



Teachers' Perspectives on Digital Device Use and Pupils' Socio-Emotional Development in Dodoma City Primary Schools: A Mixed-Methods Study with Demographic Contexts

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Abstract: This paper explored teachers' perspectives on digital device use and pupils' socio-emotional development and classroom social dynamics in Dodoma City, Tanzania, alongside pupils' demographic characteristics. Guided by bioecological and social learning theories, the study employed a concurrent parallel mixed-methods design in four primary schools. Eight class teachers, two from each school, were purposively selected for semi-structured interviews, while 160 pupils completed structured questionnaires. Teacher interviews were analysed thematically, and pupil demographic data were summarised using frequencies and percentages. Most pupils were aged 10–12 years (70.0%), female (56.3%), in Grades Six and Seven (88.1%), and living with both parents (63.8%). Teachers described computers as mainly used in structured school settings, while television and parents' smartphones were common at home. They perceived visual and interactive educational content as supporting comprehension, participation, and engagement. Entertainment-oriented use, particularly gaming, raised concerns about concentration, face-to-face interaction, and classroom participation. Teachers associated these contrasting experiences with the purpose, content, intensity, context, and supervision of use. The demographic findings contextualised teachers' accounts but did not establish associations between pupil characteristics and socio-emotional outcomes. The paper concludes that teachers' perspectives favour purposeful, supervised digital learning balanced with direct social interaction. It recommends teacher development in digital pedagogy and stronger school–home coordination involving parents and guardians across different household arrangements.

Keywords: Technology, Teachers, Well-being, Classrooms, Pupils, Demographics.

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1. Introduction

Digital technologies have become an important part of children's learning, communication, and leisure, with smartphones, televisions, computers, and other digital tools, increasingly shaping the environments in which

children develop (Odgers & Jensen, 2020; Valkenburg & Piotrowski, 2017). In schools, digital devices can expand access to information, provide visual and interactive explanations, and support participation in learning activities (Tondeur et al., 2020). At the same time, the developmental value of technology is not determined by

access alone. The type of content, the purpose of use, the amount of exposure, and the quality of adult guidance influence whether digital engagement supports or interferes with children's social and emotional development (Odgers & Jensen, 2020; Kalmus et al., 2015).

Socio-emotional development includes children's capacity to regulate emotions, establish positive relationships, participate constructively with peers, develop confidence, and respond appropriately within social environments (Bronfenbrenner & Morris, 2006). The classroom is therefore an important setting for understanding the influence of digital technologies because teachers observe pupils' attention, participation, emotional responses, peer interaction, cooperation, and learning behaviour on a daily basis. Teachers also shape the conditions under which digital tools are used at school through instructional choices, classroom rules, supervision, and the organisation of collaborative learning (Tondeur et al., 2020).

Purposeful educational technology can support engagement, communication, collaborative learning, and active participation, particularly when teachers structure digital activities around clear learning goals (Tondeur et al., 2020). Conversely, prolonged or poorly regulated digital engagement may compete with face-to-face interaction, contribute to distraction, and reduce sustained attention, especially where entertainment-oriented use displaces academic and social activities (Kalmus et al., 2015; Twenge & Campbell, 2018). Odgers and Jensen (2020) similarly caution against treating digital technology as uniformly harmful, arguing that effects vary according to individual and contextual conditions.

The relationship between children's digital engagement and socio-emotional well-being is therefore unlikely to be explained by device access alone. Children experience digital technologies within particular developmental, family, school, and cultural contexts. Age, gender, grade level, and living arrangements may influence children's access to devices, opportunities for independent use, parental mediation, and the purposes for which technologies are used (Radesky & Christakis, 2016; Reid Chassiakos et al., 2016).

Age is particularly relevant because children's cognitive, social, and emotional capacities change considerably during middle and late childhood. As children become older, they generally gain greater independence in navigating digital environments. However, greater independence may simultaneously create opportunities for learning and communication as well as greater exposure to inappropriate content, social comparison, cyber risks, and excessive screen engagement. Research on children's digital media use consequently emphasises the importance of developmentally appropriate guidance rather than

treating children as a homogeneous population (Radesky & Christakis, 2016; Valkenburg & Piotrowski, 2017).

Gender may also provide an important contextual dimension. Previous research has identified differences in the ways children engage with digital technologies and in the forms of parental mediation they experience. For example, research on gendered internet mediation demonstrates that children's digital experiences can be shaped by broader patterns of socialisation and family practices (Talves & Kalmus, 2015). Nevertheless, gender differences should not be interpreted as universal or biologically determined because children's digital behaviour is also influenced by culture, family practices, socioeconomic circumstances, access, and individual preferences.

