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Digital Citizenship and Mental Health: Impact of Screen Addiction and Online Behavior in University Life

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Abstract

In Pakistani universities, the educational environment has rapidly digitising in recent years, and students rely on digital platforms, which are increasing day by day, and they acquire quality education, social interactions, digital marketing and entertainment. This technology offers benefits in terms of access and convenience, and it also contributes to growing mental health concerns, especially screen addiction, anxiety, depression and disturbance in the sleep cycle. These all cause a reduction in academic focus. This study explores the connection between digital citizenship and the mental health of university students in Pakistan. Quantitative descriptive correlational design was used in this research. Data was collected from the students across public and private universities using standardized tools such as the digital citizenship scale, the screen addiction scale and DASS-21. The study found a strong correlation between screen time and mental health outcomes, that is, more screen time, more poor mental health. Students lacked awareness of digital self-regulation and online responsibility. Security issues in digital citizenship in Pakistani Curricula are absent at higher-level education. This study recommends digital citizenship, integration, and training into academic programs. The strategies are essential for fostering a digitally responsible and psychologically resilient student community in Pakistan's higher education landscape.

Key Words

Digital Citizenship, Screen Addiction, Mental Health, University Students, Pakistan, Digital Well-being, Online Behavior, Digital Literacy, Higher Education, Psychological Distress

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Introduction

The digital age reshaped higher education in the country. Students at higher levels are deeply involved in digital technology, not only for academic purposes but also for personal growth, seeking information and entertainment (Saqib, 2025). The availability of digital gadgets, online courses, virtual libraries, and collaborative platforms has allowed students to access information and connectivity (Gilmour, 2019). But on the other hand, there are some problems faced by students, such as their mental health. The excessive use of technologies and digital devices, i.e. mobile phones, laptops and other screens, affects the mental health of students and also causes anxiety, depression and sleeping disorders (Sarkar, 2025). On the other hand, interpersonal relations and academic performance are also affected due to this reason (Meghji, 2025). Excessive use of the screen also caused fatigue and emotional distress. Unfortunately, digital literacy efforts within the higher education institutions in Pakistan do not address

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the psychological aspects of digital life. There is little guidance from the institutions on using mobile phones; as a result, many students are left vulnerable to issues such as digital burnout, anxiety and declining academic engagement (Lucey, 2020). This study aims to fill the gap by advocating for the inclusion of digital citizenship education in university curricula and students' support services. Basically, this article aims to educate students regarding digital citizenship education through its findings and results to improve their digital behaviour as digital citizens.

Review of Literature

Digital technology has significantly changed higher education in Pakistan; students use digital tools for information, entertainment and connectivity. The excessive use of these tools has a relation to mental health. A study conducted by Zaman et al. (2025) also indicated that there is a relationship between the usage of gadgets and the effects on mental health and personality disorders among students. Another scholar, Saqib (2025), indicated that in the curricula of a university level, there is a lack of indication about mental health, and there are no hard and fast rules for using mobile phones and other gadgets and screens on university campuses. It definitely means that the curricula do not guide the students about digital citizenship. Ribble (2012) indicated nine elements of digital citizenship for better online social and responsible behaviour. According to Ribble, there are nine elements in digital citizenship that can be taught to students. These are digital access, digital commerce, digital communication, digital laws, digital literacy, digital rights and responsibilities, digital security and digital etiquette. These are the role models for a digital citizen. To follow the laws, otherwise mental problems and restlessness may be faced by students (Ameer & Hukamdad, 2025). One of the most alarming consequences of digital immersion is that screen addiction is associated with Pakistani universities, which may cause damage to psychological well-being.

