

Holistic Study Habits in Higher Education: A Correlational Investigation

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Abstract

The presented study examined holistic study habits as an interlinked system based on four areas: time management and routine, focus and distraction control, internet and technology use, and quality of studying. This study covered students enrolled in HEC-recognized general universities in Karachi, Sindh. A quantitative, non-experimental, cross-sectional correlational design was used. The target population included students from three public and three private universities. The sample size was calculated using Cochran's formula at 95% confidence and a 5% margin of error, which yielded a minimum requirement of 384, while 400 students participated: 200 from public and 200 from private institutions, selected through multistage stratified random sampling with stratification by institution type, random selection of universities and departments through the lottery method, and simple random sampling using random numbers generated in Microsoft Excel. The instrument was adapted from Palsane and Sharma (1989), Young (1998), Solomon and Rothblum (1984), and Rosen et al. (2013) and contextualized for Pakistani undergraduates. Face validity was ensured through review by three subject matter experts and pilot testing, content validity through expert panel review with I-CVI above .80 and S-CVI/Ave within acceptable range, and internal consistency was satisfactory with Cronbach's alpha .84. Data were collected via Google Forms within four weeks with digital informed consent and assurance of confidentiality, without formal permission from university administrations, and analyzed in IBM SPSS Statistics version 26 using Pearson product moment correlation at $p < .05$. Results revealed strong, positive and significant intercorrelations with large effect sizes, with focus and distraction control emerging as the most central dimension, correlating with internet and technology integration ($r = .80, p < .001$), study quality ($r = .78, p < .001$) and time management ($r = .74, p < .001$), while time management correlated with study quality ($r = .76, p < .001$) and technology integration ($r = .70, p < .001$), and technology integration correlated with study quality ($r = .74, p < .001$). The results demonstrate that comprehensive, integrated programs for distraction control and proper use of technology must be combined in time management workshops. The current study is limited to six general universities in Karachi, and data were collected online through self-report, which limits generalizability and introduces social desirability bias. Future research may adopt longitudinal and experimental designs with mixed-methods approaches. Future studies may expand the scope to diverse regions, disciplines, genders, and sectors, and developing and testing integrated intervention programs will further strengthen the evidence base.

Keywords: study habits, self-regulated learning, time management, internet and technology integration, focus and distraction control, study quality

Introduction

Higher education requires a fundamental shift from externally directed learning to self-directed learning and the need to set goals, evaluate progress, and adapt and modify learning strategies (Pintrich, 2004; Zimmerman, 2002). a transition from a highly structured school environment with fixed schedules and supervision to university life that

demands independent time management, attention, and resources. Research shows that in this context, regular study routines are a robust predictor of academic performance, independent of cognitive ability (Credé & Kuncel, 2008).

Recent literature indicates that effective study habits and routine are not defined by long hours or a single tactic; rather, they are conceptualized as an integrated system rather than isolated behaviors (Credé & Kuncel, 2008; Pintrich, 2004; Zimmerman, 2002). Four interrelated components are consistently highlighted in the literature: time management, purposeful use of the internet and technology for learning, sustained attention and distraction management, and the depth and quality of study (Aeon et al., 2021; David et al., 2024; Sunday et al., 2021).

In the Pakistani context, the dynamics of this integrated system remain poorly understood and scarce. Research examining the links among time management, technology use, and self-regulation remains limited and is primarily confined to medical colleges (Ali et al., 2024; Khan et al., 2020). Students are facing distinct self-regulatory challenges without the structured environment of professional colleges. Therefore, a significant gap exists in understanding study habits within the mainstream higher education sector in Pakistan. Most available evidence nationally comes from Peshawar and Lahore (Ahmed & Zia, 2022; Mushtaq, 2022; Osama et al., 2024; Pervaiz et al., 2023; Ul Haq & Khalil, 2022). Little data exist from Sindh, and the present study aims to address the gap.

Objectives

The present study aimed to explore holistic study habits as an integrated system comprising four interrelated domains: time management and routine, focus and distraction control, internet and technology use, and quality of study among undergraduate students enrolled in HEC-recognized general universities in Karachi, Sindh, Pakistan, and to examine the interrelationship among these dimensions.

Research Questions

RQ1. Is there a significant relationship between time management and routine and focus and distraction control among university students?