Grade level represents another important developmental and educational context. Pupils in upper primary school increasingly encounter digital technologies for educational purposes while also becoming more independent in their recreational and social use (Radesky & Christakis, 2016). Digital technologies can support communication and learning, but their benefits may be reduced when digital engagement displaces face-to-face interaction, physical activity, sleep, or other developmentally important activities (Reid Chassiakos et al., 2016; Twenge & Campbell, 2018).

Family structure and living arrangements are similarly important. Parents and guardians can mediate children's digital experiences by establishing rules, discussing online activities, monitoring use, and modelling healthy technology habits. The effectiveness of mediation, however, depends more on the nature and quality of parental engagement than simply on the number of caregivers in the household. Contemporary research emphasises the continuing importance of active parental mediation in children's digital lives (Kalmus et al., 2022).

In Tanzania, the integration of information and communication technologies into education has expanded, but access and use remain uneven across schools and households. The Ministry of Education, Science and Technology (MoEST, 2023) identifies ICT as an important component of contemporary teaching and learning, while UNESCO (2022) notes continuing challenges related to infrastructure, access, and effective educational use. Research in Tanzanian higher education has identified equipment, connectivity, policy, and skills barriers to using open educational resources (Mtebe & Raisamo, 2014). Although the educational level differs, these findings provide background for examining the conditions surrounding digital use in primary schools. These realities make teachers' perspectives particularly important because they provide context-specific evidence on how pupils' digital exposure is reflected in classroom learning, behaviour, and social interaction.

Despite the growing literature on children and digital technologies, there remains a need for evidence from African contexts, including Tanzania, where patterns of technology access, family structure, educational provision, and digital literacy may differ from those reported in high-income settings. Understanding the demographic contexts of children's digital experiences is therefore an important first step in developing locally appropriate approaches to digital well-being.

1.1 Statement of the Problem

The expansion of digital technologies in children's lives has created a practical challenge for primary schools: educators are expected to use technology for learning while also safeguarding pupils' attention, relationships, behaviour, and emotional well-being. International evidence shows both opportunities and risks. Structured digital learning can increase participation and provide engaging educational experiences, whereas excessive or entertainment-dominated use may be linked to distraction, reduced concentration, weaker face-to-face interaction, and other socio-emotional difficulties (Tondeur et al., 2020; Twenge & Campbell, 2018). These contrasting outcomes mean that the educational question is not simply whether children use digital devices, but how those devices are used, for what purposes, and under whose guidance.

Although Tanzania has continued to promote ICT integration in education, much of the available discussion has focused on access, infrastructure, digital literacy, and academic use. Less attention has been given to teachers' observations of how pupils' digital experiences relate to socio-emotional development and classroom social dynamics (MoEST, 2023; UNESCO, 2022; Mtebe & Raisamo, 2014). This paper identifies this gap specifically in Dodoma City, where pupils encounter different patterns of digital access between school and home environments. Without teachers' context-based evidence, schools may struggle to design digital practices that preserve the benefits of technology while responding to distraction, reduced interaction, or behavioural concerns.

Furthermore, the demographic characteristics of pupils, including age, gender, grade level, and living arrangements, provide essential contextual information for interpreting their digital experiences and potential socio-emotional outcomes. These characteristics shape the conditions under which children encounter and use digital technologies, yet they have received limited attention in Tanzanian primary school research.

Therefore, this paper explored teachers' perspectives on the influence of digital devices on primary school pupils' socio-emotional development and classroom social dynamics, alongside the demographic characteristics of pupils participating in the broader study in Dodoma City, Tanzania.

2. Literature Review

2.1 Demographic Contexts of Children's Digital Experiences

Age is particularly relevant because children's cognitive, social, and emotional capacities change considerably during middle and late childhood. As children become older, they generally gain greater independence in navigating digital environments. However, greater independence may simultaneously create opportunities for learning and communication as well as greater exposure to inappropriate content, social comparison, cyber risks, and excessive screen engagement. Research on children's digital media use consequently emphasises the importance of developmentally appropriate guidance rather than treating children as a homogeneous population (Radesky & Christakis, 2016; Valkenburg & Piotrowski, 2017).

Gender may also provide an important contextual dimension. Previous research has identified differences in the ways children engage with digital technologies and in the forms of parental mediation they experience. For example, research on gendered internet mediation demonstrates that children's digital experiences can be shaped by broader patterns of socialisation and family practices (Talves & Kalmus, 2015). Nevertheless, gender differences should not be interpreted as universal or biologically determined because children's digital behaviour is also influenced by culture, family practices, socioeconomic circumstances, access, and individual preferences.