The study of Kuhdasht et al. (2018) reveals that a higher level of digital engagement correlated with increased anxiety and decreased life satisfaction. It also increases the level of anxiety and depression. Si et. al (2023) also found that the border implication between screen time and prolonged digital use adversely affected academic performance, disturbance of the sleep cycle of students and negatively affected their health condition as well as mental health. One finding of Nawaz et al. (2017) is also alarming, which is nomophobia, the fear of being without a mobile, as a rising concern for people, especially youth, and 77% of teenagers in Pakistan experience a high level of nervousness when they are away from their phones. Most curricula of universities do not address the emotive and psychological aspects of digital life. Öztürk (2021) designated that these gaps require a multi-layered approach. Educational institute prioritised the digital citizenship and its effects on mental health (Cortesi et al, 2020). Although mental health is a sensitive issue and it is not easy for students to recognise him/herself as mentally disturbed, there should be seminars and open discussions, collaborations between teachers, parents and psychologists. Recently, scholarly works have increasingly emphasised the compelling relation between digital citizenship and psychological health, according to

Lucey et al. (2020) suggest that poor digital habits such as extreme use of social media, cyberbullying, and carelessness with online privacy can lead to anxiety and depression. According to Sarkar et al. (2025), the students who are well aware of digital citizenship have enhanced control over screens. This points to the defensive value of digital literacy and self-regulation in handling mental health consequences. Another scholar, Kabanova (2019), says that screen addiction is an important source of distress in university settings. His findings suggest that the use of mobile phones, especially smartphones, may cause anxiety and distress, but online support can provide emotional support and a sense of community. Both benefits and harms highlight the need to promote healthy online habits and mental well-being among university students in Pakistan.

Theoretical Framework of the Study

Uses and Gratifications Theory (UGT), developed by Katz et al. (1973), focuses on what people do with media rather than what media does to people. It suggests that audiences are active participants who use media to fulfil various psychological and social needs, such as information-seeking, entertainment, personal identity, and social interaction. This study is anchored in the Uses and Gratifications Theory (UGT), which provides a foundational lens to understand university students' digital behavior and its implications for mental health. UGT, developed by Katz et al. (1973), posits that individuals actively seek out media and digital technologies to satisfy specific psychological, emotional, and social needs. In the context of university life, students engage with screens and online platforms not passively, but with clear purposes such as information-seeking, social connection, entertainment, identity exploration, and stress relief. These motivations help explain the rising trend of screen addiction among students and its potential influence on their mental well-being, academic performance, and social interactions. By applying UGT, this study aims to explore how students' online behaviors are driven by gratification needs, and how these behaviors, when excessive, may contribute to negative mental health outcomes such as anxiety, depression, poor sleep, and reduced real-life engagement.

