

Primary School Teachers' Digital Literacy in Bangladesh: A Qualitative Social Science Review of Classroom Practice, Barriers, and Professional Development Needs

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Abstract

This qualitative social science review examines how existing literature discusses digital literacy among primary school teachers in Bangladesh, with particular attention to classroom practice, barriers, and professional development needs. The study synthesises policy documents, peer-reviewed articles, education technology reports, and teacher development studies published mainly between 2015 and 2026. Guided by DigCompEdu and TPACK, the review applies thematic analysis to identify how digital literacy is defined, how teachers use digital tools, what constraints shape practice, and what forms of support are needed. The analysis shows that teacher digital literacy in Bangladesh is still often framed through basic ICT skills, device operation, and multimedia classroom use, while international frameworks conceptualise it as a broader professional competence involving digital resources, pedagogy, assessment, learner empowerment, online safety, and reflective professional engagement. The review finds that teachers use smartphones, multimedia projectors, online videos, Teachers' Portal resources, and informal social media groups, but practice remains uneven because of infrastructure limitations, unstable connectivity, device shortages, limited technical support, workload, language barriers, and rural-urban inequality. The paper argues that one-off ICT training is insufficient. Sustainable improvement requires school-based mentoring, Bangla-friendly digital resources, practice-oriented digital pedagogy workshops, teacher digital competence standards, and targeted investment in rural schools.

Keywords: digital literacy; primary education; Bangladesh; teacher professional development; ICT in education; qualitative review

1. Introduction

Digital education has become an important policy and classroom concern in Bangladesh, especially after the COVID-19 pandemic made technology-supported learning visible at national scale. Before the pandemic, initiatives connected with Digital Bangladesh, multimedia classrooms, teacher portals, and ICT training had already positioned technology as a tool for educational quality. During school closures, however, digital education shifted from an optional supplement to an emergency requirement. Teachers, students, and families relied on television lessons, mobile phones, messaging applications, online

content, and informal peer support. This experience confirmed a central lesson for education systems: access to devices alone does not automatically produce meaningful learning (UNESCO, 2023a; World Bank, 2021). Teachers need the confidence, judgement, and pedagogical capacity to select digital tools, evaluate content, communicate safely, and design inclusive learning activities.

This issue is especially important in primary education because primary teachers shape foundational literacy, numeracy, social habits, and early attitudes toward learning. When digital tools are used well, they can enrich lesson planning, provide visual and audio support, increase engagement, and connect classrooms with wider resources. When they are poorly integrated, however, they can become superficial slide shows, unequal homework channels, or unused hardware. Teacher digital literacy should therefore be treated not simply as a technical skill but as a professional competence linked to pedagogy, child development, inclusion, assessment, and school improvement (Redecker, 2017). This review focuses on that broader understanding and asks how Bangladesh-focused literature explains the everyday digital realities of primary school teachers.

Primary teachers in Bangladesh are increasingly expected to use digital tools in lesson preparation, classroom teaching, communication, and professional development. Yet many teachers work in conditions where devices are shared, connectivity is unstable, electricity is not guaranteed, and formal technical support is limited. Several studies and reports suggest that teachers often possess basic ICT awareness but do not always have the deeper digital pedagogical competence needed to transform classroom practice (Hansson et al., 2018; Khan et al., 2012; Parvin & Salam, 2015). A teacher may know how to open a presentation or play a video but still need support in adapting materials to learners' language levels, checking the credibility of online content, protecting children's privacy, using formative assessment tools, and creating interactive lessons aligned with curriculum goals.

The main research gap is that public discussion about digital education in Bangladesh often highlights policy ambition, infrastructure expansion, or student access, while giving less sustained attention to teachers' lived professional needs. Existing work has examined Teachers' Portal usage, multimedia classrooms, online learning during COVID-19, and barriers to ICT adoption, but these strands are not always brought together around primary teachers' digital literacy. A qualitative social science review is therefore useful because it can integrate policy, research, and practice-oriented evidence into one interpretive account. It can also identify where the literature remains thin, especially regarding rural primary schools, female teachers, school-based support systems, assessment practices, and emerging issues such as artificial intelligence readiness.

The aim of this study is to explore how existing literature discusses digital literacy among primary school teachers in Bangladesh. The study addresses five research questions: How is digital literacy among primary school teachers in Bangladesh discussed in existing literature? What digital practices are reported among primary teachers? What barriers affect teachers' digital literacy? What professional development needs are identified? What policy recommendations can improve teachers' digital literacy? The study is significant for teacher education, classroom practice, education policy, and equity because primary education is the level where digital exclusion can begin early. A teacher-focused review can help shift attention from a supply-driven model of devices toward a capability-driven model of professional support.

