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Students' Academic Engagement and Learning Outcomes at Higher Secondary Level

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ABSTRACT

Despite a bulk of research in international context investigating the relationship of students' academic engagement with their learning outcomes, little work has yet been done in this area on samples of students in Pakistan. This correlational design study was, therefore, conducted to examine the relationship between students' academic engagement and their learning outcomes in educational context of Pakistan. Data were collected on students' academic engagement, total obtained marks in first year examination and obtained marks in English along with students different demographic variables from 1050 mixed ability students enrolled in year 2021 in different public and private higher secondary level institutions. Both the descriptive and inferential statistical techniques (i.e., Mean, SD and Independent samples t-test) along with Pearson's R correlations and ANOVA were performed to analyze the data. Results showed that secondary school students believe, with a higher level of agreement, that they were emotionally engaged in teaching-learning process for improvement in their learning outcomes. Results also suggested that students' academic engagement have a considerable effect on their learning outcomes. This means that improved academic engagement practices of students lead to an enhanced level of learning outcomes. Results further revealed that students from both the urban and rural area schools and urban and rural residential areas perceived the academic engagement they possessed in majority dimensions as different while in case of school sector and gender perceived the academic engagement in majority dimensions as equal. Moreover, it was found that there were statistically significant differences in students' perception based on their fathers' qualification on three subscales but insignificant differences on whole scale. While in case of mothers qualification these differences were significant on three subscales as well as on whole scale.

Key Words: Student engagement, Academic achievement, Learning outcomes, Higher secondary level, Pupil involvement

Introduction: In recent years, the concept of student engagement has garnered considerable attention worldwide, particularly in the context of improving academic performance and enhancing overall learning outcomes. Engagement in education refers to the degree of attention, curiosity, interest, and passion that student's exhibit when learning or being taught, which extends to the level of motivation they maintain to learn and progress in their academic endeavours. Student engagement is perceived as a critical factor in fostering an environment conducive to learning, encouraging students to participate actively, and promoting high-order thinking skills (Bomia et al., 1997). In this context, student engagement has been described as a multifaceted construct encompassing behavioural, emotional, and cognitive dimensions (Fredricks et al., 2004). Understanding these dimensions is key to comprehending the broader influence of engagement on learning outcomes.

The growing importance of student engagement in educational systems worldwide stems from various historical, economic, and theoretical reasons. Historically, educational institutions have moved away from assuming that students, once admitted, are inherently motivated to

take full advantage of the learning opportunities presented to them. Economic changes, particularly those related to globalization, have further heightened the need for students to develop critical thinking skills, adaptability, and problem-solving abilities. Employers increasingly demand a workforce that can not only handle technical tasks but also think critically, adapt to change, and solve complex problems. Educational institutions, especially colleges and universities, have responded by emphasizing the need to provide students with enriching educational experiences that prepare them for both personal and professional success (Astin, 1984).

Student engagement is closely related to academic achievement, which remains the primary goal for most students and educational institutions. Academic achievement, defined as the attainment of measurable learning outcomes, is often influenced by various factors beyond just the resources provided by the educational institutions. According to Foster (2008), the varying levels of student involvement in academic and extracurricular activities significantly contribute to student performance. In addition, Gunuc and Kuzu (2015) emphasized that areas in which students are more engaged tend to show

higher academic improvements, highlighting the importance of engagement as a focal point in education.

In recent decades, numerous studies have explored the relationship between student engagement and learning outcomes, with researchers increasingly viewing engagement as a multidimensional construct. For instance, Kahu (2013) posited that student engagement is a critical determinant of both learning and academic success. The concept of engagement is seen as encompassing more than just behavioral aspects; it also includes cognitive and emotional components. Researchers like Casuso-Holgado et al. (2013) have taken this concept seriously when examining student engagement at various educational levels, including higher secondary education, which is particularly relevant to the current study.

Student engagement is often described as the emotional and psychological investment that students make in the learning environment. It is influenced by a range of factors, including the relationships students form with their peers, teachers, and the institution itself. These relationships, as Trowler (2010) suggests, play a critical role in shaping students' overall learning experiences. Furthermore, in North American contexts,

student engagement has received significant financial investment, particularly in efforts to improve student participation and retention. The emphasis on engagement is grounded in the belief that students who are more engaged are more likely to succeed both academically and personally.

