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A Strategic Framework for Teacher Training on Students' Digital Health Management in Secondary Schools

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Abstract
The increasing digital exposure of students has given rise to significant concerns regarding digital health, including emotional stress, cognitive overload, and behavioral challenges. Despite this, there remains a lack of structured strategies to prepare secondary school teachers to address these issues. This qualitative study aimed to explore current practices, perceived challenges, and institutional needs concerning student digital health management among teachers and stakeholders in secondary schools of District Narowal, including Narowal City, Shakargarh, and Zafarwal. Data were collected through semi-structured interviews and focus group discussions with teachers, QAED trainers, school heads, and AEOs. Thematic analysis revealed three critical concerns: limited teacher awareness and training, absence of school-level digital health policies, and insufficient institutional support mechanisms. Findings indicated a pressing need for targeted training in digital health literacy, emotional counseling, and preventive classroom strategies. Grounded in Bandura's Social Cognitive Theory, Digital Health Literacy Theory, and Transformative Learning Theory, this study proposed a strategic three-tier framework focused on awareness, prevention, and intervention. The research concluded that teacher empowerment, policy integration, and stakeholder collaboration are essential for promoting students' digital well-being. The study contributes to the existing literature by addressing the underexplored intersection of teacher training and student digital health in developing educational contexts and offers actionable recommendations for educational planners and policymakers.

Keywords: *Teacher Training, Students' Digital Health, Management, Secondary Schools*

1. Introduction

In the contemporary educational landscape, the increasing integration of digital technologies has transformed how students learn, communicate, and interact with their environment. From online learning platforms and virtual classrooms to digital homework tools and social media, digital engagement has become a routine aspect of students' daily lives. While these tools have revolutionized learning opportunities, they have also introduced a range of challenges concerning students' digital health an umbrella term encompassing the physical, mental, emotional, and behavioral well-being of students as they engage with digital environments (Chassiakos et al., 2016).

Particularly within secondary schools, where students are navigating complex developmental, cognitive, and social transitions, excessive or unregulated digital engagement can lead to harmful outcomes such as sleep deprivation, attention difficulties, sedentary lifestyles, anxiety, depression, and exposure to cyber bullying (Twenge & Campbell, 2018; Hale & Guan, 2019). Research has consistently shown that adolescents are particularly vulnerable to these negative consequences due to their increased screen time, dependency on digital communication, and lack of self-regulation strategies (Livingstone et al., 2018).

The critical importance of this issue, existing teacher training programs have largely overlooked the role of teachers in managing and promoting students' digital health. While educators have been increasingly trained in digital literacy and the use of educational technology, there is insufficient emphasis on equipping them with the knowledge, skills, and strategies needed to address the health implications of digital engagement (Howard et al., 2021; Dunn & Mandzuk, 2022). In the absence of structured training and support, teachers often feel ill-prepared to intervene effectively or guide students in developing healthy digital habits (Shah & Habib, 2022).

This research aimed to develop a strategic framework for teacher training that enables educators to effectively manage and support students' digital health within secondary schools. Grounded in Bandura's Social Cognitive Theory (2001), which emphasizes the reciprocal relationship between behavior, personal factors, and environmental influences, and the Whole Child Approach (ASCD, 2021), which promotes comprehensive student well-being, this study proposed a contextually adaptable model for professional development. The framework integrates psychological, social, and pedagogical components to empower teachers as key facilitators of responsible digital engagement and student wellness.

1.1 Problem Statement

Digital technologies have become indispensable in education, the side effects of their unmoderated use especially on students' physical and mental health have raised critical concerns globally. Numerous studies have documented the adverse effects of excessive screen time, online addiction, disrupted sleep, and digital anxiety among adolescents (Chassiakos et al., 2016; Twenge &

Campbell, 2018). Despite these concerns, the education system has not responded proportionately in terms of policy, teacher education, or school-level strategies. A particular gap exists in teacher training curricula, which tend to focus on enhancing technological skills but largely ignore the digital health dimensions of student development (Howard et al., 2021). Teachers are expected to integrate digital tools in classrooms while simultaneously managing students' emotional, behavioral, and cognitive challenges related to digital overuse. However, there is no cohesive strategic framework guiding teacher preparation in this regard, especially in countries like Pakistan and other parts of South Asia where infrastructure and awareness are still evolving (Ahmed et al., 2023). This gap has left teachers underprepared, and students increasingly exposed to unmanaged risks in the digital environment.

1.2 **Research Objectives**

1. To explore the current practices and challenges that teachers face in addressing and managing digital health issues among secondary school students.
2. To identify essential competencies, knowledge areas, and support systems required for training teachers in the management of students' digital health.
3. To develop a strategic, evidence-based framework for teacher training that can be implemented in secondary schools to promote students' digital well-being.

1.3 **Research Questions**

1. What are the current practices and perceived challenges faced by teachers in managing students' digital health in secondary school contexts?
2. What knowledge, skills, and institutional supports are necessary to prepare teachers for effective digital health management?
3. How can a strategic framework be designed to systematically enhance teacher capacity for supporting students' digital health?