Grade level represents another important developmental and educational context. Pupils in upper primary school increasingly encounter digital technologies for educational purposes while also becoming more independent in their recreational and social use. Digital technologies can support communication and learning, but their benefits may be reduced when digital engagement displaces face-to-face interaction, physical activity, sleep, or other developmentally important activities (Reid Chassiakos et al., 2016; Twenge & Campbell, 2018).

Family structure and living arrangements are similarly important. Parents and guardians can mediate children's digital experiences by establishing rules, discussing online activities, monitoring use, and modelling healthy technology habits. The effectiveness of mediation, however, depends more on the nature and quality of parental engagement than simply on the number of caregivers in the household. Contemporary research emphasises the continuing importance of active parental mediation in children's digital lives (Kalmus et al., 2022).

2.2 Teachers' Perspectives on Digital Device Use in Schools

Teachers are central to children's digital experiences in school because they determine when technologies are introduced, how they are linked to curriculum activities, and how pupils interact during technology-supported learning. Digital tools may strengthen classroom participation when they are used to present visual content, organise collaborative tasks, and support information sharing. Tondeur et al. (2020) emphasise the importance of teacher practice in shaping meaningful educational technology use, while Mtebe and Raisamo (2014) show that the availability of infrastructure and institutional support influences how consistently digital tools can be integrated in Tanzanian higher education. These studies suggest that the educational and social value of digital devices depends substantially on the structure surrounding their use.

2.3 Digital Technologies and Classroom Social Dynamics

Digital technologies may also influence classroom social dynamics. When pupils work together around a shared digital task, technology can provide opportunities for communication, problem-solving, and peer support. However, digital engagement can also become individualised or entertainment-oriented, reducing the time available for face-to-face communication and direct peer interaction. Subrahmanyam and Šmahel (2011) argue that digital environments reshape how young people communicate and maintain relationships, while Valkenburg and Peter (2011) show that digital communication can strengthen social connectedness when it complements rather than replaces offline relationships. The social effects of technology are therefore conditional rather than uniform.

2.4 Educational versus Entertainment-Oriented Digital Activities

Concerns are particularly pronounced where digital use is prolonged, highly stimulating, or weakly supervised. Twenge and Campbell (2018) report associations between high levels of screen exposure and lower psychological well-being among children and adolescents. Kalmus et al. (2015) examine parental mediation in relation to excessive internet use among European adolescents, highlighting the relevance of guidance and family context. Gaming and other entertainment activities may provide enjoyment and cognitive stimulation, but excessive engagement may interfere with sleep and academic achievement (Hawi et al., 2018). These findings reinforce the need to distinguish between purposeful educational use and unregulated recreational use.

2.5 Home-School Digital Experiences and Parental Mediation

The home-school relationship is also important because pupils' digital experiences do not begin and end in the classroom. Children may have limited access to computers at school but substantial exposure to television or shared smartphones at home. Parental mediation, family routines, and household digital literacy influence the nature of this exposure (Livingstone & Byrne, 2018; Katz et al., 2018; Mascheroni & Ólafsson, 2016). Teachers consequently encounter pupils whose digital habits are shaped by different home environments. A school-based understanding of socio-emotional effects must therefore consider the interaction between structured classroom use and less predictable out-of-school exposure.

Research on parental mediation demonstrates that what caregivers do with respect to children's digital use—including discussion, guidance, rule-setting, and active engagement—is more informative than household structure alone (Kalmus et al., 2022). The effectiveness of mediation depends more on the nature and quality of parental engagement than simply on the number of caregivers in the household.

2.6 Research Gap

Despite the growth of educational technology, there remains limited empirical evidence focused specifically on how primary school teachers in Dodoma City interpret the socio-emotional and social-interaction consequences of pupils' digital device use. Additionally, the demographic contexts shaping pupils' digital experiences, including age, gender, grade level, and living arrangements, have received insufficient attention in Tanzanian primary school research. This paper addresses these gaps by concentrating on teachers' observations of the devices pupils use, the activities performed with them, the behavioural changes teachers associate with frequent digital exposure, and the demographic characteristics of pupils participating in the broader study.

2.7 Theoretical Framework

This paper was guided primarily by Bronfenbrenner and Morris's (2006) Bioecological Theory of Human Development. The theory explains development as the product of continuing interactions between the child and the multiple environments in which the child participates. For the present study, the school and classroom form part of the child's immediate developmental environment. Teachers, peers, classroom routines, school rules, and the availability of digital technologies therefore interact to shape how pupils experience technology and how that experience is reflected in social and emotional behaviour. The theory is especially useful for explaining why the same digital device may have different implications when used

in a structured classroom lesson and when used for unsupervised entertainment at home.