One of the most influential theories related to student engagement is Astin's (1984) theory of involvement. According to Astin, the more students invest time and energy in their educational experiences, the greater their academic learning and personal development. This theory underscores the importance of creating opportunities for meaningful student involvement, both inside and outside the classroom. Bensimon (2009) echoed this sentiment, suggesting that student engagement fosters emotional connections between students, their peers, and the institution, which in turn creates a sense of belonging and attachment. Such connections enhance students' motivation to learn and contribute to their overall growth and development.

The role of student engagement extends beyond its impact on academic outcomes; it also plays a crucial role in the economic vitality of educational institutions. Student engagement is often linked to institutional reputation and financial support, particularly

from alumni. Markwell (2007) pointed out that students who feel connected to their institutions through meaningful engagement are more likely to remain involved and support the institution in the future. This support is vital for the sustainability and growth of educational institutions, particularly in an increasingly competitive global education market.

Institutional staff also plays a pivotal role in fostering student engagement. Research by Umbach and Wawrzynski (2005) highlights how the attitudes and behaviors of staff members significantly influence student engagement and learning outcomes. Institutions that cultivate an atmosphere of active academic engagement, where faculty members encourage participation and interaction, tend to have students who are more engaged and derive greater benefits from their educational experiences. Groves et al. (2015) further emphasized the importance of student-teacher relationships, noting that the quality of these relationships has a profound impact on student engagement.

Over the years, numerous studies have provided evidence supporting the positive correlation between student engagement and academic success. Kuh et al. (2006) and Trowler (2010) synthesized findings from

thousands of studies that explored the factors contributing to student engagement. These studies found that students who are more engaged tend to achieve better academic outcomes, are more likely to persist through challenges, and are more satisfied with their educational experiences. Despite the wealth of research on student engagement, however, there is still no universally accepted definition of the concept, which remains subject to ongoing debate among scholars.

One of the challenges in studying student engagement is its multidimensional nature. While the most widely accepted view focuses on behaviors—such as the time and energy students devote to academic activities—some scholars argue for a broader definition that includes emotional, cognitive, and agentic dimensions (Sinatra et al., 2015). For example, Wimpenny and Savin-Baden (2013) found that relationships inside and outside the classroom are key drivers of engagement, further complicating the concept. Kahu and Nelson (2017) argued that learning occurs within the boundaries of academic and social interactions, making engagement a complex interplay of multiple factors.

Moreover, student engagement is shaped by various social, psychological, and

environmental influences. Researchers such as Lawson and Lawson (2013) have proposed a holistic view of engagement, which includes behavioral, emotional, and cognitive aspects, as well as the broader social, cultural, and environmental contexts in which students learn. This broader perspective suggests that engagement is not only about what happens within the classroom but also about how students interact with their environment, peers, and instructors.

As educational systems evolve, there is increasing recognition of the need to study engagement within specific cultural and contextual frameworks. In Pakistan, for instance, research on student engagement and its relationship to learning outcomes at the higher secondary level is limited. While numerous studies have explored these issues in other countries, particularly in North America and Europe, there is a significant gap in the literature regarding how engagement influences learning outcomes in Pakistani students. The few studies that have been conducted in Pakistan often focus on university students, leaving a gap in our understanding of engagement at the higher secondary level.

Given this context, the present study aims to address the gaps in existing literature by

exploring the relationship between student engagement and learning outcomes at the higher secondary level in Pakistan. The study seeks to investigate the extent to which students are engaged in their academic activities and how this engagement influences their learning outcomes. Furthermore, it aims to analyze whether student engagement varies based on demographic characteristics, such as gender, school location, and parental education levels. By doing so, the study will provide valuable insights into the role of engagement in shaping academic success in Pakistani schools.

The importance of studying student engagement cannot be overstated, as it is a key factor in improving both individual and institutional performance. For students, higher levels of engagement are associated with better academic outcomes, higher levels of motivation, and a greater sense of belonging. For institutions, fostering engagement can lead to improved retention rates, stronger alumni connections, and a more positive reputation. Ultimately, understanding the dynamics of student engagement can help educators, administrators, and policymakers create more effective learning environments that support student success.

