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Digital Literacy and Lifelong Education: A Qualitative Study of Urban Youth in Bangladesh and Italy

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Azmaine Faeique *

Abstract. Digital literacy has emerged as a cornerstone of contemporary education, social inclusion, and lifelong learning. This qualitative study explores how urban youth in Bangladesh and Italy perceive, acquire, and apply digital literacy within the context of lifelong education. Using semi-structured interviews, focus group discussions, and digital diaries, data were collected from 42 participants aged 18–30 across Dhaka and Rome. Thematic analysis revealed five major themes: pathways of digital skill acquisition, digital literacy as a tool for lifelong learning, structural and contextual barriers, peer and community-based learning practices, and cross-cultural contrasts in digital engagement. Bangladeshi youth predominantly framed digital literacy as a pragmatic necessity for career survival and socio-economic mobility, relying heavily on self-directed learning and informal peer networks due to infrastructural and institutional gaps. Italian youth viewed digital literacy more holistically, integrating it into personal growth, civic engagement, and lifelong learning, supported by structured educational opportunities and innovation hubs. Findings highlight that digital literacy is not only a skill set but also a social determinant, shaped by socio-economic, cultural, and institutional contexts. Policy implications include the need for context-sensitive interventions that combine infrastructural support, peer learning, and inclusive educational strategies to bridge the digital skills gap and promote equitable lifelong learning.

Keywords: Digital Literacy, Lifelong Learning, Urban Youth, Bangladesh, Italy, Peer Learning, Digital Inclusion

Introduction

Digital literacy, broadly defined as the ability to effectively access, evaluate, and utilize digital technologies, has emerged as a cornerstone of contemporary education, social inclusion, and lifelong learning (Jacqueline, 2024). Rapid digitization driven by technological advancements has generated both opportunities and constraints for young people, particularly in urban and marginalized settings (Alam et al., 2025; Aziz & Hossain, 2024). In Bangladesh, initiatives under the "Digital Bangladesh" agenda aim to integrate digital literacy into education and governance; however, structural inequities continue to limit equitable access and outcomes (Hossain et al., 2023; Hasan & Mostafa, 2025). In contrast, Italy's policy frameworks, as outlined in the 2025 Digital Decade Country Report (European Commission, 2025), emphasize cross-generational inclusion and lifelong learning as central pillars of digital transformation.

This literature review synthesizes research on digital literacy, lifelong learning, and youth engagement across Bangladesh, Italy, and global contexts. It is organized thematically into six sections: digital literacy in marginalized communities, digital literacy and lifelong learning, youth digital competence and wellbeing, bridging the digital skills gap, comparative perspectives, and synthesis.

Digital literacy functions as both a skill set and a social determinant influencing inclusion, participation, and empowerment. Studies in marginalized contexts consistently highlight that access alone is insufficient without corresponding competencies. For instance, Alam et al. (2025), in a qualitative study conducted in Dhaka's Korail slum, found that limited exposure to digital tools, shaped by socio-economic conditions, affects awareness, trust, and adoption of digital interventions. This reflects a multidimensional digital divide encompassing not only access but also skills and engagement. Similarly, Aziz and Hossain (2024) identified gaps in ICT access, resource availability, and digital competencies among Bangladeshi undergraduate students, while Hossain et al. (2023) noted that the benefits of "Digital Bangladesh" remain uneven due to infrastructural, educational, and socio-economic disparities.

Efforts to enhance digital literacy in marginalized settings are closely tied to empowerment and social mobility. Hasan and Mostafa (2025) argue that developing technological competencies is essential for Bangladesh's transition toward a "smart" nation, with an emphasis on inclusive innovation. Broader youth-oriented frameworks also emphasize that digital literacy enables participation in education, governance, and civic life (Empowering the Youth Through Technology and Digital Literacy, n.d.). These studies collectively emphasize that equitable access to digital resources and the develop-

ment of digital skills are fundamental to realizing the developmental potential of digital technologies in marginalized communities.