From this perspective, digital devices should not be considered isolated influences. Children's digital experiences occur within interconnected environments involving the family, school, peer group, community, and broader technological environment. The framework relates the demographic characteristics reported in this paper to the family, digital, and developmental contexts discussed in the literature:

- **Child characteristics:** Age, gender, grade level
- **Family context:** Living arrangement, parental/guardian mediation
- **Digital environment:** Access to devices, frequency of use, purpose of use, content encountered
- **Potential socio-emotional outcomes:** Social interaction, emotional regulation, peer relationships, self-esteem, behaviour, psychological well-being

This framework avoids assuming that age, gender, or family structure directly causes positive or negative socio-emotional outcomes. Instead, these characteristics may shape the conditions under which children encounter and use digital technologies.

The study was also informed by Social Learning Theory, which holds that children can acquire behaviours, attitudes, and emotional responses through observation, imitation, interaction, and reinforcement (Bandura, 1977). Digital content provides additional models of behaviour, while teachers and peers influence how pupils interpret and respond to that content. In a classroom context, teacher guidance can encourage cooperative and purposeful digital practices, whereas weak supervision may allow distracting or socially unproductive patterns of use to dominate. Together, the two theoretical perspectives support an interpretation of digital device use as a context-dependent social experience rather than a purely technological exposure.

3. Methodology

3.1 Research Design

This study employed a concurrent parallel mixed-methods design in which quantitative and qualitative data were collected during the same phase and integrated during interpretation (Creswell & Plano Clark, 2018). The present paper reports on both the qualitative teacher-interview component and the quantitative demographic component of the study. The qualitative strand explored teachers' perspectives on digital devices and pupils' socio-emotional

development within classroom social dynamics, while the quantitative strand described the demographic characteristics of the pupils participating in the study. Focusing on these complementary strands allowed the paper to examine teachers' observations and interpretations in greater depth while also providing contextual information about the pupil population.

3.2 Study Location and Participants

The study was conducted in four primary schools in Dodoma City, comprising public and private school contexts. Eight class teachers participated in semi-structured interviews, with two teachers drawn from each school. Teachers were purposively selected because of their direct involvement with pupils and their ability to observe classroom behaviour, social interaction, attention, and participation. The wider study's sampling framework included teachers responsible for the sampled classes, thereby linking teacher perspectives to the school settings in which pupil data were collected.

Additionally, 160 primary school pupils from the same four schools participated in the quantitative component. The analysed dataset contained 160 complete questionnaires. This describes completeness within the analysed dataset; an overall questionnaire response rate cannot be calculated without the number distributed.

3.3 Data Collection

Qualitative data were collected using semi-structured interviews with open-ended questions. Interview sessions were conducted in English or Kiswahili, depending on participant preference, and lasted approximately 30–45 minutes. The interviews explored teachers' perceptions of the digital devices pupils used, the activities pupils performed with those devices, the educational value of digital technologies, and behavioural or social changes teachers observed among pupils. Language translation and back-translation procedures were used in the broader study to promote conceptual consistency between English and Kiswahili instruments.

Quantitative data were collected using a structured questionnaire administered to participating pupils. The questionnaire collected demographic information, including age, gender, grade level, and living arrangement, along with information concerning digital-device use and socio-emotional well-being.

3.4 Data Analysis

The qualitative data were analysed thematically by identifying recurring patterns of meaning across teachers' accounts. The analysis generated three main themes reported in the dissertation: types of digital devices used by pupils; activities pupils perform using digital devices; and teachers' observations of behavioural changes among

pupils. Trustworthiness was strengthened through procedures reported in the dissertation, including member checking, maintenance of an audit trail, thick description, and researcher reflexivity.

Quantitative data were analysed using frequencies and percentages to summarise pupils' demographic characteristics. Percentages were calculated from category frequencies using the total of 160 pupils and rounded to one decimal place. The demographic profile and interview themes were brought together during interpretation: pupil characteristics described the population within which teachers' classroom observations were situated. This integration provided contextual interpretation rather than individual-level matching or statistical testing of relationships between demographic characteristics and socio-emotional outcomes.

3.5 Ethical Considerations

Ethical approval was obtained from St John's University of Tanzania, and permission was secured from the relevant governmental and educational authorities. Participating teachers were informed about the study's purpose, voluntary nature, and their right to withdraw. Written consent was obtained. Interviews were conducted in private, non-disruptive settings, and participants' identities were protected through codes such as 'Teacher 1' and 'Teacher 2'.

