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THE ROLE OF STUDENT ENGAGEMENT IN DEVELOPING GENERIC SKILLS AMONG UNDERGRADUATES

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ABSTRACT

In tertiary education, student engagement is widely recognized as the most essential component because it fosters critical thinking and work-related generic skills among undergraduates, preparing them for diverse professional challenges. This study aims to explore the role of various dimensions of student engagement in the development of generic skills among undergraduates. A stratified random sampling technique was employed to collect data from 617 students enrolled in public-sector universities in Sindh province, Pakistan, using a questionnaire survey. Findings reveal that students not only reported low levels of engagement across emotional, cognitive, behavioral, and social dimensions but also communicated low levels of generic skills. This study also found that all four dimensions of student engagement have made a significant contribution towards the development of generic skills. Among these dimensions, emotional engagement was identified as the strongest effects, stressing the significance of students' affective reactions to learning experiences, motivation, interest, enjoyment, and integration in the academic surroundings in tertiary education. The study submits that university administration should promote effective student engagement policies for observable activities and tasks, increase motivation, interests, manage emotions, improve teacher and peer interactions by adapting deep learning strategies and reflective learning techniques, which leads to higher levels of generic skill development.

Keywords: Student engagement, emotional engagement, cognitive engagement, behavioral engagement, social engagement, and generic skills development

Introduction

Around the globe, tertiary education institutions are undergoing substantial transformation on account of the effects of globalization, technological development, and knowledge-based economies. The stakeholders expect tertiary education institutions to go beyond their primary role of knowledge-providers and be the true cultivators of students' wider competencies, which may include communication skills, teamwork, critical thinking, innovation, and problem-solving capabilities (Tuononen et al., 2025). This is the significant shift from the conventional approach that existed until the last century. In modern tertiary education environments, students are required to excel academically in substantial terms and be able to handle laborious coursework, collective projects, technical integration, and experiential learning activities. Globally, tertiary education systems emphasize student-centered learning as a vital strategy for refining academic achievements and graduate attributes. Global organizations, for instance UNESCO, OECD, and the World Bank highlight that tertiary education must endeavor for advancing holistic competencies, which support the needs of the current global labor market.

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This change reveals rising recognition that conventional pedagogies are inadequate for advancing important skills required in the 21st century economy (OECD, 2019).

Studies show that passive learning environments are mostly unsuccessful in cultivating critical thinking skills and practical capabilities (Prince, 2004). Resultantly, modern educational restructuring emphasizes student-centered learning that encourages active-participation, teamwork, and experiential learning (Guo et al., 2025). Consequently, institutions progressively implement interactive pedagogical approaches e.g. collaborative learning, experiential learning, project-based learning, and technology-enhanced education. In spite of these expansions, numerous challenges continue to dominate globally. A key concern is the large gap in what university graduates learn and adopt and what the industry demands; for instance communication, teamwork, leadership, and problem-solving skills (Jackson, 2016). Another concern relates to student disengagement that has a negative effect on academic accomplishment, retention, and learning outcomes (Fredricks et al., 2004). In underdeveloped states like Pakistan, the effects of these challenges are remarkably noticeable. Pakistani tertiary education sector has witnessed rapid growth in the last 20 years under the aegis of the Higher Education Commission (HEC). Though this growth has improved tertiary education access, some studies have highlighted drastic challenges regarding the quality of learning outcomes and the graduate employability (Manan et al., 2021). These challenges underline the need for the strict implementation of pedagogical methods, which can encourage active engagement and learning.

The construct of student engagement has been extensively investigated in Western tertiary education systems; however, similar focus is missing with reference to underdeveloped states. Numerous tertiary education systems in developing states still depend greatly on traditional mode of pedagogies that restrain opportunities for active student participation and experiential learning (OECD, 2019). The tertiary education sector in Pakistan has swelled meaningfully since the genesis of the new century, mainly because of the reforms initiated by the HEC. In spite of this growth, employers often complain about the lack of essential generic skills, such as communication, teamwork, and critical thinking among the university graduates (Manan et al., 2021). The current research highlights that conventional teaching-learning practices in Pakistani universities add to this skills-gap. Conventional teaching-learning frequently limits the growth of these essential skills and leave graduates with convincing theoretical education but deficient in practical capabilities that are required for current job-market (Khan, 2022). Additionally, Pakistani tertiary education institutes confront structural challenges, for instance large classroom size, deficient technological infrastructure, and inadequate faculty training for student-centered teaching-learning methods (Younus & Sajjad, 2019). All these factors can diminish opportunities for useful engagement and skill-development among students. Though current studies have started to investigate student engagement in Pakistani tertiary education institutions, most of them address mainly academic performance rather than wider range of capabilities, for instance generic skills. Therefore, it leaves an important gap in realizing how engagement can influence the development of transferable skills among university students in the context of Pakistan.