2. Literature Review and Theoretical Framing

Digital literacy is commonly understood as the ability to use digital tools safely, critically, creatively,

and effectively in social, educational, and professional contexts. Early discussions often equated digital literacy with computer operation, but current frameworks emphasise information evaluation, communication, content creation, problem solving, data protection, and ethical participation. For teachers, digital literacy includes the capacity to locate and adapt digital resources, design technology-supported learning activities, communicate with students and families, assess learning through appropriate digital methods, support learners' own digital competence, and engage in professional collaboration (Redecker, 2017). The current European Commission DigCompEdu resource continues to present these competence areas as a reference point for educator development (European Commission, Joint Research Centre, 2024). This distinction matters in Bangladesh because teachers' digital development has sometimes been measured through visible access to equipment or ability to prepare multimedia presentations. Such measures are useful but incomplete.

ICT skills are narrower than digital literacy. ICT skills refer to the ability to operate specific technologies, for example typing a document, using PowerPoint, connecting a projector, or downloading a file. Digital literacy includes these skills but also extends to pedagogical choice, information literacy, online safety, collaboration, inclusion, and reflection. A simple example is the use of a PowerPoint lesson. From an ICT-skills perspective, success may mean that the teacher can create slides and display them through a projector. From a digital-literacy perspective, success means that the teacher chooses appropriate images, uses accessible language, encourages interaction, checks that the content is accurate, connects the lesson to learning objectives, adapts it to students' needs, and evaluates whether learning improved.

Primary teachers need digital literacy for at least four classroom functions. First, they need it for lesson planning: locating curriculum-aligned videos, images, simulations, stories, or exercises, and adapting those resources to local language and classroom conditions. Second, they need it for teaching: presenting concepts visually, supporting different learning styles, using audio for pronunciation, or designing group activities around shared digital material. Third, they need it for assessment: collecting evidence of learning through short quizzes, oral responses, worksheets supported by digital content, or simple feedback records. Fourth, they need it for communication with parents, colleagues, and school leaders through mobile messages, online groups, or official platforms. In Bangladesh, these functions are shaped by class size, curriculum demands, assessment culture, language needs, and infrastructure.

Bangladesh has made substantial policy commitments to ICT in education through national development plans, digital education initiatives, and teacher training programmes. Earlier discussions of education digitalisation in Bangladesh also highlighted the importance of teacher educators' computer skills for system-level change (Rahman, 2011). UNESCO's technology profile for Bangladesh notes that the Education Sector Plan 2020/21-2024/25 includes ICT for education, twenty-first-century skills, and fourth industrial revolution readiness, and aims to enhance EdTech and ICT capacities across the education system (UNESCO, 2023b). These commitments show that digital education is not a marginal issue but part of wider educational development. However, policy documents also acknowledge persistent barriers, including inadequate infrastructure, limited connectivity, lack of access to electricity, and insufficient equipment (UNESCO, 2023b). Such challenges affect teacher confidence, lesson preparation time, student access, and the credibility of digital initiatives.

The literature suggests that Bangladeshi teachers use a range of digital tools, including smartphones, projectors, online videos, digital content repositories, social media groups, educational apps, and teacher networking platforms. The Teachers' Portal is particularly important because it provides an online space

for teachers to store, retrieve, share, and discuss multimedia educational content. Hansson et al. (2018) describe the portal as a professional platform that supports classroom teaching and nationwide networking. Their study also found that teachers valued the portal because it stimulated students' creativity and active participation, while challenges included internet speed, power failure, technical problems, internet cost, and equipment availability. Classroom-specific research by Parvin and Salam (2015) similarly found that technology-supported English lessons in government primary schools could support instruction and student engagement, but the effectiveness of e-content depended heavily on teacher preparation and facilitation.

Barriers identified in the literature can be grouped into infrastructure, training, confidence, workload, language, and institutional support. Khan et al. (2012) argue that limited resources, lack of teachers' knowledge and skill, lack of time, weak administrative support, and insufficient training constrain ICT implementation in Bangladesh. Although that study is older, its categories remain relevant because many current policy ambitions still depend on similar enabling conditions. More recent rural-focused research similarly reports that primary schools have not kept pace with technology implementation to the same extent as higher levels of education and that rural schools experience disparities in access to computers, projectors, and sound systems (Roy, 2025). These findings suggest that teacher digital literacy cannot be separated from the school environment in which teachers work.