For participating pupils, parental or guardian consent was obtained and pupil assent was sought. Confidentiality and

voluntary participation were maintained. These procedures provided additional safeguards for children participating in the study.

Because this paper is based on eight teachers from four schools and 160 pupils, the findings should be understood as context-specific professional perspectives and descriptive demographic data rather than statistically generalisable estimates or evidence of causality.

4. Results and Discussion

This section presents the findings from the teacher interviews and pupil questionnaires and discusses them in relation to the literature and theoretical framework. The analysis shows that teachers did not describe digital technologies as uniformly positive or negative. Instead, their perspectives were organised around where pupils accessed devices, what they did with them, and how the intensity and purpose of digital engagement were reflected in classroom behaviour and social interaction. The demographic findings provide essential context for interpreting these teacher perspectives.

4.1 Demographic Characteristics of Pupils

A total of 160 pupils participated in the study. All questionnaires were complete, and no missing responses were recorded. The demographic characteristics examined included age, gender, grade level, and living arrangement.

Table 1: Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage
Age	7–9 years	19	11.9
	10–12 years	112	70.0
	13–15 years	29	18.1
Gender	Female	90	56.3
	Male	70	43.8
Grade	Grade 3	19	11.9
	Grade 6	62	38.8
	Grade 7	79	49.4
Living Arrangement	Both parents	102	63.8
	Mother only	15	9.4

Variable	Category	Frequency	Percentage
	Father only	14	8.8
	Guardian/other	29	18.1
Total		160	100.0

Source: Field data (2026). *Note.* $N = 160$ for each variable. Percentages are rounded independently to one decimal place and may not sum to exactly 100.0%. The combined proportion for Grades Six and Seven is calculated from their combined frequency (141/160), not by adding rounded percentages.

4.1.1 Age Distribution

The findings show that the majority of respondents were aged 10–12 years (70.0%), followed by those aged 13–15 years (18.1%). Pupils aged 7–9 years represented 11.9% of the sample.

The predominance of pupils aged 10–12 years is important because this developmental period is characterised by increasing cognitive independence and expanding social engagement. Children at this stage are increasingly capable of interacting independently with digital technologies, while still requiring adult guidance and mediation. The finding is consistent with research emphasising that children's engagement with digital technologies changes as they develop greater cognitive and social capacities. Radesky and Christakis (2016), for example, highlight both the developmental opportunities and the potential behavioural and social-emotional risks associated with children's increasing exposure to digital media.

However, age should not be interpreted as a direct determinant of socio-emotional outcomes. Rather, age may influence the degree of independence, the type of content consumed, the purpose of digital engagement, and the level of adult supervision. Thus, the predominance of 10–12-year-olds suggests that interventions targeting digital well-being should pay particular attention to the developmental characteristics of middle childhood.

4.1.2 Gender Distribution

Female pupils constituted 56.3% of respondents, while male pupils accounted for 43.8%. Although females represented a slightly larger proportion of the sample, the distribution provides representation of both genders.

Gender is relevant because children may encounter different social expectations and patterns of digital engagement. Research on children's internet use has shown that gender can interact with parental mediation and broader socialisation practices (Talves & Kalmus, 2015). Nevertheless, the relatively balanced distribution in the present study does not demonstrate that gender itself causes differences in socio-emotional outcomes. Such a conclusion would require comparative statistical analysis

of digital-device use and socio-emotional indicators by gender.

The finding nevertheless reinforces the need for digital well-being interventions that are responsive to pupils' different experiences rather than assuming that all children use digital devices in the same way.

4.1.3 Grade Distribution

Nearly half of the respondents were in Grade Seven (49.4%), followed by Grade Six (38.8%), while Grade Three accounted for 11.9%.

The concentration of respondents in Grades Six and Seven means that 88.1% (141/160) of the sample came from upper-primary grades. These pupils are approaching adolescence and are likely to have increasing independence in accessing and using digital technologies. The developmental transition represented by upper primary education is important because pupils increasingly combine educational, recreational, and social uses of technology. Digital media may support communication and learning, but concerns arise when use becomes excessive or displaces other developmental activities.

Reid Chassiakos et al. (2016) similarly discuss children's digital-media experiences in relation to development, family interaction, learning, and well-being. The Council on Communications and Media (2016) also emphasises adult involvement in media use, although its policy statement focuses on younger children. These sources provide developmental context rather than direct evidence about the upper-primary pupils in this sample. The results should therefore not be generalised to all primary-school age groups.