In spite of increasing interest in student engagement worldwide, the empirical studies investigating its association with the development of generic skills remain inadequate in underdeveloped states, including Pakistan (Khan, 2022; Manan et al., 2021; Younus & Sajjad, 2019). Majority of present studies address academic achievement rather than wider domain of competencies, such as generic skills. Furthermore, there is also inadequate empirical evidence on how various dimensions of engagement affect the growth of generic skills in Pakistani universities. This particular gap underlines the need for systematic enquiry into the association

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between student engagement and skill development using the case of Pakistan. Hence, the current study aspires to observe the impact of student engagement on students' generic skills in Pakistani tertiary education institutions. By investigating the association between engagement dimensions and skill development, this study offers a contribution towards theoretical and practical understanding of effective teaching-learning approaches in the context of Pakistani universities. Moreover, it offers evidence-based recommendations for the policy-elite and educators who aim to improve undergraduate-employability and learning outcomes.

Conceptualization of Student Engagement and Generic Skills

Student engagement denotes the devotion of students' time and effort towards academically useful activities and the institutional practices, which help such involvement (Kuh, 2009; Guo et al., 2025). Godsk et al. (2025) define student engagement as not only students' behaviors and their involvement in university activities, but also what students feel, think and behave within the teaching-learning process. Traditionally, engagement is considered as behavioral, emotional, and cognitive type of engagements (Kahu, 2013) but later it was also conceptualized as a social engagement with teachers and peers (Zhoc et al., 2019). The National Survey of Student Engagement (NSSE) (2025) further operationalizes this concept by offering a framework for the measurement of the quality of students' learning experiences like academic challenge, combined learning, student–faculty interaction, and supportive campus environments. Current research on tertiary education intellectualizes student engagement as a multifaceted variable covering cognitive, behavioral, emotional, and social dimensions (Fredricks et al., 2004; Bergdahl et al., 2024), which considerably affect academic success, student retention, and skill development in universities (Deep et al., 2025).

In terms of tertiary education, generic skills refer to transferable capabilities, which help graduates perform efficiently in multidimensional professional surroundings. These capabilities comprise critical thinking, communication and problem-solving skills, teamwork, leadership, and adaptableness (Barrie, 2006; Jackson, 2016). Current studies demonstrate that engagement-based pedagogy considerably enhances the growth of these capabilities by inspiring students to use knowledge in collaborative and experiential learning situations (Shomotova & Ibrahim, 2025). In underdeveloped states such as Pakistan, the expansion of generic skills is of vital importance for tertiary education institutions. Bratianu and Vatamanescu (2017) define that generic skills are considered 'core skills' or 'soft skills' that a person must possess for the professional and career life. The generic skills can be developed as a result of several efforts exerted by students themselves under the guidance of teachers or experts (Jaaskela et al., 2016). Generic skills also refer to motivation, values, and attitudes like intercultural awareness, and respect for others (Chan & Fong, 2018). With higher level of generic skills, graduate students have better chances for employability consistent with students' attitudes, motivation, and their education levels (Tuononen et al., 2025). According to Ravenswaaij et al. (2022), the term generic skills refers to students' capability to utilize specific knowledge to perform tasks, such as laboratory skills, research skills, and motivating skills.

Theoretical Perspectives on Student Engagement and Generic Skills

In this context, student engagement theory stands out to be one of the most influential theoretical approaches, especially the work of George D. Kuh carried out through the NSSE survey in the USA (NSSE, 2025). The current study uses three complementary perspectives as its theoretical foundation i.e. Kuh's student engagement theory (Kuh, 2003), Astin's (1985) student involvement theory, and constructivist learning theory (Vygotsky, 1978). All these frameworks elucidate how students' dynamic participation in academic activities improves learning outcomes and influences the expansion of students' generic skills i.e. critical thinking, communication, teamwork, and problem-solving skills. Combining these theories offers an

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extensive lens to understand how engagement processes affect development of students' academic and professional skills in tertiary education institutions.

The perspective of Kuh's (2003) student engagement theory has turned out to be one of the most significant theoretical frameworks in tertiary education research on account of its close association with academic achievement, student persistence, and learning outcomes. This theory achieved distinction through the work of G.D. Kuh, who described student engagement as the amount of time and effort students dedicate towards academic activities, which are empirically associated with required learning outcomes and the institutional practices that inspire such participation (Kuh, 2003; Kuh, 2009). The NSSE further operationalizes this theory by offering a framework for the measurement of the quality of students' learning experiences across tertiary education institutions (Trogden et al., 2023, NSSE, 2025). The NSSE recognizes important engagement indicators, for instance academic challenge, combined learning, student–faculty interaction, and supportive campus environments (Kuh, 2009). The theoretical perspective of Astin's (1985) theory of student involvement signifies involvement as the "amount of physical and psychological energy that students devote to their academic experiences" (p. 518). It proposes that students learn and progress efficiently when they enthusiastically take part in academic activities rather than inactively collecting information. Astin (1985) also believes that the efficacy of educational experiences is dependent mainly on the degree of student involvement in activities i.e. both academic and co-curricular. This theoretical perspective makes five essential claims: involvement obliges the investment of energy i.e. both physical and psychological; it involves students' varied participation levels; it contains both quantitative and qualitative features; the quality and quantity of involvement are directly proportional to learning and development; educational policies and practices are more useful when they promote advanced levels of student involvement (Astin, 1985).