This review uses two complementary frameworks: DigCompEdu and TPACK. DigCompEdu provides a structured way to understand educator digital competence across professional engagement, digital resources, teaching and learning, assessment, learner empowerment, and facilitating learners' digital competence (Redecker, 2017). TPACK explains effective technology integration as the intersection of technological knowledge, pedagogical knowledge, and content knowledge (Mishra & Koehler, 2006). Together, the frameworks help interpret whether the literature discusses teachers mainly as tool users or as learning designers, assessors, collaborators, and facilitators of pupils' digital competence. The frameworks also support a social science interpretation of teacher practice as shaped by institutional conditions, professional identity, and inequality rather than by individual skill alone.

3. Methodology

This study uses a qualitative literature-based review design. It does not claim to be a full systematic review or meta-analysis; instead, it synthesises relevant literature interpretively to understand how teacher digital literacy is discussed in relation to Bangladesh's primary education context. Within social science research, a qualitative design is appropriate when the purpose is to understand meanings, practices, barriers, and institutional conditions rather than to estimate a single measurable effect (Creswell & Poth, 2018). The design is especially suitable for an emerging field where empirical studies are scattered across policy documents, teacher professional development research, EdTech studies, and classroom-level reports.

The review considered peer-reviewed journal articles, conference papers, policy documents, government and development reports, and education technology studies. Sources were searched through Google Scholar, ERIC, Scopus-indexed records where accessible, ResearchGate previews, Bangladesh government and education websites, UNESCO resources, UNICEF-related materials, World Bank publications, and education development reports. Search terms included digital literacy primary teachers Bangladesh, ICT in primary education Bangladesh, teacher digital competence Bangladesh, primary school ICT training Bangladesh, digital divide education Bangladesh, multimedia classroom

Bangladesh, Teachers' Portal Bangladesh, and technology adoption rural primary schools Bangladesh. The selected literature was read for evidence about definitions, practices, barriers, professional development, and policy support.

Sources were included when they addressed Bangladesh, primary education or teacher education, digital literacy or ICT in education, classroom technology use, online learning, teacher training, digital divide, or relevant policy context. Studies from 2015 to 2026 were prioritised to capture recent developments, but older foundational or Bangladesh-specific studies were retained when they provided important conceptual or historical context. Sources were excluded when they focused only on university students, discussed technology without educational relevance, lacked connection to teachers, or treated digital tools only as commercial products. International frameworks such as DigCompEdu and TPACK were included because they provide theoretical language for interpreting teacher digital competence.

The analysis followed a thematic approach informed by Braun and Clarke (2006). First, sources were read and summarised according to the research questions. Second, repeated ideas were coded, including digital access, teacher skills, classroom practice, training and support, institutional barriers, policy gaps, digital divide, and rural-urban inequality. Third, codes were grouped into broader themes: definitions of digital literacy, current digital practices, barriers, professional development needs, and policy support. Finally, the themes were interpreted through DigCompEdu and TPACK to identify whether the literature emphasised technical operation, pedagogical integration, or wider professional competence.

To strengthen trustworthiness, the review followed four qualitative quality principles: credibility, transferability, dependability, and confirmability (Nowell et al., 2017). Credibility was supported by comparing evidence across policy documents, journal articles, and development reports. Transferability was supported by describing the Bangladeshi primary education context rather than presenting findings as universal. Dependability was supported by making the search logic and theme development explicit. Confirmability was supported by linking interpretations to cited literature rather than relying on unsupported assumptions. Because the study is based on published literature and public documents, it did not involve direct participants, personal data collection, or school-based observation. Ethical responsibility therefore focused on accurate citation, fair interpretation, and avoidance of plagiarism.

Table 1. Review strategy and selection logic

Element	Operational decision in this review
Design	Qualitative literature-based review using thematic synthesis
Sources	Peer-reviewed articles, policy documents, conference papers, government and development reports
Search channels	Google Scholar, ERIC, Scopus records where accessible, government sites, UNESCO, UNICEF, World Bank, and education development reports
Inclusion focus	Bangladesh, primary education, teachers, ICT, training, digital divide, policy context, and classroom practice
Analysis themes	Access, skills, classroom practice, training, institutional support, policy gaps, and rural-urban

	inequality
Trustworthiness	Credibility, transferability, dependability, and confirmability considered through transparent thematic interpretation

Note. The review is qualitative and interpretive; therefore, the table reports selection logic rather than statistical sampling.

