

Digital Screen Addiction and Psychological Well-Being among Ghanaian Basic School Children: A School Management Perspective

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Abstract

The digital revolution has fundamentally transformed childhood experience across the globe. In Ghana, rapid mobile internet penetration, the proliferation of low-cost smartphones, and COVID-19-induced remote learning have dramatically intensified basic school children's exposure to digital screens. Emerging evidence links digital screen addiction (DSA) to significant impairments in children's psychological well-being encompassing emotional, cognitive, social, and behavioural dimensions. Yet, school management responses in Ghanaian basic schools remain underdeveloped and largely uncoordinated. This narrative literature review synthesizes global and sub-Saharan African evidence on digital screen addiction and its psychological well-being consequences among basic school children (ages 5–15), critically examines existing school management frameworks, and proposes a School-Based Digital Wellness Management Framework (SBDWMF) for Ghanaian basic schools. A narrative synthesis approach was employed. Literature was sourced from PubMed, Google Scholar, Scopus, PsycINFO, African Journals Online (AJOL), and grey literature from the WHO, UNESCO, UNICEF, Ghana Education Service (GES), Ghana Health Service (GHS), and the Ministry of Education. Peer-reviewed empirical studies, systematic reviews, meta-analyses, and policy documents published from 2010 to 2024 were included, with a total of 72 sources forming the evidence base. DSA is prevalent among basic school-age children globally, with pooled prevalence estimates ranging from 19% to 38% depending on measurement tools and contexts. Excessive screen exposure is consistently associated with psychological distress, anxiety, depression, attentional difficulties, emotional dysregulation, impaired self-esteem, peer-relationship deficits, and poor academic well-being. In Ghana, contextual risk amplifiers, including parental digital literacy gaps, absent school mental health services, post-COVID normalization of extended screen use, and fragmented policy, compound the psychological burden. School management frameworks in Ghanaian basic schools are largely inadequate to address DSA, with critical deficits in policy, counselling capacity, teacher training, and parental engagement. DSA poses a mounting psychological well-being challenge for Ghanaian basic school children, demanding an urgent, evidence-informed school management response. The proposed six-pillar SBDWMF offers a practical governance architecture for Ghanaian basic school heads, district education officers, and national policymakers to address DSA comprehensively within the school setting.

Keywords: Digital Screen Addiction; Psychological Well-Being; Basic School Children; Ghana; School Management; Digital Wellness Policy; Child Mental Health; Screen Time

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INTRODUCTION

The twenty-first century has ushered in an unprecedented technological transformation of childhood. Children across the globe are now born into a digitally saturated environment in which screens such as smartphones, tablets, televisions, gaming consoles, and computers are omnipresent features of home, school, and community life. While digital technology has expanded access to information, facilitated new forms of learning, and opened channels of social connection, its pervasive presence has simultaneously generated a new category of childhood vulnerability: digital screen addiction (DSA).

Digital screen addiction, broadly defined as a pattern of compulsive, excessive, and poorly regulated engagement with screen-based devices or digital content that disrupts physical health, psychological functioning, social development, and educational participation (Lam, 2014; Billieux et al., 2015), has attracted growing attention in global child health and educational research. The neurological and psychological developmental plasticity of childhood, precisely the period during which neural reward circuits, executive function, emotional regulation, and social cognition are being formed, renders children uniquely susceptible to the habit-forming architecture of digital platforms (Radesky & Christakis, 2016; Christakis, 2009).

In Ghana, the convergence of rapidly expanding mobile internet access, a burgeoning smartphone market, and the COVID-19 pandemic's normalization of screen-based learning has created a digital environment of intense intensity and minimal governance for basic school children. The Ghana Statistical Service (2023) reports internet penetration at approximately 58% nationally and over 80% in urban areas, with many basic school-age children having unsupervised daily access to smartphones for periods that significantly exceed international health guidelines. Despite this landscape, the school management response in Ghanaian basic schools in terms of policy, counselling infrastructure, teacher capacity, and parental engagement remains largely inadequate.

Psychological well-being, encompassing emotional regulation, self-esteem, anxiety and depression levels, social competence, cognitive engagement, and a sense of academic purpose, is central to children's developmental trajectory and educational achievement (Seligman, 2011; WHO, 2020). The emerging evidence linking DSA to impaired psychological well-being across these multiple domains thus raises urgent questions for school management: What is the nature and magnitude of DSA's psychological impact on basic school children? What should school management do about it? And what framework can guide effective institutional action?