4.1.4 Living Arrangements

The majority of respondents (63.8%) reported living with both parents. A further 18.1% lived with guardians or other relatives, while 9.4% lived with their mothers only and 8.8% lived with their fathers only.

Living arrangement is potentially important because family environments may influence children's access to digital devices, supervision, communication, and parental

mediation. However, family structure alone cannot be used as a proxy for the quality of parental supervision. Research on parental mediation demonstrates that what caregivers do with respect to children's digital use, including discussion, guidance, rule-setting, and active engagement, is more informative than household structure alone (Kalmus et al., 2022).

The 18.1% of pupils living with guardians or other relatives is particularly noteworthy in the Tanzanian context, where extended-family arrangements can form an important component of children's social environments. Such arrangements may provide substantial support and supervision, but the nature of digital mediation may differ according to caregivers' availability, digital knowledge, and household responsibilities. Consequently, future analysis should examine parental/guardian mediation directly, rather than assuming that children living with both parents necessarily receive greater supervision.

4.2 Digital Devices Used by Pupils in School and Home Environments

Teachers reported that pupils interacted with several forms of digital technology, particularly computers, televisions, and mobile phones, but the pattern of access differed between school and home. Within school settings, computers were described as mainly connected to structured learning. One teacher explained,

"In most cases, pupils use computers when they are in the computer studies class..."
(Interview, Teacher 2, February 2026).

This account suggests that school-based computer use occurred within a defined instructional setting in which the teacher could regulate access, timing, and purpose. Infrastructure and institutional support may affect such access. Mtebe and Raisamo (2014) identified related barriers in Tanzanian higher education; that study provides contextual comparison but does not directly establish why computer access was structured in the primary schools studied here.

Teachers contrasted this structured school use with pupils' exposure in the home environment. As another teacher observed,

"At home, they watch television or sometimes use their parents' phones..."
(Interview, Teacher 5, February 2026).

This distinction is important because household devices may be shared, used for both learning and entertainment, and subject to varying levels of adult monitoring. Livingstone and Byrne (2018) emphasise that parenting practices shape children's digital experiences, while Katz et al. (2018) and Mascheroni and Ólafsson (2016) show

that parental mediation and family digital literacy affect children's patterns of access and use.

From a bioecological perspective, the finding demonstrates that pupils' digital experiences are distributed across interacting microsystems (Bronfenbrenner & Morris, 2006). School routines can provide curricular structure, while home use may involve a broader mix of media and purposes. Teachers therefore interpret classroom behaviour in relation to digital experiences that may have occurred outside school and under different levels of supervision. This helps explain why teachers' judgements about technology are influenced not only by the devices available in school but also by the wider digital routines pupils bring into the classroom.

Overall, teachers' accounts indicate that device access should not be interpreted simply as ownership or frequency of use. The developmental significance of digital access depends on the environment in which the device is used and the degree of adult guidance attached to that environment. Structured school access may support purposeful learning, whereas less regulated home exposure creates more varied opportunities and risks.

4.3 Educational and Entertainment-Oriented Digital Activities

Teachers identified both educational and entertainment activities as important dimensions of pupils' digital engagement. Educational uses were viewed positively when digital tools made learning more visual and accessible. One teacher stated,

"When pupils see visual explanations, they understand concepts more easily"
(Interview, Teacher 1, February 2026).

This perspective suggests that teachers value digital technologies when they support comprehension rather than simply adding screen exposure. The finding is consistent with Tondeur et al. (2020), whose study of pre-service teachers links preparation strategies with technological pedagogical content knowledge. That evidence supports attention to teacher preparation, although it does not directly measure pupil comprehension in the present schools.

Visual and interactive materials may also affect socio-emotional aspects of classroom participation. When pupils understand content more clearly, they may participate with greater confidence, remain engaged in group activities, and experience fewer frustrations related to difficult material. In this sense, the socio-emotional benefit described by teachers is connected to pedagogy: technology supports a positive classroom experience when it helps pupils engage successfully with learning tasks. This interpretation supports the idea that digital value is produced through the

interaction between a tool, a learning objective, and teacher guidance rather than through the device itself.

At the same time, teachers described strong interest in entertainment, particularly gaming. One participant commented,

"Some pupils are very interested in playing games..." (Interview, Teacher 6, February 2026).