Method: The study employs a quantitative correlational research design to explore the relationship between students' academic engagement and their learning outcomes. This design was chosen to identify and analyze the degree of association between students' engagement in academic activities and their performance outcomes. Rather than manipulating variables, the research investigates the relationships between them to provide a clearer understanding of how one variable may predict another (Creswell, 2014).

The population of the study consisted of male and female students from higher secondary schools and colleges in District Rajanpur. These students were from three Tehsils: Rajanpur, Jampur, and Rojhan. The total population was 13,641 students, including both male and female students from urban and rural areas. Due to logistical constraints, a sample of 1,300 students was selected using a proportionate stratified sampling technique. This approach ensured adequate representation across gender, school location, and school type (urban/rural, public/private).

The primary data collection instrument was the Academic Engagement and Achievement Questionnaire, developed by Chen (2008) and adapted for this study to

measure students' emotional, cognitive, and behavioral engagement. The tool comprised 31 close-ended items on a 5-point Likert scale, with responses ranging from "Strongly Disagree" to "Strongly Agree." The questionnaire was designed based on an extensive review of relevant literature and further refined through discussions with subject matter experts.

To ensure the validity of the instrument, the questionnaire was reviewed by senior teachers who assessed the clarity, relevance, and wording of each item. Adjustments were made based on their feedback, ensuring the content's appropriateness for the study. A pilot test was conducted with a group of students from Rajanpur to identify any comprehension issues with the questionnaire items. Following this, further refinements were made. The reliability of the tool was assessed using Cronbach's Alpha, with the help of IBM SPSS Statistics Software to ensure consistent quality across the measures.

Once approval was obtained from relevant authorities, the questionnaire was administered to the sample of 1,300 students from various higher secondary schools and colleges. The data collection process took approximately one and a half months, with 1,050 students returning completed

questionnaires, yielding a response rate of 80.7%. Data analysis was conducted using SPSS software. Descriptive and inferential statistics were applied to assess the data collected. Correlational analyses were performed to determine the relationship between students' academic engagement and their learning outcomes. Additionally, an independent t-test was employed to examine engagement differences based on gender, school location, and school sector, while a one-way ANOVA was used to explore differences in engagement based on parental education levels.

Results: Analysis of students' demographic information, covering variables such as location, school sector, gender, and residential area. The data shows that the majority of the students (84.3%) come from urban areas, while only 15.7% belong to rural regions. Similarly, the majority of the students (88.5%) attend public schools, with only 11.5% attending private institutions. Gender distribution is relatively balanced, with 53.9% of the participants being male and 46.1% being female. In terms of residential areas, most students (75.8%) come from urban residential areas, while 24.1% live in rural residential regions. This demographic breakdown highlights that the sample is

predominantly urban, public school-attending, and almost equally split by gender as shown in table No. 4.1.

Table 4.1: Analysis of students' demographic information

Variable	Group	Frequency	%age
Location	Urban	885	84.3
	Rural	165	15.7
	Total	1050	100
Sector	Public	929	88.5
	Private	121	11.5
	Total	1050	100
Gender	Male	567	53.9
	Female	483	46.1
	Total	1050	100
Residential area	Urban	796	75.8
	Rural	254	24.1
	Total	1050	100

Data provides an analysis of students' demographic information based on their parents' qualifications. Regarding fathers'

education, 14.4% of the students reported that their fathers are illiterate, while 21.6% have fathers who completed primary education, and 10.2% have fathers with middle school qualifications. The largest group, 24.6%, indicated that their fathers have completed matriculation (high school), followed by 18.9% whose fathers hold an intermediate qualification, and 10.4% whose fathers possess a bachelor's degree or higher.

Similarly, in terms of mothers' qualifications, the majority (29%) of students reported their mothers as illiterate, followed by 26.7% whose mothers had completed matriculation. About 11.9% of students indicated their mothers had a primary education, while 9.9% had middle school-educated mothers. Furthermore, 15.2% of mothers had an intermediate qualification, and 7.3% had a bachelor's degree or higher.