The constructivist learning theory offers a supplementary theoretical perspective to understand how engagement can contribute to students' learning and skill development. Constructivism postulates that knowledge is dynamically constructed by learners by their interaction with surroundings rather than passive transmission by teachers (Vygotsky, 1978). Constructivists believe that learning ensues when students exhibit active engagement in inquiry, problem-solving skills, teamwork, and reflection. Constructivists emphasize numerous important principles, which are strongly associated with student engagement approaches. Learning is an active process requiring learners to play active role during educational experiences; knowledge is constructed through social interaction; learning is dependent on contexts and is affected by true experiences. In tertiary education, constructivist pedagogies comprise combined learning, problem-based learning, experiential learning, and project-based learning.

This study proposes the combination of all above theories. This broad collective framework helps to understand how engagement affects the growth of students' generic skills. Astin's theory highlights the significance of student involvement in educational experiences, underlining the behavioral dimension of participation. The engagement theory of Kuh incorporates institutional practices and multifaceted engagement components: emotional, cognitive, behavioral, and social. Moreover, constructivist-learning theory adds to these frameworks by supporting how active engagement in learning activities may lead to useful knowledge construction and skill development. Collectively, these theoretical approaches submit that when students actively take part in group-learning environments, communicate with peers and teachers, and participate in cognitively challenging tasks, they are highly expected to grow the generic skills essential for academic accomplishment and professional capability. This combined theoretical framework offers the groundwork for observing the

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effect of student engagement on generic skills development among Pakistani university students.

Dimensions of Student Engagement and Hypotheses Development

The research between 2020 and 2025 has witnessed increasing prominence on the association between development of student generic skills and student engagement. Generic skills comprise capabilities, for instance communication, critical thinking, teamwork, leadership, and adaptableness. Current research reveals that environments having engagement-based learning considerably improve the growth of these capabilities (Guo et al., 2025). Studies have pointed out that experimental learning-environments like project-based learning, group-learning, and innovation-labs advance critical thinking, creativity, and communication skills of students (Trogden et al., 2023; Scheuring & Thompson, 2025). Kuh (2003, 2009) claimed that learning outcomes caused by enhancement of students' active participation in curricular and co-curricular activities. Likewise, researchers investigating student engagement and generic skills highlight that engagement in curricular and co-curricular activities plays an important role in training students for the job-market, and underline that actively participating and involving students in group-learning environments acquire more convincing professionally-oriented skills like communication, teamwork, and leadership capabilities (Shomotova & Ibrahim, 2025). Moreover, technological advancement also contributes to the development of engagement-based learning practices (Godsk et al., 2025). Additionally, recent studies recommend that incorporating artificial intelligence into tertiary education can help the growth of advanced skills (Deep et al., 2025). Collectively, these findings underline that student engagement is an important factor in determining students' generic skills development and making them ready for professional lives.

Recent research supports the importance of student engagement in refining tertiary education outcomes. Engagement has been acknowledged as an important interpreter of academic achievement, retention, and individual growth among university students. Researchers highlight that when students are actively engaged in learning activities and communicate with teachers and peers, they foster deeper intellectual capabilities and better motivation level (Godsk et al., 2025). Studies highlight that universities that encourage cooperative learning, teacher–student communication, and active teaching-learning approaches can create higher educational results and more capable graduates (Trolian, 2023). In spite of its wide-ranging recognition, the perception of student engagement is still theoretically complex and multifaceted. Researchers highlight that engagement may not be restricted to classroom participation; rather it comprises versatile emotional, psychological, and social facets of learning experiences (Kahu, 2013). The modern literature theorizes student engagement as a multifaceted concept covering emotional, cognitive, behavioral, and social dimensions. The said dimensions signify diverse aspects of students' participation and interaction in the learning atmosphere. There are multiple dimensions of engagement: behavioral engagement (involvement in academic activities), emotional engagement (ownership and interest), cognitive engagement (deep learning and critical thinking) (Maroco et al., 2016), and social engagement (communication with peers and teachers) (Zhoc et al., 2019). All these dimensions jointly influence academic and individual growth of students.

