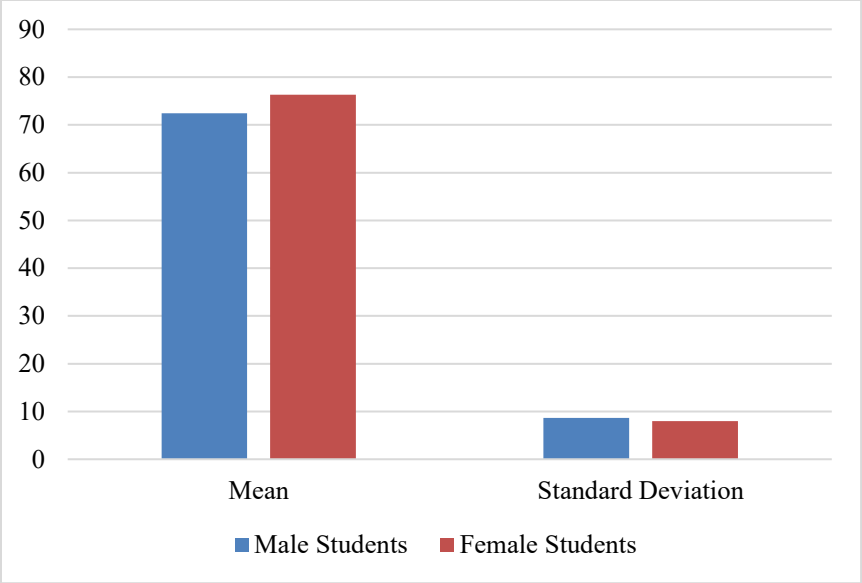

Figure 1: Graphical Representation of Descriptive Statistics of Student Engagement Scores

The statistics reveal that the female students had a better mean score in engagement (Mean = 76.30) than males (Mean = 72.45). This indicates that the female students were found to be comparatively more involved in Physical Education activities. The values of the standard deviations are similar across the two groups where the male students (SD = 8.62) and female students (SD = 7.95). Generally, the results suggest that there are gender differences in the engagement of students with females showing a little higher level of engagement.

The descriptive statistics of the student achievement scores based on gender are provided in table 2. Table reports the number of participants (N), mean scores, and the values of standard deviation of male and female students. There are 40 students of each gender group. The means values are used to show the average score of achievement and the standard deviation used to show the variation of the scores in each group. These descriptive statistics have been graphically demonstrated in figure 2 and the comparison between the distributions of achievement scores is presented visually between male and female students.

Table 2: Descriptive Statistics of Student Achievement Scores

Gender	N	Mean	Standard Deviation
Male Students	40	68.20	9.14
Female Students	40	71.85	8.37

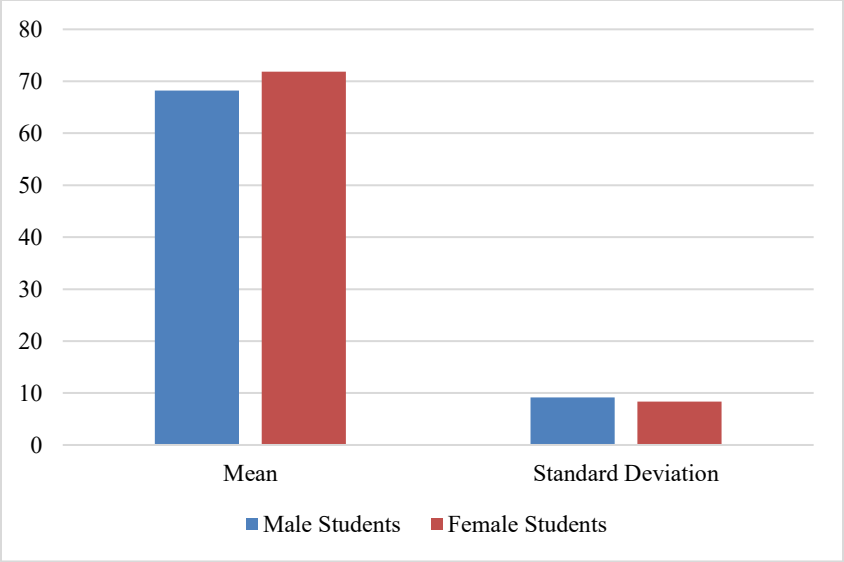

Figure 2: Graphical Representation of Descriptive Statistics of Student Achievement Scores

The results indicate that the mean achievement score (Mean = 71.85) among female students was greater than that of male's students (Mean = 68.20). This suggests that, female students performed comparatively better in assessments on Physical Education. The values of standard deviation indicate a moderate dispersion of the scores in both groups, of the male students (SD = 9.14) and the female students (SD = 8.37). Generally, the findings indicate the gender differences in student achievement, as the female students portray a slightly higher achievement level.

The outcomes of the independent samples t-test used to test the differences in student engagement and student achievement as the dependent variables versus the gender is shown in Table 3. The calculated t-values, the p-values, and the level of statistical significance of each variable are presented in the table. These statistics were applied to find out whether differences between the male and female students were statistically significant.

Table 3: t-test Showing Gender Differences in Engagement and Achievement

Variable	t-value	p-value	Significance
Student Engagement	2.18	0.032	Significant
Student Achievement	2.05	0.043	Significant

The results of the t-tests reveal that there is a statistically significant difference between the genders in terms of the engagement of students ($t = 2.18$, $p = 0.032$) and achievement of students ($t = 2.05$, $p = 0.043$), because the p-values are smaller than the significance level of 0.05. This is an indication that gender plays an important role in determining the participation and performance of students in Physical Education.

Table 4 shows correlation regression relating to finding the relationship between student engagement and student achievement. The table will contain the correlation coefficient (r) and the p-value that will jointly explain the strength and statistical significance of the relationship between the two variables.

Table 4: Correlation Between Engagement and Achievement

Variables	Correlation (r)	p-value
Engagement & Achievement	0.62	0.001

The correlation analysis shows that the relationship between engagement and achievement is strong ($r = 0.62$, $p = 0.001$). The statistically significant p-value is used to show that the level of student engagement correlates with the achievement in Physical Education.

5. CONCLUSION

The present work has come to a point of finding that gender played a major role in student participation and performance in Physical Education. The descriptive results revealed that female students were more engaged and achieving in comparison with male students. The independent samples t-test results proved the statistically significant gender differences in both achievement and engagement indicating that gender has significant influence on the participation and performance of students. Moreover, the correlation test showed that the relationship between engagement and achievement was significantly positive which indicates that the more the student was engaged the better the performance outcomes. On the whole, the paper has highlighted the need to create positive, inclusive, and encouraging Physical Education settings to improve the engagement and academic achievement among both genders.

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