4. Findings

The first finding is that digital literacy is defined unevenly. International frameworks and recent digital competence discussions define it broadly as a professional, critical, and pedagogical competence. In contrast, Bangladesh-focused educational practice often uses ICT language that emphasises hardware, multimedia classrooms, PowerPoint content, and internet access. This does not mean that Bangladeshi policy ignores pedagogy; rather, the operational language of implementation often makes infrastructure and basic skills more visible than deeper digital competence. The result is a gap between policy ambition and classroom interpretation. Teachers may be encouraged to use ICT, but the meaning of effective use can remain unclear.

Across the literature, the strongest definition for primary teachers combines five dimensions. The first is operational skill: using devices, projectors, files, and online platforms. The second is information literacy: selecting accurate and age-appropriate content. The third is digital pedagogy: designing activities that improve learning rather than simply adding screens. The fourth is communication and collaboration: using digital platforms professionally with colleagues, parents, and learners. The fifth is safety and ethics: protecting privacy, avoiding harmful content, and modelling responsible digital behaviour. This multidimensional definition is better suited to primary education than a narrow device-based definition because young learners require guided, age-appropriate, and inclusive digital experiences.

The literature reports that teachers' digital practices are practical, mixed, and context-dependent. In schools with functioning multimedia classrooms, teachers may use projectors, laptops, downloaded videos, images, or presentations to explain concepts. Teachers also use smartphones for searching content, communicating with colleagues and parents, joining professional groups, or accessing digital resources. Some teachers use Teachers' Portal to find and share multimedia materials (Hansson et al., 2018). Social media and messaging groups appear as important informal professional spaces because they are familiar and accessible even when formal learning management systems are less used.

However, practice often remains teacher-centred. Digital content may be used to illustrate a lecture rather than to promote student interaction. This pattern is understandable because teachers face curriculum pressure, class size, limited training, and uncertainty about equipment. The evidence suggests that teachers are not passive recipients of technology; many adapt creatively. Yet their adaptations are shaped by constraints. A teacher may download videos at home because the school internet is weak, use a personal phone because the school laptop is unavailable, or reuse slides because there is insufficient time to prepare new digital lessons. Such practices reveal both teacher agency and structural limitation.

Infrastructure remains the most visible barrier. Limited internet, electricity problems, insufficient devices, and lack of maintenance reduce teachers' willingness to rely on digital methods. Even when a school has a projector, the teacher may not have reliable access to the room, cables, speakers, or technical support. Connectivity barriers are especially important because many digital resources depend

on downloading or streaming. When teachers cannot predict whether a tool will work, they often return to safer traditional methods. Training is the second major barrier. Many teachers require more than short introductory sessions; they need repeated opportunities to plan, practise, receive feedback, and troubleshoot. Confidence is closely connected to training. Teachers who fear technical errors may avoid digital tools, while teachers who receive supportive mentoring are more likely to experiment.

The review identifies a clear need for continuous, practical, and school-based professional development. Teachers need hands-on training that moves from basic operation to pedagogical design. Effective training should ask teachers to redesign an actual lesson using digital resources, teach or simulate it, receive feedback, and revise it. It should also cover assessment, online safety, inclusive content selection, offline use of resources, and low-bandwidth strategies. Training should not assume that all schools have stable internet or individual devices; instead, it should model realistic solutions for shared equipment and mixed-resource environments.

Table 2. Thematic coding and analytical interpretation

Theme	Indicative evidence in the literature	Interpretive meaning for teacher digital literacy
Definition of digital literacy	ICT skills, multimedia classroom use, digital resources, online safety, and pedagogical integration	Digital literacy should be treated as professional competence rather than device operation only
Current practices	Smartphones, projectors, online videos, Teachers' Portal resources, social media groups, and downloaded content	Teachers adapt available tools, but practice depends on school context and support
Barriers	Connectivity, electricity, shared devices, lack of maintenance, short training, workload, and language gaps	Individual competence is constrained by institutional and infrastructural ecology
Professional development	Hands-on workshops, mentoring, Bangla resources, digital safety, low-bandwidth strategies, and assessment tools	Training should be continuous, classroom-based, and differentiated
Policy support	National ICT priorities, multimedia classrooms, teacher portals, and digital education plans	Policy needs stronger alignment between standards, resources, training, monitoring, and classroom quality