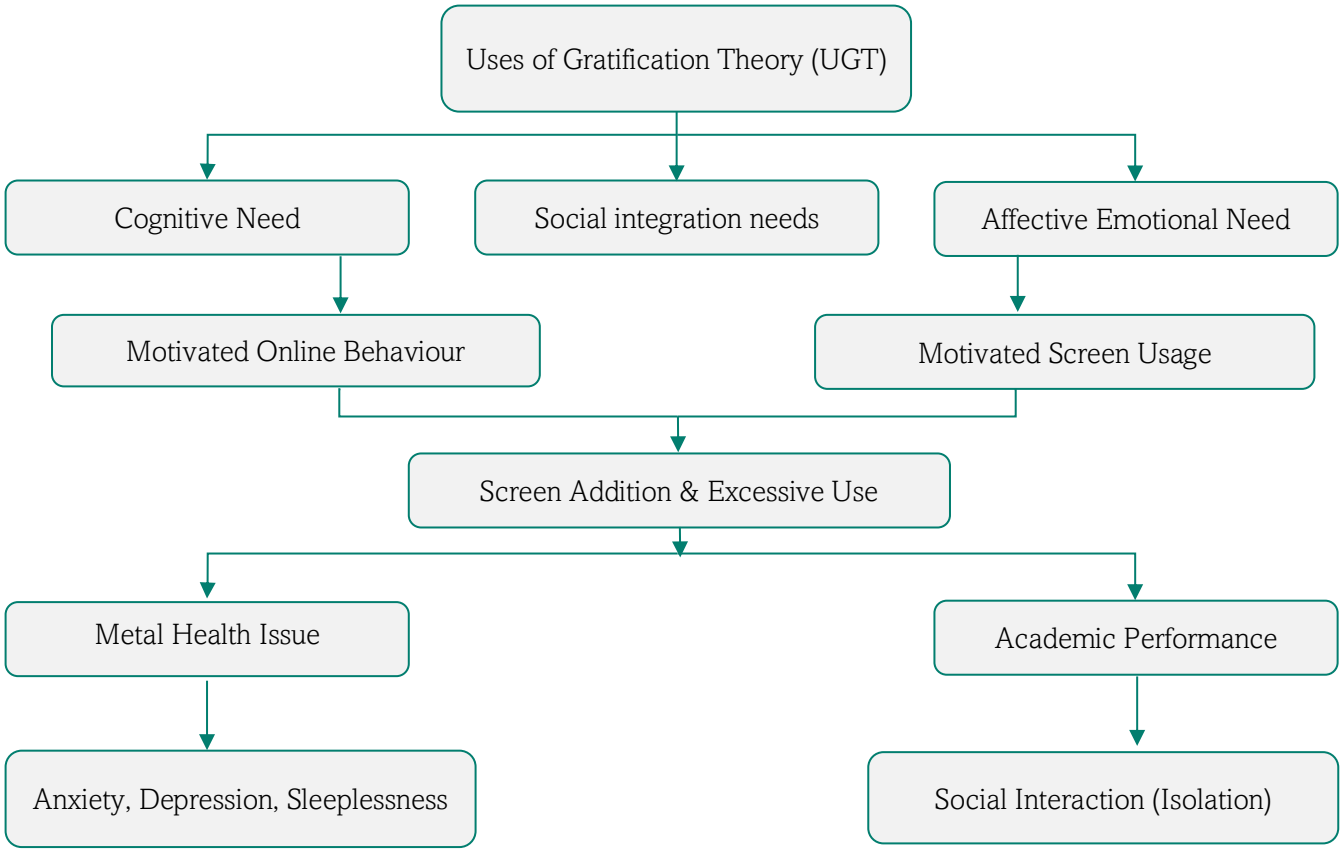
The theory thus serves as a useful framework to examine:

1. The motivations behind digital engagement
2. The patterns of screen usage and online behavior
3. The psychological consequences of such behavior in the university environment

This theoretical lens aligns closely with the study's objective to understand the impact of digital citizenship and screen addiction on students' mental health.

Figure 1

Theoretical Framework of the Study



Objectives of the Study

- To observe online behaviour and its effects on the mental health of university students.
- To assess students' awareness of digital citizenship.
- To Analyze the relationship between digital citizenship competencies and mental health outcomes such anxiety, depression and sleeplessness.

Research Design

This study utilises a quantitative, descriptive-correlational research design to explore the association between students' digital citizenship practices and their mental health, particularly in the context of screen addiction and digital behaviour. The descriptive aspect aims to identify prevailing trends and the extent of screen addiction among university students, while the correlational component examines the strength and nature of the relationship between digital behaviors and mental health indicators such as anxiety, depression, and stress. To collect data, a cross-sectional survey approach will be employed, allowing for the simultaneous measurement of multiple variables, including screen time, digital habits, and psychological well-being at a single point in time. This design is well-suited for observing existing relationships without manipulating the study environment or variables.

Population of the Study

The target population comprises undergraduate and postgraduate students currently enrolled in public and private universities throughout Pakistan.

Inclusion Criteria

- Enrolled in a degree-granting academic program at a recognized university.
- Regular users of digital devices and online platforms (e.g., smartphones, laptops, LMS portals, social media).
- Voluntarily agree to participate in the research.