1.4 **Rationale of the Study**

The rationale for this study emerged from the recognition of a critical gap between digital technology adoption in schools and teacher preparedness to handle its negative consequences on students' well-being. While technology integration in education has been heavily promoted, little has been done to address the psychosocial risks associated with its usage. Many teachers report being untrained in identifying or responding to symptoms of digital distress in their students, and school systems often lack protocols or support structures for managing such challenges (Dunn & Mandzuk, 2022; Miller et al., 2020).The need for a strategically developed training framework is particularly urgent in developing countries, where digital penetration has increased rapidly but teacher development has not kept pace (Shah & Habib, 2022). This research sought to move beyond fragmented efforts and provide a comprehensive and actionable framework rooted in contemporary theories of learning and well-

being. By situating teachers as change agents, the study emphasized their central role in fostering digital environments that are not just functional but also healthy and student-centered.

1.5 Significance of the Study

This study contributed to the academic and practical domains in several significant ways:

1. It developed a strategic and scalable framework to guide teacher training on digital health management, addressing a pressing yet underexplored area in education.
2. It provided evidence-based insights for teacher training institutions, curriculum designers, and education policymakers aiming to strengthen student welfare in digital spaces.
3. It enhanced the understanding of teacher readiness and capacity gaps, especially within secondary schools in developing countries, offering a model that is adaptable across socio-cultural contexts.
4. It reinforced the relevance of holistic pedagogical models that go beyond academic achievement to prioritize students' emotional, behavioral, and physical health, aligning with the Whole Child Approach (ASCD, 2021).

1.6 Limitations of the Study

While the study contributed valuable insights and a theoretical model, it acknowledged the following limitations: The study focused on secondary school settings and did not include primary or post-secondary institutions. As such, the framework may require modification when applied to different educational levels. The research was based primarily on data from South Asian settings, particularly Pakistan. Therefore, generalizability to other regions should be approached cautiously and with necessary cultural adaptations. While the framework was theoretically developed and validated through expert feedback, its full implementation and longitudinal evaluation were beyond the study's scope due to time and resource constraints. Although the study centered on empowering teachers, it did not directly incorporate student voices, which may be valuable in refining the framework's relevance and effectiveness.

2. Literature Review

The rapid integration of digital technologies into educational settings has brought about significant benefits, including increased accessibility, personalized learning, and enhanced engagement (Livingstone & Blum-Ross, 2020). However, these advancements also pose challenges to students' digital health defined broadly as the physical, mental, and emotional well-being of individuals interacting with digital technologies. While growing literature addresses digital health among students, teacher preparedness in managing and mitigating its adverse effects is still underexplored, particularly in secondary school contexts (Dunn & Mandzuk, 2022). This literature review critically evaluates the current state of research on teacher training regarding students' digital health management, outlines key theoretical frameworks, identifies

research gaps, and positions the present study within the broader academic discourse.

2.1 Theoretical Framework

This study draws upon two primary theoretical lenses: Bandura's Social Cognitive Theory (SCT) and the Whole Child Approach to Education. Social Cognitive Theory (Bandura, 2001) emphasizes observational learning, self-regulation, and reciprocal determinism, which are highly relevant in understanding how teachers influence students' digital behaviors and health practices. Teachers, as role models and facilitators, shape students' attitudes and self-efficacy related to digital technology usage. The Whole Child Approach (ASCD, 2021) promotes educational strategies that prioritize students' comprehensive well-being, including their digital interactions. This framework underscores the importance of equipping teachers with holistic training that not only fosters academic success but also addresses emotional, physical, and social well-being in digital contexts. These frameworks collectively help conceptualize a strategic model for teacher training that integrates behavioral, emotional, and cognitive dimensions of digital health. Alternative theoretical lenses such as the Health Belief Model (Rosenstock et al., 1988) or Ecological Systems Theory (Bronfenbrenner, 1979) could have been employed; however, SCT and Whole Child Theory more directly align with the pedagogical role of teachers and the educational system's responsibility in promoting digital health.

2.2. Current State of Research

The global shift toward digital learning environments has significantly increased scholarly attention on students' digital health, but the role of teachers in managing it has only recently begun to surface. Chassiakos et al. (2016) raised early concerns about screen time, cyber bullying, and sleep disruption, highlighting the urgent need for adult guidance in managing digital behaviors. More recent studies, such as those by Hale and Guan (2019) and Twenge and Campbell (2018), have empirically demonstrated correlations between excessive screen use and increased anxiety, depression, and lower academic performance in adolescents. Despite this, much of the existing research has focused on students' perspectives or parental monitoring, with limited attention given to the pedagogical responsibilities of teachers (Livingstone et al., 2018). A few emerging studies have emphasized the need for teacher training in digital citizenship and online safety (Miller et al., 2020), yet comprehensive frameworks specifically addressing digital health remain sparse. In Europe and North America, several pilot programs have incorporated digital wellness components into teacher education (e.g., the eSmart Schools Framework in Australia), but these initiatives have often lacked rigorous evaluation or long-term follow-up (Howard et al., 2021). Similarly, in developing countries like Pakistan, teacher training programs tend to focus more on content delivery and digital literacy than on the health impacts of digital engagement (Shah & Habib, 2022).