Entertainment is not necessarily developmentally harmful, but its implications differ from structured educational use. Kalmus et al. (2015) examine parental mediation and excessive internet use, while Hawi et al. (2018) report associations between internet gaming disorder, sleep habits, and academic achievement among Lebanese school students. These findings provide comparison across different populations and do not establish that the pupils described here had a gaming disorder. Subrahmanyam and Šmahel (2011) also discuss digital media in relation to young people's social interaction.

The contrast between educational and entertainment use also highlights the importance of boundaries. A pupil who uses a digital device to view a teacher-selected explanation is participating in a different social and cognitive activity from a pupil who engages for long periods in unsupervised gaming. Treating all screen exposure as equivalent would therefore obscure the distinctions observed by teachers. The relevant educational question is how digital activities are designed, supervised, and balanced with other learning and social experiences.

Generally, teachers perceived the purpose of digital activity as a major factor shaping its developmental implications. Educationally directed and visually supportive use was seen as contributing to understanding and engagement, whereas strong or prolonged entertainment-oriented use created concerns about the displacement of schoolwork, sustained attention, and real-world interaction. The finding supports a selective rather than prohibition-based approach to digital technology in primary education.

4.4 Teachers' Observations of Behavioural Changes and Classroom Social Dynamics

A major concern raised by teachers was the possibility that frequent digital exposure, especially entertainment-oriented use, could affect pupils' concentration in class. One teacher observed,

"Some pupils... may find it difficult to concentrate during lessons" (Interview, Teacher 3, February 2026).

The statement reflects teachers' practical concern with sustained attention because concentration affects

participation, task completion, responsiveness to instruction, and interaction with peers. Twenge and Campbell (2018) report associations between screen exposure and psychological well-being, while Hawi et al. (2018) examine gaming disorder in relation to sleep and academic achievement. These studies provide related evidence but do not establish an attention-mediated causal pathway for the pupils in the present study.

The teacher findings further indicate that teachers perceived frequent entertainment-oriented digital engagement as contributing to reduced attention spans, lower concentration, diminished classroom engagement, and fewer opportunities for face-to-face communication. These concerns relate directly to classroom social dynamics because social-emotional competencies develop through participation, listening, cooperation, turn-taking, conflict resolution, and direct peer interaction. When attention is persistently divided or pupils become preoccupied with highly stimulating digital entertainment, teachers may find it more difficult to maintain these forms of classroom engagement.

However, teachers' perspectives were not entirely negative. The broader analysis recognised that moderate and well-regulated digital use can support communication and learning. Odgers and Jensen (2020) caution that digital effects are generally context-dependent and should not be interpreted through simple assumptions of harm. Valkenburg and Peter (2011) likewise show that digital communication may strengthen social connectedness when it complements offline relationships. Chaudron (2015) further demonstrates that guided digital engagement can form part of children's everyday learning experiences. These perspectives are consistent with teachers' support for digital tools when they are structured around educational goals.

The findings therefore point to a difference between technology integration and technology saturation. Integration involves intentional use within a pedagogical and social structure; saturation occurs when digital stimulation dominates children's attention across settings without sufficient balance or guidance. Teachers' accounts suggest that the first can support participation, while the second may interfere with concentration and direct interaction. This distinction is central to understanding the relationship between digital device use and classroom social dynamics.

Overall, teachers interpreted behavioural changes not as automatic consequences of digital devices but as experiences they associated with intensity, content, context, and supervision. Their accounts support a balanced approach in which schools preserve the educational advantages of digital tools while actively protecting time and space for sustained attention, face-to-

face communication, cooperative learning, and emotional self-regulation.

4.5 Digital Devices as Context-Dependent Classroom Tools

Across the three qualitative themes and the demographic findings, teachers presented digital devices as context-dependent tools. The same technology could support understanding in a supervised lesson and contribute to distraction when used intensively for entertainment. Similarly, the same child could encounter highly regulated computer use at school and much less structured television or smartphone exposure at home. This interpretation helps explain why teachers' perspectives cannot be reduced to a simple pro-technology or anti-technology position. Their concern is primarily with how technology is embedded in pupils' routines and relationships.

This interpretation aligns closely with the bioecological framework (Bronfenbrenner & Morris, 2006). Pupils' socio-emotional development emerges from interactions across home, school, peer, and wider institutional environments. Digital devices operate within these systems rather than outside them. Teacher competence, classroom routines, school infrastructure, parental mediation, and the content pupils encounter collectively influence the meaning of digital exposure. The findings therefore shift attention from the device itself to the conditions of use.

The demographic profile provides an important foundation for interpreting children's experiences with digital technologies in Dodoma City. Four findings are particularly important. First, the predominance of pupils aged 10–12 years indicates that the study largely represents children in middle childhood. This is a developmental period in which children increasingly acquire autonomy while continuing to depend on adults for guidance. Consequently, digital-device interventions should combine opportunities for independent learning with appropriate adult mediation.