This narrative review addresses these questions by synthesizing global, African, and Ghanaian evidence on DSA and psychological well-being in basic school children, critically appraising the school management landscape, and proposing a contextualized School-Based Digital Wellness Management Framework (SBDWMF).

Objectives of the Review

The specific objectives of this review are:

- i. To synthesize global and sub-Saharan African evidence on the prevalence, patterns, and determinants of digital screen addiction among basic school-age children.
- ii. To examine the multidimensional psychological well-being consequences of DSA in children, with emphasis on the Ghanaian educational context.

- iii. To critically appraise existing school management frameworks, policies, and practices addressing DSA and child psychological well-being in Ghanaian basic schools.
- iv. To propose an evidence-based School-Based Digital Wellness Management Framework (SBDWMF) for Ghanaian basic schools.

Scope and Review Methodology

This review adopts a narrative synthesis methodology (Green et al., 2006), selected for its suitability in synthesizing heterogeneous, multi-disciplinary literature on a complex topic. Unlike systematic reviews, narrative synthesis prioritizes interpretive coherence and thematic depth over exhaustive quantitative pooling, making it well-suited to the multi-layered intersection of technology, child psychology, and educational management that this review addresses.

Literature was retrieved from PubMed/MEDLINE, Google Scholar, Scopus, PsycINFO, and African Journals Online (AJOL). Institutional reports and grey literature were sourced from the WHO, UNICEF, UNESCO, the Ghana Education Service (GES), the Ghana Health Service (GHS), the Ministry of Education, Ghana, and the Ministry of Communications and Digitalisation. Search terms included combinations of: 'digital screen addiction children,' 'screen time psychological well-being,' 'smartphone addiction school children Ghana,' 'internet addiction child mental health Africa,' 'school management digital wellness,' 'basic school children Ghana mental health,' and 'child screen addiction policy.' Peer-reviewed studies, meta-analyses, systematic reviews, and policy documents published between 2010 and 2024 were included. Seventy-two sources form the review's evidence base.

THEORETICAL AND CONCEPTUAL FRAMEWORK

This review is anchored in three complementary theoretical traditions that collectively illuminate the aetiology of DSA, its psychological consequences, and the institutional responses required.

The Behavioural Addiction Framework

Griffiths' (2005) components model of addiction, comprising salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse, provides the foundational conceptualization of DSA as a behavioural addiction equivalent to substance use disorders in its neurological mechanisms. Central to this framework is the role of intermittent reinforcement: digital platforms, through features such as social validation notifications, algorithmically personalized content feeds, and gaming reward structures, deliver unpredictable reward schedules that are particularly effective at sustaining compulsive engagement (Griffiths, 2005; Twenge & Campbell, 2019). For children whose prefrontal cortical development, responsible for impulse control, decision-making, and delayed gratification, is incomplete, these mechanisms pose extraordinary vulnerability.

The World Health Organization's recognition of 'gaming disorder' in ICD-11 (WHO, 2019) and the DSM-5's inclusion of Internet Gaming Disorder as a condition warranting further research (APA, 2013) signal the increasing clinical legitimacy of the behavioural addiction framework for DSA, providing a scientific basis for school management and public health responses.

Ecological Systems Theory

Bronfenbrenner's (1979) Ecological Systems Theory situates child development within nested interacting systems: the microsystem (immediate family and school environments), mesosystem (interactions between home and school), exosystem (community structures, media), and macrosystem (cultural norms, national policies). This framework is foundational to a school management perspective on DSA: it illuminates why addressing DSA requires simultaneous action at multiple ecological levels within the classroom (microsystem), between school and home (mesosystem), in community digital norms (exosystem), and in national policy architecture (macrosystem).

Bronfenbrenner's framework also draws attention to the chronosystem, the dimension of time and historical change. The rapid technological change of the past decade represents a chronosystemic shift that has outpaced the adaptive capacity of schools, families, and policy institutions, creating the governance vacuum that this review seeks to address.

The PERMA Model of Psychological Well-Being

Seligman's (2011) PERMA model, Positive Emotions, Engagement, Relationships, Meaning, and Achievement, offers a multidimensional framework for conceptualizing psychological well-being in children that extends beyond the mere absence of mental illness. This review adopts PERMA as its organizing lens for the psychological well-being section, because it captures precisely the domains most consistently disrupted by DSA: positive emotions are impaired by anxiety and depression; engagement is undermined by attentional deficits; relationships are eroded by social withdrawal; meaning and purpose are diminished by displaced recreational and creative activities; and achievement is compromised by academic decline.

The PERMA model also has practical utility for school management: it translates the psychological well-being impacts of DSA into actionable educational outcomes that school heads and teachers can observe, measure, and address within their institutional mandates.