2.3 **Gaps in the Existing Literature**

While the discourse on digital health is rapidly growing, several key gaps persist: There is no consolidated or widely adopted strategic framework for equipping secondary school teachers to manage students' digital health. Most existing studies are based in Western contexts, with insufficient attention to cultural, infrastructural, and pedagogical realities of countries like Pakistan (Ahmed et al., 2023). Research often treats digital health as a medical or psychological issue, rather than integrating it with educational leadership and teacher professional development. Very few studies have explored the long-term impact of teacher training on students' digital health behavior over time.

2..4. Connecting to Previous Studies

This research is situated at the intersection of digital education, teacher professional development, and student well-being, extending the dialogue established by scholars such as Livingstone et al. (2018), Howard et al. (2021), and Dunn and Mandzuk (2022). It also builds on the theoretical insights of Bandura (2001) and ASCD's Whole Child Approach, proposing a model that not only addresses existing concerns but also anticipates future challenges as digital ecosystems evolve. By aligning teacher training with evidence-based frameworks and student well-being priorities, this study aims to contribute a contextually relevant, strategic framework adaptable across diverse secondary school environments.

2.5. New Aspects the Research Focuses On

The proposed study addresses multiple underexplored areas: It aims to create a replicable, adaptable strategic framework for teacher training on digital health, a model that can inform both policy and practice. Unlike most literature which targets university students or general education, this research focuses specifically on secondary schools, a critical developmental stage. It evaluates teacher training needs within the socio-cultural framework of South Asia, particularly Pakistan, adding regional relevance to the global discourse.Shifting the focus from student behavior to teacher preparedness, the study repositions educators as proactive agents of digital well-being.

The review of existing literature highlights the pressing need for a systematic approach to equipping teachers with the tools and strategies necessary for managing students' digital health. Despite increasing awareness of digital well-being challenges among students, current teacher education programs remain ill-equipped to tackle the complexities involved. This research, grounded in robust theoretical foundations and critical review of existing literature, seeks to bridge that gap by developing a contextually appropriate, evidence-based strategic framework that supports both teachers and students in navigating the digital age responsibly and healthily.

3. Research Methodology

3.1 Research Design

This study employed a qualitative exploratory research design to develop a strategic framework for teacher training on students' digital health management in secondary schools. The qualitative approach was selected because it allowed

for an in-depth understanding of teachers' experiences, perceptions, challenges, and training needs related to digital health (Creswell & Poth, 2018). The exploratory nature of the study enabled the identification of patterns, insights, and underlying themes that are not easily captured through quantitative methods. A constructivist paradigm guided the research, as it emphasized understanding participants' subjective meanings and the contextual realities of their teaching environments (Lincoln & Guba, 1985).

3.2 Data Collection Methods

The data were collected through semi-structured interviews, focus group discussions (FGDs), and document analysis. These methods provided a triangulated view of the problem and ensured the reliability and validity of the findings.

a. Semi-Structured Interviews: Interviews were conducted with 15 secondary school teachers from both public and private institutions. The participants were selected based on their experience in integrating digital technologies into their teaching practices. The interviews explored their understanding of digital health, experiences with student digital behaviors, training received, and perceived needs.

b. Focus Group Discussions: Two FGDs were held one with teacher trainers and another with educational administrators. Each group included 6 participants. These discussions provided insights into institutional strategies, gaps in existing training models, and suggestions for policy development.

c. Document Analysis: Relevant training modules, government education policies, teacher professional development curricula, and digital health toolkits were analyzed. This analysis offered a broader context for understanding how digital health management was being addressed at the systemic level.

3.3 Sampling Technique and Sample Size

To explore the realities of teacher preparedness for managing students' digital health in secondary schools, data were collected from three key regions in **District Narowal**: Narowal city, Tehsil Shakargarh, and Tehsil Zafarwal. These areas were purposefully selected to represent a mix of urban, semi-urban, and rural educational settings within the same district, thereby ensuring diversity in terms of school infrastructure, digital access, and professional development exposure. A multi-method qualitative data collection approach was adopted, comprising semi-structured interviews, focus group discussions (FGDs), and document analysis.

a. Semi-Structured Interviews: Semi-structured interviews were conducted with 15 secondary school teachers teaching in both public and private schools across the three regions:

1. 5 teachers from secondary schools in Narowal city,
2. 5 teachers from schools in Shakargarh, and
3. 5 teachers from schools in Zafarwal.