Table 4.2: Analysis of students' demographic information in terms of parental qualification

Variable	Group	Frequency	%age
Fathers' Qualification	Illiterate	151	14.4

Variable	Group	Frequency	%age
	Primary	227	21.6
	Middle	107	10.2
	Matric	258	24.6
	Intermediate	198	18.9
	Bachelor or above	109	10.4
	Total	1050	100
Mothers' Qualification	Illiterate	304	29.0
	Primary	125	11.9
	Middle	104	9.9
	Matric	280	26.7
	Intermediate	160	15.2
	Bachelor or above	77	7.3

Variable	Group	Frequency	%age
	Total	1050	100

Table 4.3 analyzes students’ demographic information in terms of their age and academic performance, including both total marks and English marks. The table shows that most students fall within the age group of 17-18 years (58.1%), followed by 22.3% in the 13-16 age range, and 19.6% who are 19 years or older.

In terms of overall academic performance, the largest proportion of students (45.3%) scored between 351 and 450 marks in class 11th, while 28.6% scored 451 marks or above, and 26.1% scored between 150 and 350 marks. When it comes to marks obtained in the English language, nearly half of the students (48.8%) scored between 51 and 80 marks, while 42.9% of students scored between 81 and 100 marks. Only a small portion of students (8.3%) scored between 30 and 50 marks in English.

Table 4.3: Analysis of students’ demographic information in terms of age and marks obtained

Variable	Group	Frequency	%age
Age group	13-16	234	22.3

Variable	Group	Frequency	%age
	years		
	17-18 years	611	58.1
	19 years or above	205	19.6
	Total	1050	100
Range of total obtained marks in class 11 th	150-350	274	26.1
	351-450	476	45.3
	451 or above	300	28.6
	Total	1050	100
Range of English marks in class 11 th	30-50	87	8.3
	51-80	512	48.8
	81-100	451	42.9
	Total	1050	100

The overall academic engagement score of 3.75 indicates moderate levels of engagement among students. Emotional engagement has the highest mean (4.27), followed by cognitive engagement (4.13), while behavioral engagement shows a lower mean (2.84), indicating a disparity that may

require further investigation and intervention.

Table 4.4: Overall Students’ Perceived Academic Engagement

Sr. no.	Subscale/Scale	Mean	SD
1	Emotional Engagement	4.27	0.85
2	Cognitive Engagement	4.13	0.76
3	Behavioral Engagement	2.84	1.19
4	Total Academic Engagement	3.75	0.93

The correlation between total academic engagement and obtained marks is significant ($r = 0.258, p < 0.001$). This suggests that overall academic engagement, including emotional, cognitive, and behavioral aspects, plays a vital role in determining students' academic performance.

Table 4.5: Total Academic Engagement and Obtained Marks

Scale/Subscale	N	Mean	SD	r-value	p-value
Total Academic Engagement	500	3.75	0.93	0.258	<0.001

Scale/Subscale	N	Mean	SD	r-value	p-value
Learning Outcomes	500	66.27	8.77		

This correlation analysis reveals significant relationships between various factors influencing academic engagement. All factors, including emotional engagement ($r = 0.189, p < 0.001$) and participation in extracurricular activities ($r = 0.174, p < 0.001$), show positive correlations, highlighting their importance in promoting students' overall engagement.

Table 4.18: Correlation Analysis of Various Factors Influencing Academic Engagement

Variable	N	r-value	p-value
Emotional Engagement	500	0.189	<0.001
Behavioral Engagement	500	0.097	0.003
Perception of School Environment	500	0.147	<0.001
Socioeconomic Status	500	0.167	<0.001
Parental Education Level	500	0.142	<0.001
Participation in	500	0.174	<0.001

Variable	N	r-value	p-value
Extracurricular Activities			

Discussion: This quantitative correlation design study mainly focused on examining the relationship between students' academic engagement and their learning outcomes at higher secondary level and to discover how the direction and/or strength of this relationship changes by students' gender and their school sector. The findings of this study, drawn from a sample higher secondary school/college students in Pakistan, are in line with earlier studies (i.e., Bomia et al., 1997; Fredricks et al., 2004; Markwell, 2007; Groves et. al, 2015) reported somewhere else in international literature, that students' perceived academic engagement is positively related with their learning outcomes and plays a vital role in their achievement as well. It means that with the increase in students' engagement their

learning outcomes increases. When combined with an examination of the facts in the literature of the past, it is possible to find that analysts have done research at a regional or university level. When examining the results of external research with today's observations, it was found that there were fewer similarities with the results than a few inconsistencies. A study by Gunuc (2014) revealed that there is a strong mathematical relationship between high student engagement and academic fulfilment or learning outcomes. In addition, the same author also noted that the mental capacity of student engagement has a positive relationship with student engagement above all else.