DIGITAL SCREEN ADDICTION IN CHILDREN: CONCEPTUALIZATION, MEASUREMENT, AND PREVALENCE

Defining Digital Screen Addiction

The literature employs several overlapping constructs: 'internet addiction,' 'problematic screen use,' 'smartphone addiction,' 'gaming disorder,' and 'social media addiction' that share core features of compulsivity, loss of control, preoccupation, and functional impairment (Billieux et al., 2015; Kuss & Griffiths, 2017). For this review, the umbrella term 'digital screen addiction' (DSA) is used to encompass compulsive, uncontrolled engagement with any screen-based medium, such as television, smartphone, tablet, gaming console, or computer that impairs cognitive, emotional, social, or educational functioning, irrespective of the specific platform or content type.

The American Academy of Pediatrics (AAP, 2016) has established age-differentiated screen time guidelines: no screen use for children under 18 months (except video-chatting); limited high-quality programming for ages 2–5; and a maximum of two hours of recreational screen time daily for children aged 6 and above. The WHO (2019) similarly recommends no sedentary screen time for children under 2 years and no more than one hour per day for ages 3–4. The

systematic exceedance of these thresholds documented across multiple studies provides a pragmatic operational basis for identifying 'excessive' use.

Measurement of DSA in Children

The measurement of DSA in children presents methodological challenges, as no single universally validated instrument exists for paediatric populations across cultural contexts. The most widely applied instruments include the Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2016), the Smartphone Addiction Scale, Short Version (SAS-SV; Kwon et al., 2013), the Internet Addiction Test (IAT; Young, 1998), the Problematic Media Use Measure (Domoff et al., 2019), and the Screen Time Questionnaire. For school-age children specifically, the Problematic Media Use Measure (PMUM) has been validated for ages 4–11 and is particularly relevant for the basic school context.

A key measurement challenge in Ghanaian and broader African contexts is the absence of locally validated instruments calibrated to the cultural nuances of digital engagement patterns, parental attitudes, and socioeconomic variation. This limits the direct transferability of prevalence estimates from Western studies and underscores the need for locally developed and validated DSA measurement tools, a research priority this review recommends.

Global Prevalence of DSA among School-Age Children

Pooled prevalence estimates of internet addiction or problematic screen use among children and adolescents globally range from 1.2% to 37.9%, with significant variation attributable to measurement tools, age groups, and geographic context (Kuss et al., 2020). A meta-analysis by Cheng and Li (2014) covering 31 nations reported an overall internet addiction prevalence of 6.0%, rising to 10.9% in Asia, historically the region with the highest documented rates. Smartphone-specific addiction prevalence in meta-analytic studies ranges from 19% to 27% among school-age children (Cha & Seo, 2018; Kwon et al., 2013).

Television remains a primary screen medium for younger children globally, with over 60% of children aged 11–15 in a 44-country WHO study watching television for three or more hours on school days — far exceeding evidence-based limits (Inchley et al., 2016). Gaming-specific disorders affect an estimated 3–4% of children globally based on ICD-11 criteria, though rates vary substantially by country (Mihara & Higuchi, 2017).

Prevalence and Patterns in Ghana and Sub-Saharan Africa

Empirical data on DSA specifically among Ghanaian basic school children remain sparse, constituting a significant lacuna in the literature that this review's recommendations seek to address. Evidence available from Ghanaian secondary and tertiary student populations, however, provides important contextual signals. Boateng and Amankwah (2022) found average daily screen time of 6.2 hours among Ghanaian secondary students post-COVID, with 58.4% exceeding WHO-recommended limits. Owusu-Acheaw and Larson (2015) documented an average of 4.3 hours of daily internet use among Ghanaian students, with WhatsApp, YouTube, and mobile gaming dominating usage patterns.

The COVID-19 pandemic represents the most significant single inflexion point in the screen exposure history of Ghanaian basic school children. The GES-mandated shift to broadcast and online learning from March 2020 introduced millions of basic school children to institutionally legitimized extended screen engagement. The post-pandemic period has seen many children continue pandemic-level screen habits even after school resumption, with UNICEF Ghana

(2021) documenting 4–6 hours of daily screen use among urban basic school children, well above pre-pandemic baselines.

Structural drivers of DSA in Ghana include: the rapid proliferation of low-cost Android smartphones (available from as low as GHS 300); the expansion of mobile broadband to all regional capitals and major urban centres; the availability of free or low-cost data bundles marketed specifically to young people; the digital ambitions of the Smart Schools Programme; and crucially, the absence of any national screen time governance framework for children. The Ghana Statistical Service (2023) reports household smartphone ownership at 63.4% nationally and over 80% in urban areas, with unsupervised child access being the norm rather than the exception.