The dimension of behavioral engagement denotes students' observable participation in curricular activities, for instance class-attendance, task-completion, participation in discussions, and involvement in group learning (Fredricks et al., 2004). Actively-engaged students in teaching-learning activities and groups-tasks determine advanced level of motivation and academic accomplishment (Carini et al., 2006). Furthermore, collaborative learning activities inspire students to advance interpersonal capabilities and teamwork skills.

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Researchers also highlight that when students participate actively in teaching-learning activities, their perceived gains in generic skills, like communication, teamwork, and analytical reasoning meaningfully improve (Maloshonok & Shcheglova, 2023). Hence, behavioral engagement offers a solid basis for skill acquisition by inspiring students to take active part in educational activities. Building upon the theoretical perceptions of both student engagement and involvement, behavioral engagement is expected to have positive effect on the growth of generic skills.

H1: Behavioral engagement has significant positive effects on students' generic skills development in tertiary education.

The dimension of emotional engagement denotes students' affective reactions toward learning experiences, such as motivation, interest, enjoyment, and integration in the academic surroundings (Fredricks et al., 2004). Researchers point out that students who have strong attachment with their academic institutions feel more motivated for participating actively in learning activities and attain improved academic outcomes (Kahu, 2013). Current literature highlights that emotional engagement influences meaningfully to students' learning satisfaction, academic performance, and retention in tertiary education (Anim-Wright, 2024). On the basis of these theoretical arguments, emotional engagement is likely to have positive effects on the development of generic skills.

H2: Emotional engagement has significant positive effects on students' generic skills development in tertiary education.

The dimension of cognitive engagement denotes the level of intellectual investment students establish during the course of their learning processes including critical thinking, deep learning strategies, problem-solving, and reflective learning (Fredricks et al., 2004). Current research underlines that cognitive engagement encourages higher-order thinking and intellectual curiosity that are vital for advancing multifarious capabilities mandatory for current job-markets (Trolian, 2023). Research has underlined that cognitively engaged students reveal higher level of persistence in resolving academic challenges and show stronger analytical capabilities. On the basis of these theoretical insights, cognitive engagement is likely to influence significantly to the development of generic skill.

H3: Cognitive engagement has significant positive effects on students' generic skills development in tertiary education.

The dimension of social engagement highlights the significance of connections between students, teachers, and academic groups. It stresses the participation of students in combined learning, peer discussions, and group-tasks that enable knowledge-exchange and develop interpersonal skills. Researchers show that social engagement improves students' sense of belonging in academic institutions that have positive influence on their enthusiasm and determination (Fredricks et al., 2004). Bergdahl et al. (2024) define student social engagement as positive attitudes of students during the collaborative activities with their peers while negative attitudes of social engagement include lack of interest in-group work and not paying attention to the ideas of others. In the words of Shomotova and Ibrahim (2025), social engagement is active collaboration and interactions with other students to learn inside and outside of the classes. Several studies explored a strong association between students' social engagement with peers and teachers and generic skills development (Fredricks et al., 2004; Bergdahl et al., 2024; Shomotova & Ibrahim, 2025; Zhoc et al., 2018). On the basis of these arguments, social engagement is likely to improve generic skills of university students.

H4: Social engagement has significant positive effects on students' generic skills development in tertiary education.

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Collectively, four dimensions of student engagement offer a broad framework for identifying how students interact with their learning environments and how such interactions affect educational outcomes. The proposed conceptual framework as shown in Figure-1 suggests that four-dimensional student engagement: behavioral, emotional, cognitive, and social engagement act as independent variables affecting students' generic skills development in institutions of tertiary education.

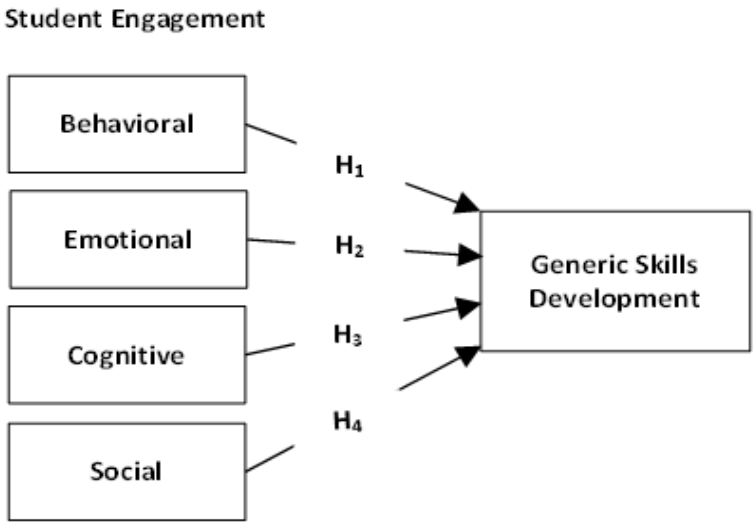

Figure 1: Hypothetical Conceptual Framework

Research Methodology

Research Design

The current study uses a quantitative research approach to observe the impact of student engagement on the development of generic skills among Pakistani university students. The appropriation of the quantitative research design for this study is based on that fact that it helps researchers to evaluate the effect of predictor variables using statistical methods and to generalize findings across a larger population (Creswell & Creswell, 2023). This study employs a causal research model and cross-sectional survey, where data are gathered from study-participants at a single point in time.