RQ2. Is there a significant relationship between focus and distraction control and internet and technology use among university students?

RQ3. Is there a significant relationship between time management and routine study quality among university students?

RQ4. Is there a significant relationship between internet and technology use and study quality among university students?

RQ5. Which dimension emerges as the most central among holistic study habits?

Literature Review

Self-Regulated Learning and Study Habits

Self-regulated learning refers to the process where learners direct their own thoughts and actions toward their academic goals. It includes planning before the task, managing performance during the task, and reflecting after the task (Zimmerman, 2002; Pintrich, 2004). Large meta-analytic evidence based on a total sample of 72,431 participants across 344 studies has shown that study habits, skills, and attitudes predict grade point average almost as strongly as standardized test scores, which makes them a third important pillar of success in college (Credé & Kuncel, 2008). More recent work also indicates that self-regulated learning can be taught and that it helps protect student engagement (Oportus-Torres et al., 2024).

Time Management

Time management is considered a central part of self-regulation. It is positively linked with academic achievement and well-being and negatively linked with stress and distress (Aeon et al., 2021). It improves performance mainly through better planning (Claessens et al., 2007). It also lowers procrastination when students set clear goals (Liu & Zhang, 2020). However, many students still focus on short-term, exam-based efficiency instead of adopting effective long-term strategies (David et al., 2024).

Integration of Internet and Technology

When technology and internet use turns maladaptive, it manifests as compulsive behavior and poor attentional regulation (Rozgonjuk et al., 2022), which hinders learning during study time (Sunday et al., 2021), by lowering engagement and attentional focus and increasing anxiety and procrastination. Such effects are contingent on levels of self-control and perceived academic control (Elhai et al., 2017; Hong et al., 2021; Jin et al., 2024; Rozgonjuk et al., 2020; Zhang & Zeng, 2024).

Focus and Study Quality

Study is not about spending time or the number of hours invested; it's about the depth of engagement and the effective management of distraction and other extraneous factors; these techniques require integrated regulation of time, technology, and focus (Aeon et al., 2021; Pintrich, 2004; Zimmerman, 2002). Flavell (1979) described "thinking about your own thinking," which is the main component of self-regulation, as learners identify gaps and change

strategies if needed. According to Flavell (1979) and Tang et al. (2023), learners actively control the learning process through managing time, distractions, and resources to maintain motivation and avoid procrastination

National Context

Many studies have highlighted that lower academic achievement among youth in Pakistan is associated with excessive reliance on technology and use of the internet (Kubey et al., 2001; Young, 1998), while improved academic success and better grades can be predicted through effective study habits and time management (Khan et al., 2020; Osama et al., 2024; Ul Haq & Khalil, 2022). Based on a limited literature review, most findings come from medical colleges in Peshawar and Lahore (Ali et al., 2024; Osama et al., 2024). Little evidence came from Sindh, and no study addressed study habits as an integrated, holistic system. current study aims to address this gap.

Method

Research Design

The present study is based on a quantitative, non-experimental, cross-sectional correlational design.

Population and Sampling

The current study population consisted of students enrolled in HEC-recognized general universities in Karachi, including three public and three private institutions. The sample size was calculated using Cochran's (1977) formula for an infinite population at a 95% confidence level and 5% margin of error; although the minimum required sample was 384, a total of 400 students were selected (200 from public and 200 from private universities). A multistage stratified random sampling technique was adopted: in Stage 1, institutions were stratified by type with equal allocation; in Stage 2, universities and departments were selected randomly using a lottery method; and in Stage 3, students were selected through simple random sampling.

Instrument

The instrument was adapted from Palsane and Sharma (1989), Young (1998), Solomon and Rothblum (1984), and Rosen et al. (2013). The questionnaire for the current study was designed for Pakistani undergraduates under expert supervision. It assessed holistic study habits across four dimensions: time management and routine, internet and technology integration, focus and distraction control, and study quality. Face validity was established through review by three subject experts in education and psychology for concept formation and language appropriateness. The questionnaire was pilot-tested with undergraduate students in Karachi. Content validity was ensured through an expert panel, with Content Validity Index values within the acceptable range ($I-CVI > .80$, $S-CVI/Ave$ acceptable). Items were rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The internal consistency of all items in the present study (Cronbach's $\alpha = .84$) is satisfactory.