These teachers were selected based on their active use of digital tools in classroom instruction and at least three years of teaching experience. The

interviews focused on understanding their perceptions of digital health issues among students, the challenges they faced, any training they had received, and their needs for professional development in this area.

b. Focus Group Discussions (FGDs): Two FGDs were conducted to gain deeper institutional insights: The first FGD was held with 2 teacher trainers affiliated with the QAED (Quaid-e-Azam Academy for Educational Development) Narowal regional office, who had experience training teachers in ICT, digital pedagogy, or child development. The second FGD included 3 educational administrators, such as headteachers, AEOs (Assistant Education Officers), and DTEs (District Teacher Educators) from the three tehsils. These stakeholders discussed systemic issues, policy-level strategies, and capacity-building initiatives for digital health. The discussions were held at centrally accessible educational facilities in Narowal city, ensuring convenience for participants from surrounding tehsils.

c. Document Analysis: Key official documents were analyzed, including: Teacher training manuals and professional development records from QAED Narowal. Secondary school policies and digital education strategies from the District Education Authority (DEA) Narowal. National curriculum frameworks and provincial training guidelines relevant to digital citizenship, ICT integration, and student well-being. This analysis allowed for triangulation of data collected through interviews and FGDs, and helped contextualize the findings within existing institutional and policy structures.

3.4 Data Analysis Procedure

Thematic analysis was employed to analyze the qualitative data (Braun & Clarke, 2006). Data were transcribed, coded, and categorized into major themes and sub-themes. The manual thematic analysis was used to organize and analyze the data systematically. A coding framework was developed based on both a priori codes derived from the literature (e.g., “screen time,” “cyber bullying,” “teacher preparedness”) and emergent codes identified during analysis (e.g., “emotional fatigue,” “lack of guidelines”).

3.5 Research Instrumentation

Interview and FGD protocols were developed based on a review of the literature (Chassiakos et al., 2016; Howard et al., 2021) and validated by three experts in teacher education. Each interview lasted between 30–45 minutes, and FGDs were conducted in 60–75-minute sessions. All sessions were recorded (with consent) and transcribed for analysis.

3.6 Ethical Considerations

Ethical approval was obtained from the Institutional Review Board of the affiliated university. Participants were provided with informed consent forms, and their anonymity and confidentiality were strictly maintained. Data were securely stored and used solely
for research purposes.

3.7 Justification of the Methodology

The chosen methodology effectively addressed the research objectives by uncovering the lived experiences and needs of teachers and institutional stakeholders. The qualitative design was well-suited to explore the complex and multi-dimensional nature of digital health and its management within the school setting. The findings from this research served as a foundation for developing a practical, evidence-informed strategic framework, contributing to the academic discourse and offering actionable solutions for teacher training institutions and policymakers.

4. Data Analysis and Findings

This chapter presents a critical analysis of the qualitative data gathered from teachers, teacher trainers, educational administrators, and district-level officials across secondary schools in **District Narowal,** including the **Tehsils of Shakargarh and Zafarwal.** The purpose of this analysis was to explore current practices, challenges, knowledge gaps, and institutional needs related to teacher preparedness for managing students' digital health, and to inform the development of a strategic training framework. The data were collected using **semi-structured interviews** with 15 secondary school teachers and **focus group discussions (FGDs)** with 6 teacher trainers and 6 educational administrators. Additionally, **relevant policy documents, QAED training manuals,** and institutional guidelines were analyzed to triangulate and contextualize findings. All participants were selected through purposive sampling due to their involvement in digital pedagogy, student support, or teacher training roles. The analysis followed **thematic analysis procedures** as outlined by Braun and Clarke (2006), enabling the identification of meaningful patterns across participant responses. Themes were derived through a combination of deductive coding based on the literature review and research objectives, and inductive coding based on the participants' narratives and lived experiences.

In line with the **constructivist paradigm**, this chapter presents the perspectives of participants in their own voices through direct quotations, followed by interpretive commentary and thematic categorization. The responses are grouped according to the study's three primary research questions:

1. What are the current practices and perceived challenges faced by teachers in managing students' digital health in secondary school contexts?
2. What knowledge, skills, and institutional supports are necessary to prepare teachers for effective digital health management?
3. How can a strategic framework be designed to systematically enhance teacher capacity for supporting students' digital health?

To enhance clarity and facilitate comparison, the data are presented in two broad categories: **(a) Teachers' Responses,** and **(b) Other Stakeholders' Responses** (including QAED trainers, headteachers, AEOs, and DEA officials). This structure reflects the diversity of viewpoints and emphasizes the

multifaceted nature of the issue. The rich qualitative insights generated through this process not only deepen the understanding of the current situation in Narowal's educational landscape but also provide a foundation for constructing an evidence-informed and context-sensitive strategic training framework.

Research Question 1: What are the current practices and perceived challenges faced by teachers in managing students' digital health in secondary school contexts?