A study by Kuh (2001) concluded that student interactions have a positive effect on academic achievement and, more importantly, campus interaction has a higher correlation with academic success than classroom involvement. In this study, it was

found that student interactions had a higher affinity for academic achievement and psychological engagement which was a positive correlation of weekly but the number of behavioral involvement was negatively correlated. One of the most common findings in a particular study was the association with psychological interactions.

The findings from the questionnaire showed that all of the students accepted that emotional engagement, cognitive engagement and behavioural engagement plays a vital role in academic engagement at higher secondary level. It was found that there was inter-correlation between students' perceived total academic engagement and their learning outcomes. This analysis was done using Pearson correlation coefficient method. It was found that the results of One-Way Analysis of Variance [ANOVA] that was performed to measure father qualification-based differences in students'

perceived academic engagement in terms of total scale score along with its three subdivisions namely, emotional involvement, psychological involvement and behavioral involvement. Results show statistically significant differences in students' perception based on their fathers' qualification on three subscales but insignificant differences on whole scale. But in case of mothers qualifications these differences were significant on three subscales as well as on whole scale.

The vast majority of scientists have found that mental commitment is more important than academic achievement than any other. In the current review, key relationships were found within the campus as well as class involvement and psychological involvement (Greene et al., 2008). An experiment led by Nauffal (2012) came to the conclusion that emotional involvement involves a high degree of relationship basically with academic success. However, according to

the current review, strong relationships were not found, instead they separated large-scale relationships.

Conclusion: On the basis of obtained findings it is concluded that,

- Secondary school students demonstrated high levels of emotional and cognitive engagement, both of which significantly contributed to improved learning outcomes.
- Behavioral engagement was reported at a lower level, and it showed a weak negative correlation with learning outcomes, indicating that deeper engagement beyond attendance and compliance is necessary for better academic performance.
- Overall, students' total academic engagement was found to have a significant effect on learning outcomes, with emotional and

cognitive engagement being the most influential factors.

- Students from urban and rural schools, as well as those from public and private schools, exhibited differences in their perceptions of academic engagement, suggesting that location and school type influence engagement experiences.
- Statistically significant differences were found in students' perceptions of academic engagement based on their parents' educational qualifications, particularly in terms of their mothers' education, which had a consistent impact on students' engagement levels.

Recommendations: Following recommendations were made from this study.

- Administrators or associated academic agencies have to enhance awareness of the significance of

teachers' role in promoting college students' faculty engagement beginning with the subsequent measures.

- Counseling and training of parents, especially in rural areas, is need of the hour. Literate parents significantly impact the total learning outcomes of the students as compared to illiterate ones. Study also confirms that students with educated parents showed impeccable performance and outshined the students with uneducated parents.
- Environment of the school should be welcoming, teachers and principals must be friendly towards students as findings of the study reveal that when there is congenial environment at school, the students are emotionally comfortable and there total academic results are good.
- Related groups need to formulate policies to clearly reflect the most

important role of teachers — to promote student participation in college. Although the regulations applicable to this role have been implemented, to date, there has been no concrete and clear definition of the role of role for improving student engagement.

- Finally, this research was limited to students of higher secondary schools and colleges in one district only. Future researchers can compare views of students from different districts with larger sample sizes.

Limitations: The following limitations were identified in this study:

- The study was conducted in a limited geographical region, which may not represent the perceptions of students in other areas, thereby limiting the generalizability of the findings to a broader population.

- Since the study employed a cross-sectional design, it captured students' perceptions at a single point in time. This approach does not account for changes in academic engagement or learning outcomes over time.
- The study relied on self-reported data from students, which may be subject to bias, such as social desirability bias or inaccurate recall, potentially affecting the validity of the results.
- The study specifically focused on students at the higher secondary level, and the findings may not be applicable to students at other educational levels, such as primary or tertiary education.
- The study examined only a few dimensions of academic engagement (emotional, cognitive, and behavioral) and their impact on learning outcomes. Other factors

such as social, cultural, or institutional influences on academic engagement were not explored.

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