Procedure

The present study employed an online survey method. Data were collected using Google Forms without obtaining formal permission from university administrations. The form link was circulated online among university students. Informed consent was obtained digitally, and participants were assured of confidentiality. Data collection was completed within four weeks.

Data Analysis

Data were analyzed using IBM SPSS Statistics version 26. The data were summarized using descriptive statistics, including means, standard deviations, and percentages. The Pearson product-moment correlation coefficient was used to examine relationships among study habit dimensions. Before conducting the analysis, the assumptions of normality and linearity were verified.. The level of significance was set at $p < .05$.

Ethical consideration

The American Psychological Association (APA) ethical standards were followed. Informed consent, voluntary participation, the right to withdraw, confidentiality, and anonymity were ensured. No deception or harm was involved.

Results

Pearson product-moment correlation was conducted to examine the associations among four dimensions of holistic study habits: Time Management and Routine (TMR), Internet and Technology Integration (ITI), Focus and Distraction Control (FDC), and Study Quality (SQ). All correlations were strong, positive, and statistically significant ($p < .01$), with large effect sizes.

Table I shows intercorrelations. All correlations were strong, positive, and statistically significant ($p < .01$), with large effect sizes. Focus and Distraction Control exhibited the strongest correlations with Internet and Technology Integration ($r = .796$, $p < .001$), Study Quality and Self-Awareness ($r = .784$, $p < .001$), and Time Management and Routine ($r = .744$, $p < .001$). Time Management and Routine was significantly correlated with Study Quality ($r = .756$, $p < .001$) and Internet and Technology Integration ($r = .700$, $p < .001$). A significant positive correlation was also observed between Internet and Technology Integration and Study Quality ($r = .740$, $p < .001$). These results demonstrate that all parts of the study habits are connected and interlinked.

Table I*Pearson Correlations Among Dimensions of Holistic Study Habits (N = 400)*

		Time Management & Routine	Internet & Technology Integration	Focus & Discussion Control	Study Quality
Time Management & Routine	R	I			
	Sig. (2-tailed)				
	Sum Sq. & Cross-products	266.679			
	Covariance	.668			
Internet & Technology Integration	R	.70**	I		
	Sig. (2-tailed)	.000			
	Sum Sq. and Cross-products	195.144	291.130		
	Covariance	.489	.730		
Focus & Distraction Control	R	.74**	.80**	I	
	Sig. (2-tailed)	.000	.000		
	Sum Sq. & Cross-products	196.065	218.958	260.218	
	Covariance	.491	.549	.652	
Study Quality	R	.76**	.74**	.78**	I
	Sig. (2-tailed)	.000	.000	.000	
	Sum Sq. & Cross-products	195.227	199.744	200.048	250.118
	Covariance	.489	.501	.501	.627

**. Correlation is significant at the 0.01 level (2-tailed).

Note. N = 400. TMR = Time Management and Routine; ITI = Internet and Technology Integration; FDC = Focus and Distraction Control; SQ = Study Quality. ** $p < .01$ (two-tailed).