Table 3. Summary of major barriers identified in the literature

Barrier	Explanation for primary teachers in Bangladesh
Infrastructure	Limited internet, electricity, devices, maintenance, and school-level technical support
Training	Short or one-off training may teach tool operation but not digital pedagogy
Confidence	Teachers may feel anxious about technical failure or classroom embarrassment

Rural-urban gap	Urban schools and teachers often have better access to devices, connectivity, and support
Workload	Teachers may not have sufficient time to search, adapt, test, and revise digital lessons
Language and content	Teachers need Bangla-friendly, curriculum-aligned, and age-appropriate digital resources

5. Discussion

The findings suggest that Bangladesh has reached a stage where the question is no longer whether digital technology belongs in primary education, but how it can be used meaningfully, equitably, and sustainably. Teachers are central to this transition. Digital education reforms that focus mainly on equipment risk underestimating the professional knowledge required to turn tools into learning. The literature repeatedly shows that teachers need both access and agency: access to devices, connectivity, and resources, and agency to adapt tools to their learners, language, curriculum, and classroom constraints. This interpretation is consistent with wider EdTech evidence showing that technology improves learning only when it is embedded in sound pedagogy, teacher support, and appropriate implementation conditions (Rodriguez-Segura, 2022; Zhao et al., 2002).

Teacher digital literacy develops through use, reflection, and support. It cannot be fully achieved through a single workshop or certificate. Teachers need repeated cycles of practice, feedback, and problem solving. They also need school cultures that allow experimentation. When technology fails, teachers should not be blamed; instead, failures should be treated as implementation data. A supportive culture can help teachers move from cautious use of ready-made slides toward more interactive, inclusive, and assessment-informed digital pedagogy.

A key implication is that the phrase digital literacy should not be used as a deficit label for teachers. Many teachers operate under constraints that make sophisticated digital practice difficult. Some may be digitally resourceful in informal ways, such as using personal smartphones, peer groups, or downloaded materials, even when their schools lack formal infrastructure. Recognising these adaptive practices is important because professional development can build from what teachers already do. Reform should therefore combine respect for teachers' existing strategies with clear pathways toward safer, more inclusive, and more pedagogically powerful uses of technology.

DigCompEdu helps reveal a gap between basic ICT competence and educator digital competence. Many reported practices relate to digital resources and teaching, but fewer address assessment, learner empowerment, online safety, or students' own digital competence (Redecker, 2017). For example, using a projector may demonstrate basic digital resource use, but it does not necessarily show digital assessment or learner-centred pedagogy. TPACK explains why digital literacy must integrate technology, pedagogy, and content (Mishra & Koehler, 2006). In primary classrooms, a digital video on science or English is effective only when the teacher knows how to connect it to the lesson objective, ask guiding questions, check understanding, and adapt the activity for students who learn at different speeds.

The digital divide appears in multiple forms. The first is material: some schools have better devices, electricity, and internet than others. The second is professional: some teachers have more confidence, training, and peer support. The third is linguistic and cultural: some digital content is not appropriate for Bangla-medium primary classrooms or for local examples. The fourth is socio-economic: students' home

access to devices and internet varies, which affects how teachers can assign digital tasks outside school. Rural-urban inequality cuts across all these dimensions. A digital divide perspective also challenges the assumption that online solutions automatically increase equity. During COVID-19, technology-supported learning helped some learners continue education, but many poorer and rural learners were not reached equally (UNESCO, 2023a; World Bank, 2021). Therefore, teacher digital literacy should include equity awareness and low-tech alternatives.

The training gap is not only a matter of quantity but also of design. Training that teaches teachers to operate a device may be necessary, but it is not sufficient for pedagogical integration. Teachers need to see examples of how digital tools can support questioning, group work, formative assessment, inclusive explanation, and local curriculum goals. They also need time to practise with the equipment that is actually available in their schools. Training should be continuous, collaborative, and linked to classroom observation or reflective portfolios. Teachers may also be more motivated to develop digital competence if their effort is recognised through career progression, micro-credentials, school recognition, or opportunities to mentor others.

Improving teachers' digital literacy can affect primary education in several ways. It can improve teaching quality by enabling teachers to explain abstract concepts through images, audio, video, and interactive tasks. It can increase student engagement when digital tools are used for participation rather than passive watching. It can support inclusion by offering multiple representations of content for learners with different needs. It can improve school-family communication when used professionally and safely. It can also prepare children for future digital learning by modelling responsible and purposeful technology use. However, these benefits depend on implementation quality. If digital education is measured only by equipment distribution, its impact may remain limited.