PSYCHOLOGICAL WELL-BEING CONSEQUENCES OF DIGITAL SCREEN ADDICTION

The psychological well-being of basic school children operates across multiple interacting dimensions. Drawing on Seligman's (2011) PERMA model as an organizing framework, this section synthesizes evidence on DSA's impacts on positive emotional states, engagement and cognition, social relationships, sense of meaning, and academic achievement.

Emotional Well-Being: Anxiety, Depression, and Mood Dysregulation

The association between DSA and internalizing disorders in children is one of the most robustly documented findings in the literature. Twenge and Campbell (2019) analyzed data from over 500,000 adolescents and found a dose-dependent relationship between daily screen hours and depressive symptoms: children using screens for five or more hours daily were 66% more likely to present with at least one suicide risk factor compared to minimal users. The relationship persisted after controlling for sociodemographic variables, suggesting a direct psychological effect rather than simple socioeconomic confounding.

Depression and anxiety represent the most consistently identified emotional well-being consequences of DSA across studies from the United States, United Kingdom, South Korea, Nigeria, and Ghana (Lup et al., 2015; Vannucci et al., 2017; Osafo & Akotia, 2021). The mechanisms are multifactorial. Social comparison theory (Festinger, 1954) explains how children's exposure to curated, idealised peer content on Instagram, TikTok, and YouTube generates chronic social comparison, feelings of inadequacy, and anxiety. Fear of missing out (FOMO), the persistent apprehension of being excluded from rewarding social events observed on social media, has been identified as a significant psychological mediator of the screen time-anxiety relationship (Przybylski et al., 2013). Passive screen consumption scrolling without meaningful social interaction has been particularly strongly associated with depression compared to active digital communication (Verduyn et al., 2015).

Mood dysregulation, including irritability, emotional outbursts, and low frustration tolerance, is frequently reported in DSA-affected children and is theorized to result from the withdrawal of dopaminergic stimulation when devices are removed. This behavioural profile disrupts classroom environments, family dynamics, and peer relationships, compounding the psychological harm (Lam, 2014). In Ghana, Osafo and Akotia (2021) reported growing rates of emotional disturbance and mood-related presentations among urban school children, with informant interviews consistently implicating smartphone and gaming exposure as contributing factors.

Cognitive Well-Being: Attention, Memory, and Executive Function

The developing brain's executive function network, encompassing attention regulation, working memory, inhibitory control, and cognitive flexibility, is among the most vulnerable neurological systems to disruption by excessive screen exposure. The concern stems from the fundamental mismatch between the pace, novelty, and stimulation intensity of digital media and the sustained, effortful cognitive processing required for classroom learning.

A meta-analysis by Cheng et al. (2020) of 19 prospective studies found that children with high television and device exposure during early childhood had significantly elevated rates of ADHD-like symptomatology by school age, with an odds ratio of 1.52 for attention problems. Christakis (2009) proposed a 'overstimulation hypothesis' that the rapid scene changes and high-intensity stimulation of digital media recalibrate the brain's attentional baseline, making the comparative quietness of reading, listening, and reflection feel unrewarding and difficult to sustain.

Working memory deficits have also been associated with DSA. The practice of constant media multitasking, simultaneously managing social media notifications, gaming stimuli, and communication messages, has been shown to impair the consolidation of information into long-term memory, with children who multitask heavily on digital devices performing significantly worse on cognitive assessments than single-task peers (Uncapher et al., 2017). In the Ghanaian context, GES classroom assessment data and teacher observation reports increasingly document declining attention spans and rising rates of learning difficulty in urban public basic schools, trends that align temporally with the smartphone proliferation of the past decade (GES, 2022).

Social Well-Being: Peer Relationships, Empathy, and Social Competence

Healthy peer relationships are foundational to children's psychological development, social learning, and sense of belonging. DSA has been consistently associated with social withdrawal, impaired face-to-face social competence, reduced empathy, and loneliness, a paradox given social media's ostensibly connective function.

Uhls et al. (2014) conducted a landmark experimental study demonstrating that pre-adolescent children who spent five days without any screen devices showed significantly greater improvements in recognizing and interpreting nonverbal emotional cues, facial expressions, tone of voice, and body language compared to a screen-using control group. This finding suggests that screen displacement of face-to-face social interaction actively retards the development of social-emotional intelligence. Longitudinal studies in South Korea and the United States further show that children with high smartphone addiction scores report greater peer loneliness and social anxiety at follow-up, even after controlling for baseline social functioning (Cha & Seo, 2018).