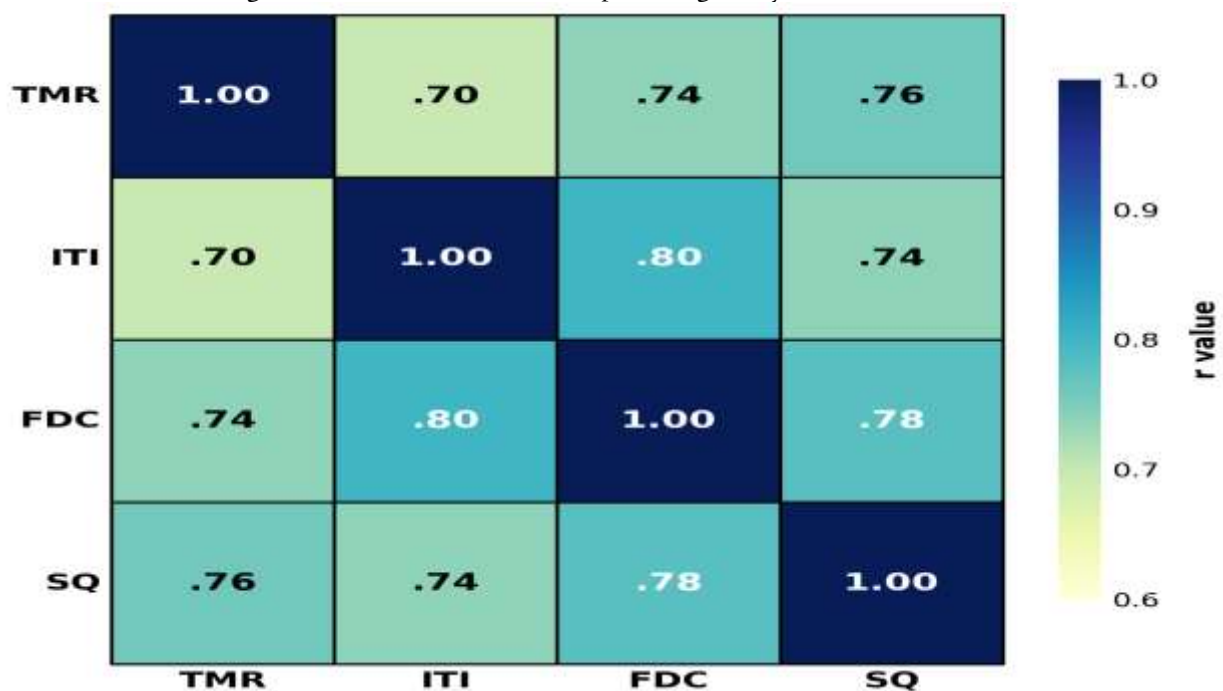
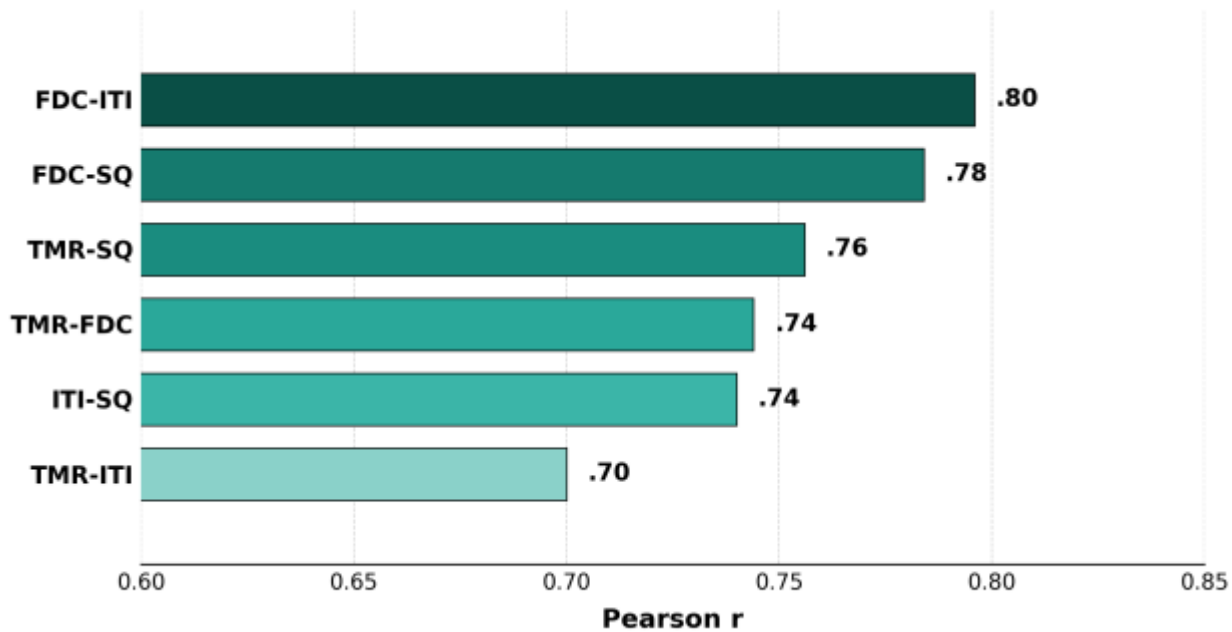
Figure 1: Correlational Heat Map Among Study Habit Dimensions

Figure 2: Strength of Interdimensional Correlations (Sorted)