6. Recommendations

Teacher training should be practical, continuous, and aligned with classroom realities. First, training should include hands-on digital lesson design where teachers create, teach, evaluate, and revise actual lessons. Second, it should include mentoring after formal workshops, either through school-based ICT support teachers or local teacher networks. Third, training should use Bangla-friendly tools and resources, especially for primary subjects. Fourth, it should include digital safety, privacy, and ethical use. Fifth, it should introduce simple formative assessment tools and low-bandwidth teaching strategies. Finally, training should be differentiated, allowing beginners and more advanced teachers to progress at appropriate levels.

Schools should create conditions that make digital practice possible. Head teachers can schedule access to devices, encourage peer sharing, protect time for preparation, and recognise teachers who experiment responsibly. Schools should develop small resource banks of approved Bangla digital content, offline videos, lesson slides, and assessment templates. Where possible, one or more teachers can act as ICT support persons who help colleagues troubleshoot equipment and adapt resources. Peer observation can also be useful: teachers can observe how a colleague uses a digital resource and then discuss what worked, what did not, and how the lesson could be improved.

Policymakers should move toward a national teacher digital competence framework for primary education. Such a framework should define progressive levels of competence and connect them to teacher training, school evaluation, and professional recognition. Investment should prioritise rural and under-resourced schools, not only through devices but also connectivity, electricity, maintenance, and

local support. Training curricula in Primary Training Institutes should be updated to include digital pedagogy, open educational resources, online safety, and inclusive technology use. Monitoring should focus on quality of learning activities rather than only the number of digital classes conducted. Policymakers should also support the development of high-quality Bangla digital resources aligned with the primary curriculum.

Future research should move beyond literature-based analysis and include interviews, observations, and classroom-based case studies with primary teachers. Comparative studies of rural and urban schools would help clarify how infrastructure, leadership, and community context shape digital practice. Research on female teachers' digital literacy is also important, especially in relation to access, confidence, workload, and professional recognition. Studies should examine how Teachers' Portal resources are used in actual primary classrooms and how students respond to teacher-designed digital activities. Emerging research should also explore artificial intelligence readiness among primary teachers, including ethical concerns, language accessibility, and age-appropriate use.

Table 4. Practice-oriented recommendations

Level	Recommended action	Expected contribution
Teacher training	Hands-on digital pedagogy workshops and continuous mentoring	Improves confidence and classroom transfer
School	Device access planning, peer support groups, and ICT support teachers	Makes daily digital practice more feasible
Policy	National primary teacher digital competence standards	Creates coherence across training, monitoring, and recognition
Equity	Targeted investment in rural schools and Bangla-friendly resources	Reduces rural-urban and language-related barriers
Research	Interviews, observations, and rural-urban comparative studies	Provides stronger evidence on teachers' actual practices

7. Conclusion

This qualitative social science review has explored how existing literature discusses digital literacy among primary school teachers in Bangladesh. The main conclusion is that teacher digital literacy should be understood as a broad professional competence rather than a narrow ability to operate devices. Primary teachers need operational skills, but they also need digital pedagogy, information evaluation, online safety awareness, inclusive communication, assessment strategies, and reflective professional engagement. The literature shows that Bangladeshi teachers already use smartphones, projectors, online videos, Teachers' Portal resources, and social media groups, but their practices are uneven because of infrastructure barriers, limited practical training, workload, confidence issues, rural-urban inequality, language barriers, and weak technical support.

Bangladesh has important policy foundations for digital education, including ICT planning, multimedia classrooms, and teacher development initiatives. The challenge is to connect these foundations more

directly to classroom practice. DigCompEdu and TPACK both suggest that digital competence develops when teachers can combine technology with pedagogy, content, assessment, and learner needs (Mishra & Koehler, 2006; Redecker, 2017). Therefore, one-off ICT training should be replaced or complemented by continuous, school-based, and practice-oriented professional development. If Bangladesh invests in teacher digital competence standards, Bangla-friendly resources, rural infrastructure, mentoring, and quality-focused monitoring, digital education can move beyond equipment use toward meaningful learning transformation in primary schools.

For future reform, the most important message is balance. Bangladesh should continue expanding infrastructure, but infrastructure should be matched with teacher agency, professional time, and locally relevant content. Teachers should be supported to ask not only whether technology is available, but whether it helps a child understand, practise, participate, and remain safe. A primary teacher with strong digital literacy is not simply a user of hardware; they are a pedagogical designer who can make informed decisions in imperfect conditions. Strengthening that capacity is essential for equitable and sustainable digital education.

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