Teachers' Responses

Theme 1: Absence of Formal Guidelines and Training

Sub-theme 1.1: No official training on digital health

"I have been teaching for 8 years, and we've had many trainings from QAED, but none focused on students' digital habits or health. We are just figuring it out ourselves." (Teacher Govt. High School, Narowal City)

Sub-theme 1.2: Digital health issues handled on a personal level

"If a student shows stress or overuse signs, I try to talk to him privately. But I have no formal process, and it's not part of our responsibilities as per school instructions." (Teacher Shakargarh)

Theme 2: Emerging Behavioral and Psychological Challenges

Sub-theme 2.1: Digital distractions lowering academic performance

"Students are addicted to social media. Even during breaks or group tasks, their minds are on their phones. Their academic focus is dropping." (Teacher Private School, Zafarwal)

Sub-theme 2.2: Signs of anxiety, fatigue, and social withdrawal

"I've seen students become moody, isolated, or overly anxious before class tests. When asked, they say they were online till late watching videos or chatting." (Female Teacher Narowal City)

Theme 3: Teachers' Limited Role in Digital Health Management

Sub-theme 3.1: Pressure to meet academic goals

"Our workload is already high. We are evaluated based on syllabus completion and results. No one talks about students' digital well-being officially." (Teacher Shakargarh)

Sub-theme 3.2: Lack of confidence and knowledge

"We don't know how much screen time is healthy. Sometimes I am not even sure if what the student is doing online is a problem or just modern behavior." (Teacher – Zafarwal)

Other Stakeholders' Responses

Theme 1: Systemic Gaps in Training and Policy

Sub-theme 1.1: Lack of incorporation in teacher development programs

"QAED has developed modules on ICT usage, but digital health is a blind spot. Trainers need to be oriented too." (Teacher Trainer QAED Narowal)

Sub-theme 1.2: Absence of school policies or SOPs

"We do not have any SOPs from the Education Department on managing students' mental or digital health. Principals are also unsure how to deal with such issues." (AEO – Zafarwal)

Theme 2: Institutional Constraints

Sub-theme 2.1: Inadequate staffing for student counseling

"We lack psychologists or counselors in schools. Teachers are expected to play every role without formal support."
(DEA Official Shakargarh)

Sub-theme 2.2: Digital usage monitoring not embedded in inspections

"MEAs and school inspections focus on attendance, lesson planning, and results. Digital health is not even on the radar."
(Headteacher – Narowal City)

Research Question 2: What knowledge, skills, and institutional supports are necessary to prepare teachers for effective digital health management?

Teachers' Responses

Theme 1: Basic Digital Health Literacy

Sub-theme 1.1: Understanding symptoms and triggers

"Teachers should be taught how to identify signs of excessive digital use, like poor concentration, aggression, or irregular sleep. Right now, we just guess."
(Teacher Shakargarh)

Sub-theme 1.2: Education on healthy technology use

"If we know what apps or websites are most harmful or distracting, we can advise students better. We need guidance on this."
(Teacher Narowal)

Theme 2: Classroom Management and Communication Skills

Sub-theme 2.1: Counseling students without judgment

"Scolding doesn't work. I think training in emotional intelligence and counseling techniques would help us deal with these issues more effectively."
(Female Teacher Zafarwal)

Sub-theme 2.2: Managing hybrid environments

"We need to balance between using digital tools for learning and teaching students how not to misuse them. That's a delicate skill."
(Teacher Narowal)

Other Stakeholders' Responses

Theme 1: Need for Systematic Institutional Frameworks

Sub-theme 1.1: Dedicated modules in CPD

"Digital health education must be a required part of teacher training, just like child protection or classroom discipline modules."
(QAED Trainer Narowal)

Sub-theme 1.2: Guidelines for safe digital practices

"We need to create a list of digital do's and don'ts for students and teachers. That would give teachers a reference point."
(AEO Shakargarh)

Theme 2: Collaboration and Stakeholder Engagement

Sub-theme 2.1: Parent-teacher coordination

"If parents allow unrestricted mobile access at home, teachers alone can't control the outcomes. We need joint workshops." (Headteacher Zafarwal)

Sub-theme 2.2: Technical and psychological support

"IT officers and psychologists should co-design training with QAED. Teachers need both the technical and mental health angles." (DEA Official Narowal)

Research Question 3: How can a strategic framework be designed to systematically enhance teacher capacity for supporting students' digital health?