Table 1

Sample Size

S/No	Population	Sample Size
1	Enrolled in a degree-granting academic program at a recognized university	100

Based on Cochran's formula for large populations with a 95% confidence level and 5% margin of error, the estimated sample size is 100 students, ensuring adequate representation and statistical validity.

Sampling Technique

A stratified random sampling method was implemented to achieve balanced representation across key demographics, including:

- Gender (male, female)
- Type of institution (public vs. private),
- Region (urban vs. rural university settings),
- Field of study (e.g., social sciences, health sciences, engineering, business, humanities).

Data Collection Tools

Data were gathered through a structured, self-administered questionnaire, designed to measure demographic, behavioral, and psychological variables. The instrument consisted of four primary sections:

Demographic Information

This section collected basic background data such as:

- Age
- Gender
- Academic level (undergraduate/postgraduate)
- Field of study
- Type of institution (public/private)
- Daily average screen time (in hours)

Digital Citizenship Scale

Adapted from Ribble's Nine Elements of Digital Citizenship, this scale assesses students' understanding and application of key digital ethics and practices, including:

- Digital communication
- Digital literacy
- Digital etiquette
- Digital rights and responsibilities
- Digital health and wellness

Responses were recorded on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree.

Screen Addiction Scale

To measure students' level of screen dependency, a standardised tool such as the Smartphone Addiction Scale (SAS) or Internet Addiction Test (IAT) was adapted. These tools are widely recognized for their reliability in assessing problematic digital device usage.

Mental Health Scale

The Depression, Anxiety, and Stress Scale (DASS-21) will be used to evaluate the psychological well-being of participants. This validated instrument is commonly applied in South Asian research contexts and provides a composite mental health score based on self-reported symptoms.

Data Collection Procedure

- The survey was administered online through platforms such as Google Forms or Qualtrics to ensure ease of access and broader reach.
- Institutional permissions were obtained where required, and informed consent was collected from all participants prior to participation.
- Data privacy and confidentiality were strictly maintained, with responses anonymized and used solely for academic purposes.

Descriptive Statistics (Summary)

Table 2

Average Screen Time (Hrs. Day)

S/No	Statistics	Value
1	Mean	6.1
2	Standard Deviation	2.1
3	Minimum	1.0
4	Maximum	12.0

Table 2 describes statistics for average screen time per day. Participants spent, on average, 6.1 hours daily on screens. The standard deviation of 2.1 indicates moderate variability in screen usage. The minimum screen time was 1 hour, while the maximum time was 12 hours, which shows.

Table 3
Digital Citizenship Score (Out of 50)

S/No	Statistics	Value
1	Mean	3.5
2	Standard Deviation	4.9
3	Minimum	25
4	Maximum	50

Table 3 shows the summary for Digital Citizenship Scores. The average score was 35 out of 50, with a standard deviation of 4.9, indicating a moderate spread in digital citizenship levels. Scores ranged from 25 to 50, with 50 being the highest, showing that while some participants demonstrate strong digital citizenship, others may have room for improvement.

Table 4
Screen Addiction Score (Out of 100)

S/No	Statistics	Value
1	Mean	64.9
2	Standard Deviation	9.7
3	Minimum	45
4	Maximum	90

Table 4 summarises Screen Addiction Scores. Participants had an average score of 64.9 out of 100, with a standard deviation of 9.7. The scores varied from 45 to 90, suggesting a generally high tendency toward screen addiction, with some individuals scoring significantly higher than others.

Table 5
Mental Health Score (DAAS-21 Total)

S/No	Statistics	Value
1	Mean	45
2	Standard Deviation	14.6
3	Minimum	15
4	Maximum	85

Table 5 presents the Mental Health Scores based on the DASS-21. The average score was 45, and the standard deviation of 14.6 shows high variability. Scores ranged from 15 to 85, indicating a wide distribution in mental health status among participants from relatively low to significantly high distress.