For Ghanaian basic school children, the implications are particularly significant within the country's communal cultural framework. Ghanaian cultural identity is deeply rooted in collective values — communal responsibility, respect for elders, and collective decision-making (symbolized in the Akan concept of communalism) that require sophisticated social and emotional competencies. The displacement of communal play, storytelling, and family interaction by individual screen engagement may erode the very social foundations that sustain Ghanaian community coherence (Owusu-Acheaw & Larson, 2015). Qualitative studies report

Ghanaian parents and teachers observing increasing social reticence, reduced participation in communal activities, and declining peer conflict resolution skills among screen-heavy children.

Cyberbullying represents a specific social harm increasingly associated with children's digital engagement in Ghana. A study by Agbeko et al. (2022) found that 34.7% of Ghanaian secondary school students had experienced cyberbullying, with those spending more than four hours daily on social media three times more likely to be victims. The emotional consequences of cyberbullying, including depression, anxiety, social withdrawal, school avoidance, and in extreme cases, suicidal ideation, represent a direct pathway through which DSA impairs children's social and emotional well-being.

Self-Esteem and Identity Development

Middle childhood and early adolescence, the age range of Ghanaian basic school children (5–15 years), are critical periods for self-concept formation and identity development. The social comparison dynamics intrinsic to social media platforms pose significant risks to children's developing self-esteem during this period. Research consistently shows that girls are disproportionately vulnerable: Lup et al. (2015) found that Instagram use was associated with greater depressive symptoms and lower self-esteem in girls, mediated by social comparison with idealized peer images. The 'highlight reel' nature of social media, presenting curated images of peer attractiveness, social popularity, and material achievement, creates systematic distortions of social reality that undermine children's self-evaluation.

The concept of 'digital identity pressure' has emerged in the literature to describe the psychological burden borne by children as they navigate the expectation of presenting a compelling, socially validated online persona. For children in Ghana navigating the intersections of digital culture and traditional identity expectations, this pressure may be particularly intense and psychologically taxing (Boateng & Amankwah, 2022).

Sleep and Its Psychological Cascades

Sleep is the foundational restorative process underpinning every dimension of children's psychological well-being, emotional regulation, cognitive consolidation, social functioning, and physical health, and it is one of the most consistently and severely disrupted aspects of child health associated with DSA. The mechanisms are well-established: blue-light emission from screens suppresses melatonin production and disrupts circadian rhythm; cognitively and emotionally stimulating screen content raises cortisol and physiological arousal, delaying sleep onset; and the social immediacy of messaging platforms creates normative pressure to remain connected late into the night (Hale & Guan, 2015).

A systematic review by Hale and Guan (2015) of 67 studies found that all forms of screen-based media use were associated with delayed bedtime, reduced total sleep duration, and impaired sleep quality in children and adolescents. Children receiving less than the recommended 9–11 hours of nightly sleep exhibit significantly elevated rates of irritability, depression, anxiety, impaired learning consolidation, reduced immune function, and heightened risk of obesity (Paruthi et al., 2016). In Ghana, Asante and Agyemang (2019) found that 62% of urban basic school children reported screen use within 1 hour of bedtime, with 44% receiving fewer than 8 hours of sleep on school nights, reflecting a prevalence of sleep insufficiency with profound psychological and educational consequences.

Academic Well-Being and School Engagement

Academic well-being, the child's experience of school as purposeful, engaging, and achievement-oriented, is both a component and a determinant of broader psychological well-being. DSA compromises academic well-being through multiple converging pathways: reduced homework time (displacement effect), impaired attention and memory (cognitive effect), disrupted sleep (restorative effect), and reduced intrinsic motivation for effortful learning activities (reward recalibration effect) (Weis & Cerankosky, 2010; Sharif & Sargent, 2006).

An experimental study by Weis and Cerankosky (2010) found that boys who received video game systems showed significantly lower reading and writing scores four months later compared to a control group, providing strong causal evidence for the educational displacement hypothesis. In Ghana, National Education Assessment (NEA) data show persistent literacy and numeracy gaps in urban schools where digital access is greatest, suggesting that unmanaged screen exposure may be displacing educational activity rather than enhancing it (Ministry of Education, Ghana, 2023). Teacher reports from Ghanaian basic schools increasingly document declining homework completion rates, reduced reading engagement, and diminished participation in creative activities among screen-heavy students (Asare & Danquah, 2017).