Research Tool and Measures

For the current study, data are gathered employing a structured questionnaire survey. In educational research, surveys are employed as they allow researchers to gather standardized data from a huge number of respondents competently (Creswell & Creswell, 2023). Items determining student engagement are derived from well-known validated engagement instruments, like the NSSE survey questionnaire, higher education student engagement scale (Zhoc et al., 2018), and the university student engagement inventory (Maroco et al., 2016). The final version of the student engagement questionnaire comprises 20-item, five-items for each dimension of engagement: behavioral, emotional, cognitive, and social. The items measuring generic skills are derived from graduate skills and employability research. For this purpose, items related to the generic skills development were adapted from the 'student engagement questionnaire' developed by Kember and Leung (2009) and the subset generic skills part from the boarder scale of 'course experience questionnaire' developed by Wilson et al. (1997). All questionnaire items are determined by using a five-point Likert scale, ranging from: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. In social science research, Likert scales are extensively employed since they allow investigators to attain participants' perceptions and attitudes to particular variables.

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To ascertain the reliability of the scale, Cronbach's alpha coefficients were determined. Reliability denotes the consistency and stability of a measurement instrument (Creswell & Creswell, 2023). Cronbach's alpha values range from 0 to 1, with higher values signifying greater reliability. Universally recognized guidelines suggest that $\alpha \geq 0.70$ shows average reliability, $\alpha \geq 0.80$ show good reliability, $\alpha \geq 0.90$ show excellent reliability (Hair et al., 2019). Each construct is analyzed separately. Table-1 indicates for all 20 items of student engagement questionnaire ($\alpha = .95$, $N = 617$); while for the dimension cognitive engagement ($\alpha = .91$, $N = 617$), followed by the dimension social engagement ($\alpha = .90$, $N = 617$), behavioral engagement ($\alpha = .89$, $N = 617$), and emotional engagement ($\alpha = .88$, $N = 617$). For all 20 items of generic skills development ($\alpha = .91$, $N = 617$) demonstrated high internal consistency. All these values represent that the questionnaire is highly reliable.

Table 1: Reliability Statistics

Name of Factor	Cronbach's Alpha	No. of Items
Cognitive Engagement	0.912	05
Emotional Engagement	0.889	05
Behavioral Engagement	0.894	05
Social Engagement	0.905	05
Overall Student Engagement	0.950	20
Students' Generic Skills Development	0.918	20

Data Analysis Techniques

The data gathered through the questionnaire are examined employing Statistical Package for the Social Sciences (SPSS) software version 29.0. This study employs descriptive statistics to sum up the demographic features of the study-participants and the distribution of responses for individual variable. These statistics include percentage, mean, frequencies, and standard deviation. Descriptive analysis offers a summary of the collected sample and ensures to recognize common trends in the data (Creswell & Creswell, 2023). Pearson correlation analysis is carried out to observe the associations among the study-variables. Correlation coefficients show the strength and direction of associations between student engagement dimensions and development of generic skills. Multiple regression analysis is employed to test the hypotheses and observe the effects of student engagement dimensions on generic skills development. In the regression model, generic skills development is the dependent variable whereas emotional engagement, cognitive engagement, behavioral engagement, and social engagement are the independent variables. Regression analysis helps the researcher to influence the extent to which each engagement dimension affects generic skill development while controlling for the effects of other variables (Hair et al., 2019).

Demographic Profile

The study-population comprises of undergraduate students enrolled in three Pakistani public sector general universities. This study employed a sample size of 617 students by applying a stratified random sampling technique to confirm representation of students from various universities, academic programs, and study-levels where the study-population is separated into appropriate strata, for instance, gender, universities, and academic levels. This method ensures the minimization of sampling bias. University students from the province of Sindh-Pakistan are called to take part voluntarily. Table-2 exhibits the participants' demographic characteristics. With reference to gender distribution, males (n = 323, 52.4%) represented in large proportion as compared to female participants (n = 294, 47.6%). The students' year of study enrolled in the universities represents juniors (n = 219, 35.5%) in large proportion, followed by seniors (n = 206, 33.4%), sophomores (n = 104, 16.9%), and freshmen (n = 88,

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14.3%). Regarding the students' enrolled in various universities, the large proportion belong to the University of Sindh (n = 273, 44.2%), followed by the GC University Hyderabad (n = 178, 28.8%), and Shah Abdul Latif University Khairpur (n = 166, 26.9%).