Teachers' Responses

Theme 1: Modular and Practical Framework Design

Sub-theme 1.1: Step-by-step implementation guide

"There should be a toolkit for teachers awareness posters, case studies, checklists, and sample lesson plans on digital balance." (Teacher – Narowal)

Sub-theme 1.2: In-classroom strategies

"I would like short activities on digital wellness that I can include weekly, like reflection exercises or healthy tech habits." (Teacher Shakargarh)

Theme 2: Teacher Empowerment and Recognition

Sub-theme 2.1: Incentives for trained teachers

"Those who complete digital health training should be given certificates, and heads should consider it during performance appraisals." (Teacher Zafarwal)

Sub-theme 2.2: School-level committees

"Each school should form a digital health team led by trained teachers to organize awareness weeks or student sessions." (Female Teacher – Narowal City)

Other Stakeholders' Responses

Theme 1: Strategic Policy Integration

Sub-theme 1.1: Three-tiered structure (Awareness, Prevention, Response)

"We recommend a model that begins with student awareness sessions, includes preventive classroom practices, and defines escalation protocols when digital harm is detected." (QAED Trainer Narowal)

Sub-theme 1.2: Framework integration into QAED's roadmap

"QAED should add this framework under its CPD cycle and provide periodic updates and refresher courses." (Headteacher Shakargarh)

Theme 2: Monitoring, Evaluation, and Sustainability

Sub-theme 2.1: Digital health indicators for school inspections

"MEAs should assess digital health activities during school visits such as awareness boards, student complaints, or parental sessions." (DEA Officer Zafarwal)

Sub-theme 2.2: Evaluation of training outcomes

"Teachers who apply the training should be monitored through student surveys and reflective reports. We need to track impact." (AEO Narowal)

The data revealed a deep awareness among teachers of the problem, but also a frustration due to the lack of training and support. Teachers emphasized the

need for hands-on tools and emotional skills, while other stakeholders focused on institutionalizing training, integrating it with existing QAED frameworks, and establishing monitoring systems. Both groups strongly supported the creation of a three-tiered strategic framework based on:

1. Awareness-building
2. Preventive classroom integration
3. Crisis response mechanisms

Teachers revealed that managing students' digital health was not a formalized or institutionalized responsibility in schools. Despite witnessing behavioral issues such as screen fatigue, distraction, and emotional detachment, they lacked both training and policy-based guidance.

One teacher from Shakargarh mentioned:

"We are only trained in teaching methods or ICT tools, but not in identifying or managing digital stress."

These responses are critically linked to Bandura's Social Cognitive Theory, which highlights the influence of environment and observational learning on behavior. In the absence of structured support, teachers modeled behavior based on trial, error, and informal coping strategies demonstrating low self-efficacy in managing digital health. This validates Bandura's assertion that individuals with low perceived efficacy often avoid challenging tasks (Bandura, 1997). Further, as Rideout and Robb (2018) found in U.S.-based contexts, students' digital lives deeply affect their academic and emotional health. However, in the Pakistani context, such issues are compounded by the absence of digital health literacy policies creating a local research gap this study addresses directly.

To identify the knowledge, skills, and institutional supports needed to prepare teachers for effective digital health management.

Participants outlined a wide gap between teaching practice and digital health management. Teachers emphasized their need for: Foundational digital health knowledge (screen-time limits, cyber safety, digital balance),

- Training in counseling and empathetic communication,
- Support from school leadership and policy systems.

A female teacher in Zafarwal said:

"Students suffer from anxiety due to social media issues, but we don't know how to approach them or what to say."