CONTEXTUAL RISK FACTORS: THE GHANAIAN BASIC SCHOOL ENVIRONMENT

Digital Penetration without Child Protection Governance

Ghana's digital infrastructure has expanded at a pace that has outrun governance. As of 2023, internet penetration stands at approximately 58% nationally (Ghana Statistical Service, 2023), mobile subscriptions exceed 40 million, and the national fibre backbone reaches all regional capitals. The Digital Ghana Agenda and Smart Schools Programme reflect ambitious commitments to technology-driven educational progress. Yet this rapid digitalization has proceeded without any national framework for child screen time governance, digital content regulation for children, or digital wellness integration in basic school management, a critical governance deficit.

The COVID-19 Legacy: Normalized Screen Dependence

Ghana's school closure from March 2020 to January 2021 represents the most consequential single driver of DSA risk among current basic school children. The GES deployed television, radio, and online platforms as educational continuity mechanisms, exposing millions of children as young as five to daily screen engagement as an institutionally legitimized learning behaviour. While educationally necessary, this period established screen-dependent habits that have proven resistant to post-pandemic reversal. UNICEF Ghana's (2021) post-pandemic assessment found that urban basic school children continued averaging 4–6 hours of daily recreational screen use even after school resumption, with parents reporting significant difficulty re-establishing pre-pandemic screen boundaries.

Parental Digital Literacy and Supervision Gaps

Many parents of Ghanaian basic school children, particularly in peri-urban and low-income contexts, have a limited understanding of DSA risks, their psychological manifestations, or evidence-based screening governance strategies. Digital engagement is frequently interpreted

as an index of educational modernity and socioeconomic aspiration, creating a cultural environment in which screen restriction is perceived as disadvantaging children educationally and socially (Asante & Agyemang, 2019). Parental supervision of children's digital content and duration is limited, with many children having unsupervised device access during homework time, evenings, and weekends.

School Mental Health Infrastructure Deficits

Ghanaian basic schools are institutionally ill-equipped to identify, respond to, or manage DSA-related psychological presentations. The student-to-school counsellor ratio in public basic schools is estimated to exceed 1:5,000 compared to the WHO-recommended standard of 1:250, and counsellors where present have typically not been trained in digital wellness or behavioural addiction (WHO, 2020; GES, 2022). Mental health literacy among basic school teachers is low, referral pathways to child psychiatry or psychology services are largely absent, and social stigma continues to suppress help-seeking among affected families.

Policy and Management Framework Gaps

A critical policy audit of the Ghanaian basic school management landscape reveals significant gaps at every level. The Basic Education Curriculum Framework (GES, 2019) does not include digital health literacy as a curriculum component. The National Child and Adolescent Health Policy (2015) predates the current digital context and contains no provisions on DSA or digital mental health. The Ghana Mental Health Act (Act 846, 2012) focuses on adult clinical psychiatry and provides no school-based or child-specific provisions. The Smart Schools Programme deploys devices without digital wellness accompaniment. School Management Committees and headteachers lack standardized guidance, training, or resources for DSA governance.

SCHOOL MANAGEMENT PERSPECTIVES: GLOBAL LESSONS AND GHANAIAN REALITIES

The School as a Strategic Governance Locus

Schools occupy a uniquely strategic position in the governance of children's digital health. Unlike family and community settings, schools offer structured environments with legitimate authority, daily child engagement, teacher-mediated relationships, and institutional accountability frameworks. The school is the one setting in which virtually all basic school children, regardless of socioeconomic background, can be reached with digital wellness interventions. International evidence increasingly supports the school as the optimal locus for primary prevention of DSA and promotion of digital psychological well-being (Griffiths & Kuss, 2019; Shapiro & Margolin, 2014).

International School Management Models

Several countries have developed school management approaches to DSA that offer instructive lessons for Ghana:

South Korea: The Ministry of Education mandates 'smart media addiction prevention education' in all public schools from the primary level, with designated school counsellors trained in internet addiction assessment and intervention. The Korea Internet and Security

Agency (KISA) provides standardized screening tools and referral protocols for schools (Choo et al., 2015).

France: The 2018 Loi Pour une École de la Confiance bans smartphones in primary and secondary schools, a policy credited with improving classroom attention, reducing cyberbullying incidents, and increasing pupil-to-pupil social interaction (Beland & Murphy, 2016).

Australia: State education departments have integrated digital wellness into school health and wellbeing frameworks, with tools such as the 'Digital Wellbeing Toolkit' providing school heads with structured guidance on policy development, parent communication, and teacher professional development (Griffiths & Kuss, 2019).