Discussion

The study identifies the relationship between mental health, screen addiction and digital citizenship among university students in Pakistan. The study indicated significant correlations between the variables, with screen addiction strongly linked to proper mental health outcomes (Zafar et al., 2023). It has been observed that if a

student is addicted to screens by using mobile phones, smartphones, laptops and other types of screens, it will affect the health of the student and also affect the mental and psychological well-being of the student (Kuhdasht, 2018). Screen addiction also affects when student use excessive digital gadgets or their digital dependency, negatively impacting their emotional and psychological well-being (Nasir et al., 2025; Shensa et al., 2017). The higher level of digital citizenship defines further responsible ethical use of that technology to have the lowest screen as Ribble (2015) suggests a model for digital citizenship, which posits that responsible digital practices also help mitigate some of the negative psychological consequences of digital use (Nasir et al., 2025). Additionally, the positive correlation between screen addiction and mental health distress supports the notion that long use of screens increases the symptoms of depression, anxiety and stress in students. It also affects the social relations of the Students. The impact of digital technology on students remains negative for mental and emotional health (Meghji, 2025). Digital performance influences their emotional and psychological health. Some research also shows that students with high screen time report higher levels of anxiety and stress (Siddiqi, 2018). while the digital citizenship and the mental relation were negative, and this indicates that other factors, such as the personal copy mechanism, social sport, and the offline activities, could also play a strong mental wellbeing.

Conclusions

The conclusions are based on collected data, analysis of the data, and the study concludes the following key points: Screen Addiction and Mental Health: Screen addiction and poor mental health have a significant positive correlation. Those students who are addicted to a higher level of screen engagement reported that their symptoms of depression and anxiety increased. It is concluded that excessive screen time is detrimental to students' psychological, emotional and mental well-being.

Digital Citizenship and Protective Factor: The students who consistently behave as responsible individuals and demonstrate the elements of digital citizenship, i.e. digital access, digital commerce, digital communication, digital laws, digital literacy, digital rights and responsibilities, digital security and digital etiquette, and maintain digital health, exhibited more favourable mental health outcomes. These students reported less stress and a low level of screen addiction.

Need for Institutional Interferences: There is a strong relationship between psychological unrest and screen addiction. There is a dire need for the intervention of universities in this regard and to implement proactive measures. Universities that incorporate digital wellness initiatives can help mitigate mental health risks and promote the healthier use of technology.

Digital Literacy in Universities and its Role: Students who have an understanding and higher awareness of digital citizenship education, digital access, digital commerce, digital communication, digital laws, digital literacy, digital rights and responsibilities, digital security and digital etiquette have less problematic use of technology.

Recommendations

1. To address the findings of the study, the following recommendations have been made for higher educational institutions.
2. It is recommended that universities in Pakistan integrate digital citizenship into their curricula. These programmes may include Ribble's nine elements: digital access, digital commerce, digital communication, digital laws, digital literacy, digital rights and responsibilities, digital security and digital etiquette, and maintain digital health in their curricula as role models and may change according to the needs of time.
3. It is recommended that Pakistani universities develop digital wellness initiatives, such as 'digital detox 'campaigns and screen time tracking tools within the learning management system. The workshops and seminars on time management and safe use of digital gadgets may be held on a regular basis.

4. It is recommended that universities in Pakistan expand student support services to improve mental health. It may include counselling, guidance, a peer support group, psychoeducation sessions and awareness about digital citizenship and mental health.
5. It is recommended that universities introduce outdoor activities and offline activities by introducing the campus club, health clubs, physical fitness programmes and social events. These actions from the university may restore the mental health and psychological support, and enable students to be less dependent on digital interactions.
6. Future Research: There is a great need for longitudinal studies examining the long-term effects of digital citizenship education on students' mental health in the Pakistani context. The research method may be a mixed-method approach.

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