Table 2: Demographic Profile

Type	Category	Frequency	Percentage
Gender	Male	323	52.4
	Female	294	47.6
	Total	**617**	**100.0**
Year of Study	Freshmen	88	14.3
	Sophomore	104	16.9
	Junior	219	35.5
	Senior	206	33.4
	Total	**617**	**100.0**
University	University of Sindh, Jamshoro	273	44.2
	GC University, Hyderabad	178	28.8
	Shah Abdul Latif University, Khairpur	166	26.9
	Total	**617**	**100.0**

Data Analysis

To test the hypotheses, Pearson correlation coefficient and multiple linear regression were applied to examine the role of student engagement in developing generic skills among undergraduates. Pearson correlation coefficients are demonstrated in Table-3 together with the corresponding values of mean and standard deviation. Results show that generic skills development among undergraduate is significant and shows strong positive association with all four dimensions of student engagement. For example, social engagement, $r(615) = .67$, $p < .001$), behavioral engagement, $r(615) = .74$, $p < .001$), cognitive engagement, $r(615) = .72$, $p < .001$), and emotional engagement, $r(615) = .75$, $p < .001$). Moreover, the mean and standard deviation scores for generic skills development with mean score of 2.85 on the five-point scale (SD = 0.59), suggesting that majority of the students are lacking in generic skills. For all four dimensions of student engagement also suggest that majority of the students are less engaged in academic activities at all three universities of Sindh province. For example, behavioral engagement with mean score of 2.43 on the five-point scale (SD = 0.63), emotional engagement with mean score of 2.30 (SD = 0.62), cognitive engagement with mean score of 2.25 (SD = 0.67), and social engagement with mean score of 2.18 (SD = 0.66). This suggests that majority of the students are disengaged because they tend towards the disagreement of the various statements included in the engagement questionnaire.

Table 3: Descriptive Statistics and Correlation Matrix

Variables	1	2	3	4	5	*M*	*SD*
1 Generic Skills Development	–					2.851	0.593
2 Social Engagement	.676***	–				2.187	0.663
3 Behavioral Engagement	.747***	.560***	–			2.432	0.639
4 Cognitive Engagement	.720***	.639***	.641***	–		2.256	0.674
5 Emotional Engagement	.755***	.582***	.701***	.637***	–	2.302	0.620

Note: N = 617. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, *n.s* = no significance (2-tailed)

Furthermore, multiple linear regression test was applied to examine the role of student engagement in developing generic skills among undergraduates. According to Hair et al. (2019), multiple regression clarifies how much inconsistency in dependent variable may be

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justified by the independent variables and what may be the comparative role of every independent variable in the direction of the dependent variable. The generic skills development serves as dependent variable and four dimensions of student engagement: social, behavioral, cognitive, and emotional, were used as independent variables in regression model. To assess the proportion of total variance and the model predication accuracy explained by four dimensions of student engagement, the adjusted R^2 was calculated. The large value of R^2 assumes the best model prediction accuracy (Hair et al., 2019). Table-4 demonstrates that the value of adjusted R^2 was 0.730, which suggests that 73% variation in generic skills development among undergraduates was due to four dimensions of student engagement.

Table 4: Multiple Regression Model Summary

R	*R²*	*Adjusted R²*	Std. Error of the Estimate
.855[a]	.732	.730	.30823

a. **Predictors:** (Constant), social, behavioral, cognitive, emotional
b. **Dependent variable:** generic skills development

Note: $N = 617$.

As advised by Hair et al. (2019), to examine the overall statistical significance of the proposed regression model to predict generic skills development based on social, behavioral, cognitive, and emotional engagement, Analysis of Variance (ANOVA), and F statistics were calculated. Table-5 reveals that the proposed model was a significant predictor of generic skills development, $F(4, 612) = 417.243$, $p < .001$, $R^2 = .73$, indicating that model explained 73% of the variance in generic skills development.

Table 5: Summary of ANOVA in Regression Model

Model	Sum of Squares	df	Mean Square	*F*	*p*
Regression	158.564	4	39.641		
Residual	58.144	612	.095	417.243	.001[a]
Total	216.708	616	-		

a. **Predictors:** (Constant), social, behavioral, cognitive, emotional
b. **Dependent variable:** generic skills development

Note: $N = 617$.

On the recommendations of Hair et al. (2019), for deciding which of independent variables exerted more impact on generic skills development of the undergraduates, the standardized beta (β) values were used. Hair et al. (2019) suggested the threshold values of beta for determining the nature of the impact. For example, beta values ($-0.10 < \beta < 0.10$) is considered as low impact, ($-0.40 \leq \beta \leq -0.11$; $0.11 \leq \beta \leq 0.40$) shows moderate impact, and beta values ($\beta < -0.60$ or $\beta > 0.60$) suggests strong impact. Addition to beta values, t-test proposed in multiple regression suggests the significance of the variables in the model. Table-6 reveals, all four predictors include behavioral engagement ($b = 0.29$, $t = 8.99$, $p = .001$), emotional engagement ($b = 0.30$, $t = 9.32$, $p = .001$), cognitive engagement ($b = 0.22$, $t = 6.92$, $p = .001$), and social engagement ($b = 0.21$, $t = 7.13$, $p = .001$) were significant positive predictors of generic skills development among undergraduates. The above results reveal that all four dimensions of student engagement exerted moderate influence on generic skills development. However, emotional engagement, and cognitive engagement play important role in fostering generic skills development among undergraduates. Figure-2 represents multiple regression model with standardized beta coefficients.