United Kingdom: Ofsted (the schools' inspectorate) includes children's online safety and digital wellbeing in its school inspection framework, creating institutional accountability for school management responses to digital risks.

Current School Management Practice in Ghanaian Basic Schools

School management responses to DSA in Ghanaian basic schools are informal, inconsistent, and largely reactive. A minority of private schools — particularly those serving upper-income families have implemented smartphone bans during school hours, parent education sessions on digital safety, and selective digital wellness content in their health education programmes (Ghana Independent Schools Association, 2023). Public basic schools, which serve the overwhelming majority of Ghana's approximately 5.4 million basic school enrollees, operate without standardized policies on student device use, and head teachers typically lack the authority, training, or resources to implement DSA governance measures.

The School Management Committee (SMC), a statutory governance body in every Ghanaian basic school comprising the head teacher, teacher representatives, parent representatives, and community members, represents an underutilized governance infrastructure for DSA management. SMC mandates include responsibility for the overall welfare of pupils, including health and safety, a mandate that, properly interpreted, encompasses digital psychological well-being. Yet SMC members almost universally lack training or resources related to DSA, and digital wellness has not featured in any GES guidance to SMCs.

PROPOSED SCHOOL-BASED DIGITAL WELLNESS MANAGEMENT FRAMEWORK (SBDWMF)

Grounded in the evidence synthesized in this review, international best practices, and the specific governance realities of Ghanaian basic schools, the following six-pillar School-Based Digital Wellness Management Framework (SBDWMF) is proposed. The framework is designed to be implemented within existing school governance structures, head teacher leadership, SMC oversight, District Education Offices, and GES national governance without requiring the creation of entirely new institutional architectures.

Pillar 1: School Policy Development and Governance

Each basic school should develop a formal Digital Wellness and Child Protection Policy, approved by the SMC and reviewed annually. The policy should establish: clear screen-free zones and times within the school compound; a code of conduct for student device use where

devices are permitted; a protocol for responding to suspected DSA cases and cyberbullying incidents; and a framework for parental engagement on digital wellness. The GES should provide a national model policy template and implementation guidance to all District Education Offices for dissemination to schools.

Pillar 2: Digital Health Literacy in the Curriculum

The Ghana Education Service should integrate digital health literacy into the basic school curriculum from Primary 3 through JHS 3, embedded within the Health and Physical Education subject area. Age-appropriate content should cover: what DSA is and its psychological signs; the brain science of digital reward systems in child-friendly language; healthy screen habits and screen-free activities; cyberbullying recognition and reporting; and emotional self-regulation in digital environments. The National Council for Curriculum and Assessment (NaCCA) should lead the curriculum integration, with teacher resource materials developed and distributed nationally.

Pillar 3: School-Based Counselling and Psychological Support

Every basic school, beginning with those in district capitals and major urban centres, should have access to a trained school counsellor with competencies in child mental health, digital wellness, and DSA identification and first-line intervention. Where a dedicated counsellor is unavailable, a designated teacher welfare coordinator should be trained in basic DSA screening and first-line support, with a clear referral pathway to district-level mental health services. The GES should work with the Ghana Psychology Council and the Ghana Counselling Association to develop an accredited school counsellor training module on child digital wellness.

Pillar 4: Teacher Professional Development

Pre-service teacher training programmes at all Colleges of Education should incorporate digital health literacy, child DSA awareness, classroom screen management, and recognition of DSA-related psychological presentations as core competencies. The National Teaching Council (NTC) should include digital wellness competence within the Ghana Teacher Professional Standards framework. The GES should mandate an annual in-service professional development session on digital wellness for all basic school teachers, delivered through the existing District-level In-Service Training (INSET) infrastructure.

Pillar 5: Parental Engagement and Community Mobilization

Parent-Teacher Associations (PTAs) and SMCs should be equipped with standardized digital wellness education materials, including practical screen governance guidance for homes. An annual 'Digital Wellness Family Day' at the school level, modelled on existing health days, should be institutionalized to engage parents, share evidence, and build community norms around healthy digital childhoods. Faith-based organizations, community health volunteers, and the National Commission for Civic Education (NCCE) should be engaged as amplifying channels for digital wellness messaging within communities.

Pillar 6: Monitoring, Evaluation, and Research

The GES School Health Programme should incorporate an annual DSA screening component using a validated, contextually appropriate instrument (such as an adapted version of the

Problematic Media Use Measure for Ghanaian basic school children). District Education Officers should review DSA and digital wellness data as part of their annual school performance assessments. The Ministry of Education, in partnership with Ghanaian universities, should commission a national survey on DSA prevalence and psychological well-being among basic school children every three years, to provide an evidence base for ongoing policy development.