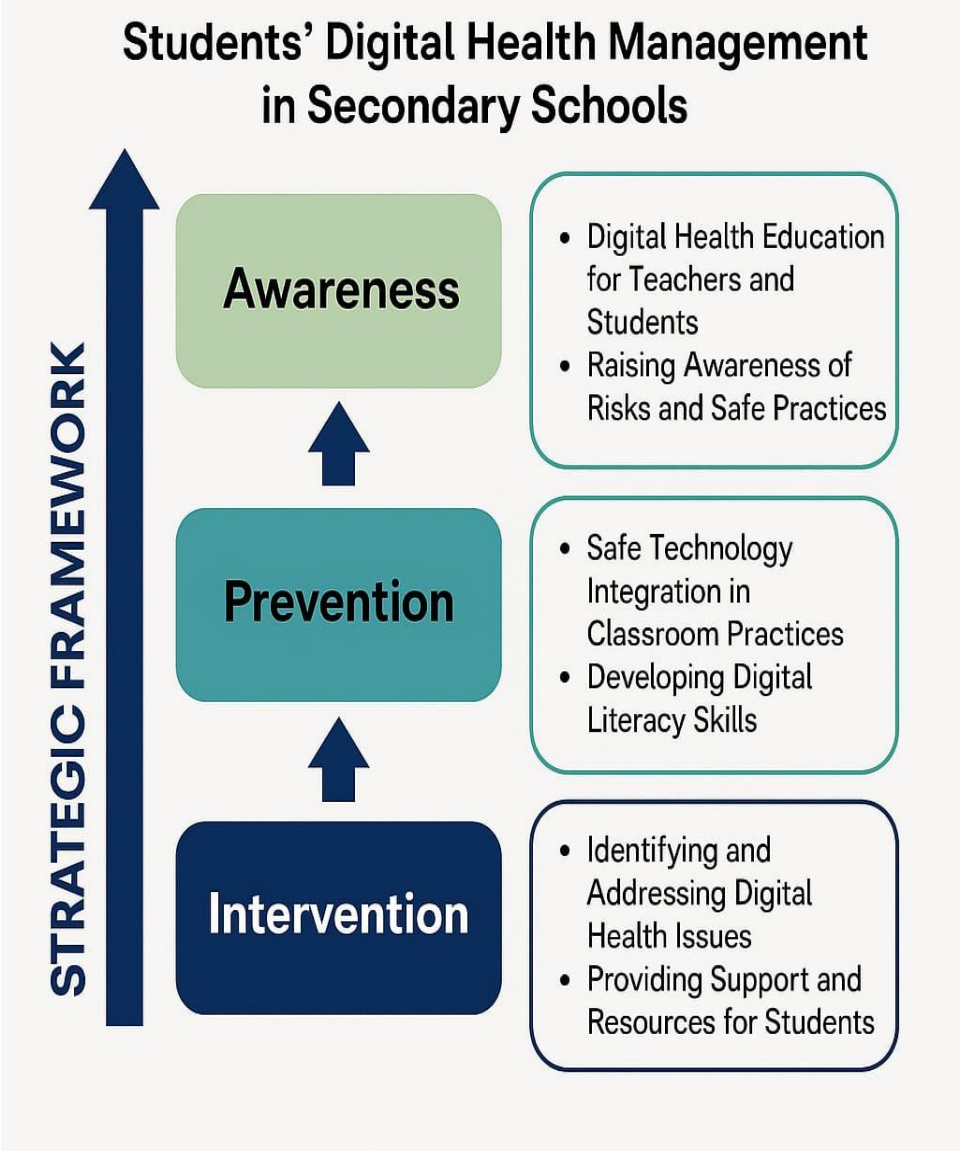
This finding resonates with Digital Health Literacy Theory, which argues that digital well-being depends not only on access to information but also on the ability to interpret, evaluate, and use it appropriately (Norman & Skinner, 2006). Teachers, in this study, reported limited digital health literacy and minimal professional development in this area. This situation also demonstrates a shortfall in Transformative Learning Theory (Mezirow, 1991), which emphasizes critical reflection and perspective transformation. Teachers are currently operating in a traditional paradigm, unaware of how to support digital well-being. The data show that when made aware of digital health risks, they expressed willingness to change their practice a critical first step in

transformative learning. Moreover, institutional leaders stressed the lack of structured CPD modules and school-level policies. This aligns with Selwyn and Aagaard's (2020) critique that schools often fail to adopt digital safety strategies systematically leaving educators unsupported and students vulnerable.

To develop a strategic framework for enhancing teacher capacity to support students' digital health in secondary schools.

Teachers and stakeholders proposed a three-layered strategic model based on:

1. **Awareness**: digital health education for both teachers and students,
2. **Prevention**: embedding safe tech practices into classroom routines,
3. **Intervention:** identifying and responding to digital health issues through trained procedures.



Teachers recommended that QAED develop **training modules**, activity toolkits, and monitoring protocols. One teacher trainer noted:
"QAED should introduce a separate digital health training module under the CPD umbrella, and it should be mandatory."
This recommendation strongly supports the integration of institutional learning systems with teacher empowerment a combination supported by Bandura's reciprocal determinism: behavior change (digital health practices), environmental influence (school policy and training), and personal agency (teachers' belief in their role) must interact. The data also suggest that such a framework must include monitoring indicators, community engagement, and policy-level accountability. These findings extend the framework proposed by Garmendia et al. (2012), who focused on student digital resilience but did not link it to teacher capacity building a contribution this study makes explicitly.

Table 1: ***Synthesis of Discussion with Research Questions and Theoretical Framework***

Research Question	Main Themes	Supporting Theories	Literature Alignment
What are the current practices and challenges?	Fragmented approaches, No training, Reactive behavior	Bandura's Self-Efficacy, Observational Learning	Chassiakos et al., 2016; Selwyn, 2016
What do teachers need?	Digital health literacy, Counseling skills, Institutional backing	Digital Health Literacy Theory, Transformative Learning Theory	Howard et al., 2021; Norman & Skinner, 2006
How can a framework be designed?	3-Tier Strategy (Awareness, Prevention, Intervention), QAED training integration	Reciprocal Determinism (Bandura)	Garmendia et al., 2012; Tondeur et al., 2012

While international literature highlights the importance of digital well-being (Livingstone & Helsper, 2007; Rideout & Robb, 2018), teacher-focused strategic interventions particularly in developing countries are still limited. In Pakistan, the lack of structured frameworks, teacher training modules, and cross-institutional collaboration further widens the gap. This study fills that gap by:

a) Documenting the lived experience of teachers and school leaders in managing student digital health,
b) Identifying the specific knowledge and institutional needs of Pakistani teachers,

c) Proposing a strategic training framework rooted in field data and grounded in theory.