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Table 6: Summary of Multiple Regression Coefficient

Variable	*B*	*SEB*	*β*	*t*	*p*
(Intercept)	0.158	.054		2.93	.004
Behavioral Engagement	0.264	.029	0.285	8.99	<.001
Emotional Engagement	0.284	.031	0.297	9.32	<.001
Cognitive Engagement	0.191	.028	0.217	6.92	<.001
Social Engagement	0.183	.026	0.205	7.13	<.001

a. DV: Generic Skills Development

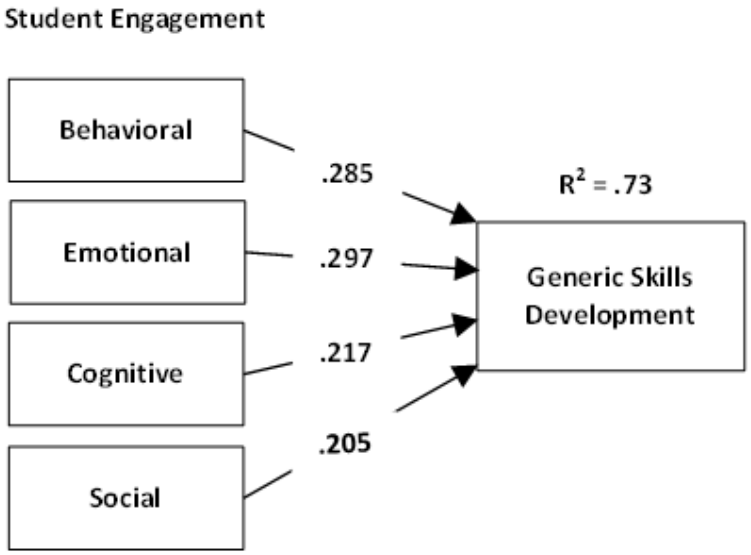

Figure 2: Multiple Regression Model with Standardized β Coefficients

Discussion and Implications

The main objective of the current study was to investigate the effects of student engagement on the development of generic skills among Pakistani university students. Building on the theoretical foundations of student engagement theory (Kuh, 2009), student involvement theory (Astin, 1985), and constructivist learning theory (Vygotsky, 1978), the present study examined how behavioral, emotional, cognitive, and social engagement contribute to students' attainment of transferable capabilities e.g. communication, teamwork, problem-solving, and critical thinking. The study findings offer empirical evidence advocating the theoretical assumption that the active participation of students in academic activities considerably improves learning outcomes and skill development.

Descriptive analysis of the study variables indicates that students report low to moderate levels of engagement across emotional, cognitive, behavioral, and social dimensions of engagement. The mean scores signify that students usually perceive themselves as less engaged in teaching-learning activities in their respective universities. Likewise, students report low to moderate levels of generic skills development. Nevertheless, comparatively lesser scores are detected for self-directed learning skills, creative thinking skills, and communication skills, signifying that these capabilities may involve further emphasis in tertiary education curricula. The current findings are aligned with previous Pakistani studies conducted by Manan et al. (2021), Khan (2022), and Younus and Sajjad (2019) who found that undergraduates enrolled in the Pakistani universities lack essential generic skills such as communication, teamwork, and critical thinking suggesting that there are several issues in the existing tertiary education system. Younus and Sajjad (2019) identify the reasons observing that large classroom size, deficient technological infrastructure, and inadequate faculty training for student-centered teaching-learning methods are major factors that creates hindrance in developing student generic skills.

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These findings underline the significance of investigating how various dimensions of student engagement cause the development of generic skills in university students.

In general, the results reveal that all four dimensions of student engagement have significant effects on generic skills development among university students. The regression analysis demonstrates that student engagement explains a considerable amount of the variance in generic skills development, emphasizing the significance of engagement-based learning environments at tertiary education level. These findings correspond to existing research demonstrating that engagement is an important factor in determining students' academic experiences and learning outcomes or generic skills (Carini et al., 2006; Kuh, 2009). Out of four engagement dimensions observed in this study, emotional engagement emerges as the most powerful predictor of generic skills development. This findings tally with the theoretical perspective of Kahu (2013), who emphasizes that emotional engagement, is a crucial factor in determining students' motivation and learning experiences in tertiary education. Kahu's (2013) conceptual framework suggests that students' emotional linkage to their learning environment affects their willingness to devote efforts in academic responsibilities that ultimately influences their learning outcomes. Furthermore, scholars point out that strong emotional associations with teachers and peers, add meaningfully to students' emotional engagement and academic accomplishment (Tinto, 2012; Anim-Wright, 2024). Regarding the growth of generic skills, emotionally-engaged students are expected to enhance confidence, communicate successfully with teachers and peers, and take part in group learning activities. These experiences influence the expansion of leadership, interpersonal communication, and teamwork capabilities that are broadly established as important qualities for graduate employability (Barrie, 2006; Jackson, 2016).