DISCUSSION

This review has assembled a compelling, multi-level body of evidence establishing digital screen addiction as a significant and growing threat to the psychological well-being of basic school children globally, and with mounting urgency, in Ghana. The PERMA-framed analysis of psychological well-being consequences demonstrates that DSA's harm is not confined to any single domain but operates across the full spectrum of positive emotional life, cognitive engagement, social relationships, self-esteem, sleep, and academic achievement, precisely the domains that school management exists to nurture and protect.

A central finding of this review is the profound misalignment between the pace of Ghana's digital expansion and the institutional readiness of its basic schools to manage the psychological consequences. Bronfenbrenner's ecological framework illuminates this misalignment as a chronosystemic failure: the technological environment has changed faster than the microsystem (school culture, teaching practice), mesosystem (school-home communication on digital matters), and macrosystem (national policy, regulatory frameworks) have adapted. The SBDWMF proposed in this review is a direct response to this ecological lag, a framework designed to catalyse institutional adaptation at all ecological levels simultaneously.

The proposed framework is distinguished by its grounding in existing Ghanaian governance structures. Rather than recommending the creation of entirely new institutions that carry the risks of resource competition, political resistance, and implementation failure common to ambitious educational reforms, the SBDWMF works within and through the School Management Committee, the District Education Office, the PTAs, the GES national directorate, and the existing teacher professional development infrastructure. This institutional realism is deliberate: sustainable educational governance reform in Ghana requires alignment with existing authority structures and resource flows.

The evidence on cyberbullying, which this review documents at 34.7% prevalence among Ghanaian secondary students (Agbeko et al., 2022), deserves particular attention from school management. Cyberbullying represents a form of peer victimization that is both enabled by and inseparable from DSA: it predominantly affects children with high levels of social media engagement and causes disproportionate psychological harm, including depression, anxiety, school avoidance, and suicidal ideation. School management frameworks must explicitly address cyberbullying as a DSA-related harm, with clear reporting mechanisms, intervention protocols, and anti-stigma cultures that make it safe for affected children to seek help.

The gendered dimensions of DSA and its psychological consequences, with girls showing greater vulnerability to social media-driven depression and self-esteem erosion, while boys present more frequently with gaming addiction and aggressive behavioural dysregulation, suggest that school management responses should be gender-sensitive, tailoring both prevention content and support mechanisms to the different risk profiles of male and female

students. Ghana's existing gender equity commitments in education provide a policy rationale for this differentiated approach.

Limitations of the Review

This narrative review has several limitations. As a narrative rather than a systematic review, it is subject to the possibility of selection bias in literature identification. The dearth of empirical studies specifically on Ghanaian basic school children necessitates reliance on evidence from secondary school and university populations in Ghana and from other African and global contexts, the direct transferability of which should be considered with caution. The policy analysis is based on publicly available documents and may not fully reflect informal school management practices or emerging district-level initiatives. Future research should prioritize validated epidemiological studies of DSA prevalence in Ghanaian basic schools, mixed-methods studies capturing children's and teachers' lived experiences, and implementation research on school-based digital wellness interventions.

CONCLUSION

Digital screen addiction poses a mounting, multidimensional threat to the psychological well-being of Ghanaian basic school children, a threat that operates through emotional, cognitive, social, self-related, sleep-mediated, and academic pathways, and that is amplified by the specific contextual vulnerabilities of Ghana's rapidly digitalizing but governance-lagging basic education environment. The evidence assembled in this review leaves no room for institutional complacency.

Schools are not passive observers of children's digital lives; they are active governance institutions with both the authority and the responsibility to shape the conditions under which children encounter digital technology. The School-Based Digital Wellness Management Framework proposed here offers a practical, contextually grounded, and institutionally realistic roadmap for Ghanaian head teachers, SMC members, District Education Officers, GES national directors, and the Ministry of Education to discharge this responsibility.

The implementation of the SBDWMF will require political will at the national level, financial commitment to school counselling and teacher training, genuine engagement of parents and communities as partners in digital wellness, and ongoing research to build the Ghana-specific evidence base. It will also require a fundamental cultural shift in how digital technology is conceptualized within basic school management: not merely as an educational tool to be adopted uncritically, but as a powerful environmental force to be governed thoughtfully in the service of children's holistic psychological well-being.

The children in Ghana's basic schools today are forming digital habits, psychological patterns, and well-being trajectories that will define their developmental outcomes for decades. The time for deliberate, evidence-based school management action on digital screen addiction is not approaching; it is already overdue.

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