Second, the gender distribution was relatively balanced, although girls constituted a somewhat larger proportion of respondents. This is useful because it allows the broader study to consider whether digital experiences differ according to gender. However, gender differences should be empirically demonstrated rather than assumed. Existing evidence indicates that gendered digital practices are strongly connected to socialisation and mediation practices (Talves & Kalmus, 2015).

Third, the large proportion of pupils in Grades Six and Seven indicates that the sample predominantly represents children approaching adolescence. This is a particularly important period for digital well-being interventions because pupils are likely to experience growing

independence in technology use alongside increasing peer influence.

Fourth, although almost two-thirds of respondents lived with both parents, more than one-third lived in other household arrangements. This demonstrates that digital well-being interventions cannot be designed exclusively around the two-parent household. Schools should communicate with parents, guardians, and other caregivers and provide guidance that can be adapted to different family circumstances.

An important implication emerging from these findings is that digital-device use should be understood ecologically rather than technologically. A device itself does not automatically produce positive or negative socio-emotional outcomes. Instead, children's experiences depend on the interaction between the child, device, content, purpose of use, family, school, peers, and wider social environment. This interpretation is consistent with evidence showing that children's digital-media experiences are shaped by multiple factors, including developmental stage and adult mediation (Radesky & Christakis, 2016).

The findings therefore support a shift from a simple question of "How much time do children spend on digital devices?" to a broader set of questions:

- What are children doing with digital devices?
- Why are they using them?
- What content are they accessing?
- Who guides or supervises their use?
- How does digital use interact with school, family, and peer relationships?
- Does digital engagement replace or complement face-to-face interaction?

These questions are particularly important in Tanzania, where digital access is expanding while research on children's digital socio-emotional experiences remains comparatively limited.

For classroom practice, this shift implies that teachers, school leaders, and parents should move beyond debates about whether pupils should use digital devices, toward collaborative decisions about how, when, and for what purposes devices are used across the school and home environments.

5. Conclusion and Recommendations

5.1 Conclusions

Teachers' accounts suggest that the perceived socio-emotional value of digital devices depends on how they are used within pupils' school and home environments. Computers were associated with structured classroom

activities, whereas televisions and shared smartphones featured in teachers' descriptions of home use. Teachers perceived visual educational content as supporting comprehension and participation, while frequent entertainment-oriented use raised concerns about concentration and direct social interaction. These are professional observations rather than evidence of causal effects.

The demographic profile places these accounts within a sample consisting mainly of pupils aged 10–12 years and those in Grades Six and Seven. Both genders and several household arrangements were represented. These characteristics describe the participating pupils but do not demonstrate differences in socio-emotional outcomes by age, gender, grade, or living arrangement.

Together, the findings are consistent with the bioecological and social learning perspectives that guided interpretation. They point to the relevance of adult guidance, classroom routines, family relationships, and digital content in understanding teachers' perspectives. The study supports purposeful digital learning accompanied by opportunities for face-to-face interaction and coordinated guidance across school and home.

5.2 Recommendations

Based on the findings from this study, the following recommendations have been made:

1. Teachers should link digital activities to clear lesson objectives, select age-appropriate visual materials, and combine screen-based tasks with discussion, cooperative learning, and direct peer interaction.
2. School leaders should support practical professional development in digital pedagogy and shared classroom expectations concerning device use, attention, and participation. These actions address teachers' reported educational benefits and concerns about concentration.
3. Schools should work with parents, guardians, and other caregivers to coordinate expectations about digital content, timing, and supervision across home and school.
4. Guidance should accommodate different household arrangements rather than assume that family structure determines the quality of supervision.
5. Future studies should combine teachers' perspectives with validated socio-emotional indicators and analyses of demographic characteristics and parental mediation. Comparisons across Tanzanian regions and school types, including rural and under-resourced settings, would help assess the transferability of the findings.

5.3 Limitations of the Study

The findings should be interpreted within the limits of the study's scope. The qualitative component drew on eight teachers from four schools, and the quantitative component described 160 pupils from the same schools using descriptive statistics only; neither strand supports statistical generalisation to all Tanzanian primary schools, nor establishes a causal relationship between digital-device use and socio-emotional outcomes. This paper reports demographic characteristics without analysing their relationships with the socio-emotional questionnaire measures collected in the broader study. Consequently, the relationships proposed between age, gender, grade, living arrangement, and digital experience remain interpretive rather than statistically tested associations.

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