The study results verify that behavioral engagement significantly influences students' generic skills development. Students who engage themselves through active participation in classroom discussions, completion of assignments, regular class-attendance, and group-learning show comparatively higher levels of generic skills development. These findings correspond to existing research demonstrating that students' participation in academic activities forms the basis of their learning outcomes and individual development (Astin, 1985; Kuh et al., 2006). Behavioral engagement reveals the observable actions of students during their stay at university, and these activities usually produce opportunities for experiential learning and skill acquirement. Studies in tertiary education constantly demonstrate that pedagogical strategies, for instance collaborative learning, project-based and case-based learning can meaningfully enhance students' academic engagement and skill-development (Prince, 2004; Maloshonok & Shcheglova, 2023). In Pakistani universities, where conventional teaching-learning approaches are common, inspiring behavioral engagement through interactive teaching-learning methods can be specifically crucial for enhancing graduate capabilities.

The study findings also show that cognitive engagement positively and significantly affects the growth of students' generic skills. This finding tallies with the guidelines of constructivist learning theory, which proposes that useful learning ensues when students engage in enthusiastically created knowledge acquired through inquisition, problem-solving, and exercises reflection (Vygotsky, 1978). The results are aligned with the study of Trolian (2023) who concluded that cognitive engagement encourages higher-order thinking and intellectual curiosity that are vital for advancing multifarious capabilities mandatory for current job-markets. Constructivism highlights that learning is an active process requiring learners to play active role during educational experiences; knowledge is constructed through social interaction; learning is dependent on contexts and is affected by true experiences. The eminence of cognitive engagement in the current study submits that universities should

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highlight teaching strategies, which encourage in-depth learning rather than mere transfer of information.

The findings also show that social engagement has significant influence on the development of students' generic skills. The theory of student persistence by Tinto's (2012) suggests that students who are socially-integrated into their academic groups are expected to be involved in studies and attain superior levels of academic accomplishment. Peer collaboration and teacher mentorship also influence students' professional growth by offering opportunities for feedback, supervision, and combined-learning. The findings are consistent with several other studies concluded that students' social engagement with peers, teachers and others in collaborative activities, peer discussions, and group-tasks improve generic skills development of undergraduates (Fredricks et al., 2004; Zhoc et al., 2019; Bergdahl et al., 2024; Shomotova & Ibrahim, 2025). The significance of social engagement is especially appropriate with relation to the growth of generic skills as numerous professional capabilities, for instance teamwork, leadership, and interpersonal communication that are fundamentally social. Universities student organizations and co-curricular activities generate environments, which encourage the growth of these capabilities.

From a wider viewpoint, the findings of the current study also submit useful implications for educational policymaking and institutional practices emphasize the significance of incorporating engagement-based pedagogies into tertiary education curricula. The results submit that conventional teaching-learning approaches may be insufficient for improving the transferable skills essential for modern job-market. As an alternative, universities should implement pedagogical strategies, which encourage active involvement, teamwork, and experiential learning. These findings are specifically related to Pakistani tertiary education institutions, where concerns have been presented about the employability of university graduates. Organizations often convey that the graduates are efficient in theoretical knowledge; however, they are deficient in crucial soft skills i.e. communication, teamwork, and critical-thinking. The results put forward that enhancement of student engagement can assist in addressing this skills gap by generating learning environments, which inspire growth of required skills together with academic knowledge.

Conclusions

The current study observed the effect of student engagement on the growth of generic skills in Pakistani university students. Employing a quantitative research design, this study examined the role and effects of emotional, cognitive, behavioral, and social engagement on development of students' generic skills. The findings show that all four dimensions of student engagement have significant contribution towards the growth of generic skills. Among these dimensions, emotional engagement established the strongest effect, stressing the significance of students' affective reactions towards learning experiences include motivation, interest, enjoyment, and integration in the academic surroundings in tertiary education. The results underline that student engagement plays an important role in improving learning outcomes and grooming graduates for professional lives in future. Universities promoting effective participation, collaborative learning, and useful interaction between teachers and students are more expected to generate graduates with effective transferable capabilities. This study contributes to the rising body of literature on student engagement by offering empirical evidence through Pakistani tertiary education.

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