Discussion

The study gathered data from selected universities of Karachi reveals that study habits operate as a holistic and organized system in which components mutually reinforce one another. The researcher found that all domains of study habits are connected. The strongest association showed between Internet and Technology Integration and Focus and Distraction Control ($r = .80$, $p < .001$), as illustrated in Figure 1 and Figure 2. This finding supports Rosen et al. (2013) and Martin et al. (2025), who suggested that productive engagement with technology is close to attentional control. Ramani-Halili et al. (2025) also indicated that work efficiency can be improved by using technology which results in good grades and improved learning strategies. Consistent with Britton and Tesser (1991), Nonis and Hudson (2010), and Khan et al. (2020), the positive correlation between time management and study quality ($r = .75$) indicated that effective planning and limited procrastination bring deeper learning and better academic outcomes.

The correlation between time management and technology integration ($r = .70$) is supported by Junco and Cotten (2012) that good time managers use technology in an instrumental way rather than for distraction, and with recent work showing that time management moderates the link between distraction and anxiety (Jin et al., 2024). Similarly, the relationship between technology integration and study quality ($r = .74$) supports Rosen et al. (2013) and Means et al. (2013), who observed intentional e-learning as helpful for retention and improper use of technology may hinder active participation in the learning process and may distract frequently (Kubey et al., 2001). Digital self-regulation is a need of today's era, as this study highlighted a strong relationship between technology integration and study quality (Fu et al., 2025; Liu et al., 2024).

Practically, this interdependence suggests that improvement in one area can facilitate gains in others. Programs that focus solely on time management are likely to have limited effect if they deliberately avoid digital distractions, as self-discipline alone does not fully offset digital interference (Elhai et al., 2017; Oportus-Torres et al., 2024; Zhang & Zeng, 2024). When Technology is intentionally used for learning, it appears to support rather than weaken study habits. In contrast, this study sample from Karachi universities showed that poor focus and weak distraction control were associated with lower study quality, consistent with previous evidence that digital distraction interferes with deep learning (Rosen et al., 2013).

Conclusion

This study covers only 400 students from selected universities in Karachi, and the results highlight that all dimensions of study habits were strongly, positively, and significantly interrelated. In the Karachi sample, Focus and Distraction Control emerged as the most central dimension, showing strong relations with Internet and Technology Integration ($r = .80$, $p < .01$), Study Quality ($r = .78$, $p < .01$), and Time Management and Routine ($r = .74$, $p < .01$), as shown in Figures 1 and 2. Additionally, the correlation between Time Management and Routine and Study Quality ($r = .76$, $p < .01$) is high. Overall, the findings suggest that study habits characterized by active time management, deliberate use of technology, and effective attention regulation enhance learning quality.

Implications

The present study is linked to self-regulated learning theory. Results show that study habits are not separate. All domains of study habits are connected as one system. Focus and distraction are the main components. Data gathered in

Karachi link study habits with technology integration ($r = .79$) and with study quality ($r = .78$). These values indicate that attention control is very important for students because of digital learning. In the universities of Sindh, results suggest a need to focus on comprehensive training programs and interventions that include time management, proper use of technology for study, and techniques like active recall. These training and techniques can be added to regular classes and counseling sessions.

Limitations and Future Directions

The present study has some limitations. First, the researcher used a cross-sectional correlational design, so the researcher cannot identify cause-and-effect relationships. It is unclear whether emotional regulation helps with technology use and study quality, or whether good study habits improve regulation. Second, the researcher used a self-report scale, so students may answer based on social desirability. Common method bias may also exist. Third, the researcher used convenience sampling and included only undergraduate students from selected universities in Karachi. Findings may not apply or generalize to postgraduate students, other university types, rural students, or other cultures. The current study investigated only four parts of study habits, not covering field of study, semester level, family income, sleep patterns, mental health, and cultural backgrounds.

Future researchers are advised to adopt longitudinal and experimental designs using mixed methods and objective indicators such as screen-time logs, LMS (Learning Management System) activity, and official GPA records. The use of larger, stratified, and cross-cultural samples, including rural areas, is recommended, and the mediating and moderating variables, such as self-efficacy, motivation, and academic stress, can be examined. Future research may also conduct intervention studies targeting time management and digital self-regulation.

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