The data clearly demonstrate that teachers in secondary schools are aware of the digital health issues students face but lack the training, confidence, and structural support to address them effectively. Institutional stakeholders corroborated the absence of policy integration, monitoring, and inter-agency collaboration. By integrating theoretical models of social learning, literacy, and transformative practice, this research offers a localized, theory-backed, and empirically validated strategic framework for teacher training. It positions teachers not just as digital tool users, but as digital health advocates and mentorsa critical transformation needed in 21st-century education.

Conclusion

The exponential integration of digital technologies in education has reshaped the teaching-learning landscape globally, offering both opportunities and challenges. One such critical challenge is the rise in digital health concerns among students, including screen addiction, emotional distress, physical fatigue, and exposure to harmful digital content. This research set out to explore the current practices, training needs, and institutional gaps that affect how secondary school teachers in Pakistan specifically in District Narowal, Shakargarh, and Zafarwal manage students' digital health, and to propose a strategic framework for teacher training in this domain. The study revealed that while teachers are increasingly encountering the consequences of poor digital health in their classrooms such as lack of attention, sleep disturbances, digital bullying, and psychological stress they lack formal training, policy guidance, and systemic support to address these issues effectively.

Most teachers have had to rely on personal judgment and informal strategies, often feeling unprepared and unsupported in this critical area. Their experiences underscored a reactive and fragmented approach to managing digital health. The findings also identified a significant gap in teachers' digital health literacy, including insufficient understanding of safe screen time, cyber-wellbeing, and the emotional impact of digital overuse. Teachers expressed a clear demand for professional development in areas such as counseling techniques, empathetic communication, safe tech practices, and student engagement strategies. Furthermore, both teachers and institutional stakeholders agreed on the need for a systematic, context-sensitive framework embedded in existing professional development programs, such as those offered by QAED.

Drawing on Bandura's Social Cognitive Theory, the study emphasized the importance of enhancing teachers' self-efficacy and leveraging the environment-behavior-personal agency triad to effect meaningful change. Theoretical constructs from Digital Health Literacy Theory further supported the need to equip educators with not just knowledge, but critical thinking and application skills related to digital safety and well-being.

Additionally, Transformative Learning Theory highlighted that teacher training should not only transmit knowledge but encourage critical reflection, emotional awareness, and a shift in mindset toward supporting student wellness holistically. The data culminated in the development of a proposed three-tiered strategic framework focused on: Awareness building foundational understanding of digital health for both teachers and students, Prevention integrating healthy digital habits and literacy into regular teaching practices, and Intervention equipping teachers with the tools and support needed to respond to digital health crises or red flags effectively. Importantly, the framework also recommends institutional mechanisms such as monitoring tools, role-specific training modules, stakeholder collaboration (including parents and counselors), and regular evaluation through QAED and district education offices.

This research contributes significantly to the academic and policy discourse on digital education in Pakistan by addressing an area largely underexplored the role of teachers in managing students' digital health. It offers practical insights for educational planners, policymakers, school heads, and teacher training institutions to take immediate and long-term actions. Furthermore, by grounding the framework in theory and field data, the study ensures relevance, scalability, and sustainability. In conclusion, for Pakistan to truly embrace the promise of digital education, it must also protect and promote the well-being of its digital learners. Empowering teachers through strategic training and institutional support is not just desirable it is essential. This research provides the evidence and the pathway to begin that transformative journey.

Recommendations

1. **Integrate Digital Health Modules into Teacher Training Programs:** Teacher training institutes like QAED should embed structured digital health management modules into their Continuous Professional Development (CPD) frameworks.
2. **Develop School-Based Digital Health Policies:** Educational authorities should mandate each secondary school to formulate and implement a formal digital health policy aligned with student well-being standards.
3. **Provide Counseling Skills and Empathy Training for Teachers:** Teachers should receive training in basic counseling, emotional intelligence, and communication strategies to effectively support students experiencing digital stress.
4. **Establish Monitoring and Evaluation Mechanisms:** Regular assessment tools and indicators should be developed to evaluate the effectiveness of teachers' digital health interventions and training impact.

5. **Promote Parent Teacher Collaboration on Digital Practices:** Schools should organize joint workshops and awareness sessions with parents to ensure consistent digital health practices across home and school environments.
6. **Create Digital Health Resource Toolkits for Schools:** The education department should provide schools with practical toolkits including posters, checklists, classroom activities, and reporting templates on digital wellness.
7. **School-Level Digital Health Committees:** Each school should form a dedicated committee, led by trained teachers, to plan, implement, and monitor digital health promotion initiatives.
8. **Include Digital Well-Being in School Inspections:** Monitoring and Evaluation Assistants (MEAs) should include digital health indicators in their regular inspection checklists to ensure accountability.
9. **Foster Collaboration with IT and Mental Health Experts:** Teacher training programs should collaborate with psychologists and digital safety professionals to deliver multidisciplinary training.
10. **Encourage Reflective Practice and Peer Learning:** Teachers should be encouraged to engage in reflective journaling and participate in peer discussion groups to share strategies and experiences related to student digital health.

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