Digital literacy is also intrinsically linked to lifelong learning, enabling individuals to adapt to evolving technological environments. Divjak et al. (2004) conceptualize lifelong learning in the digital age as a continuous process of acquiring and updating knowledge and skills, requiring responsive and flexible education systems. Elçi (2024) further demonstrates that higher levels of digital literacy among future teachers are associated with stronger lifelong learning tendencies, indicating its relevance for professional development and adaptability. Extending beyond youth populations, D'Ambrosio and Boriati (2023) highlight the role of digital literacy among elderly populations in Italy, emphasizing the importance of integrating technology education into lifelong learning frameworks to promote inclusion and participation. This perspective aligns with Wei's (2022) argument regarding the role of digital literacy in bridging local and global educational contexts, as well as Jacqueline's (2024) view that embedding digital competencies across curricula is essential for preparing individuals for 21st-century workforce demands.

The relationship between digital literacy and lifelong learning has practical implications in both national contexts. In Bangladesh, digital literacy equips students and young people with the competencies required for continuous learning and adaptation across academic, professional, and civic domains (Hasan & Mostafa, 2025). Similarly, Italy's policy approach emphasizes the development of digital competencies across all age groups to support sustained engagement with digital technologies (European Commission, 2025) (Italy Digital Decade Country Report).

Digital literacy also plays a critical role in shaping youth wellbeing, educational outcomes, and social participation. Livingstone, Mascheroni, and Stoilova (2023), in a systematic review, found that digital skills enhance life opportunities and wellbeing among young people, although access and outcomes remain uneven due to socio-economic and infrastructural inequalities. Ferretti, Hubbs, and Vayena (2023) further observe that while digital health technologies are perceived as beneficial by youth globally, their effectiveness depends on access, guidance, and trust in digital systems.

Empirical evidence from Bangladesh and Italy reinforces these patterns. Hossain et al. (2025) show that urban youth actively use digital tools to access climate-related information, yet face limitations in the quality and accessibility of available content, indicating gaps in both digital literacy and information systems. The OECD (2025) similarly highlights that children in digital environments encounter both opportunities and risks, including exposure to unsafe content and challenges associated with unregulated usage. In Italy, Zaffaroni and Cino (2021), through a qualitative study of children

aged 6–12, demonstrate the interconnections between digital skills, safety, and wellbeing, underscoring the importance of structured digital education to support positive developmental outcomes while mitigating risks. Collectively, these studies indicate that digital literacy significantly influences youth empowerment, safety, and the ability to engage effectively with digital resources.

Addressing digital inequalities requires coordinated educational strategies and policy interventions. Jackman et al. (2021) emphasize the need to bridge digital skills gaps to prepare individuals for increasingly complex technological environments. Zakir et al. (2025) provide empirical evidence that digital literacy positively influences academic performance, mediated by informal digital learning, self-efficacy, and digital competence, highlighting the tangible benefits of skill development. National and international policy frameworks further contextualize these efforts. The Italy 2025 Digital Decade Country Report (European Commission, 2025) outlines strategies centered on education, skills development, and inclusion. In contrast, Pascua-Valenzuela (2025) emphasizes the importance of context-sensitive approaches, as demonstrated in the Philippines, which may offer transferable lessons for other developing contexts. Together, these insights suggest that bridging the digital skills gap requires integrated efforts across policy, education systems, and community-level engagement.

Comparative perspectives reveal how socio-cultural and institutional contexts shape digital literacy initiatives. Italy has implemented structured programs targeting both children and elderly populations, promoting digital inclusion across generations (D'Ambrosio & Boriati, 2023; Zaffaroni & Cino, 2021). In contrast, Bangladesh has experienced rapid digital expansion but continues to face disparities in access, literacy, and engagement, particularly among marginalized groups (Alam et al., 2025; Hossain et al., 2023; Hasan & Mostafa, 2025). Global studies further indicate that youth-focused digital literacy programs are widely relevant, with Jackman et al. (2021), Livingstone et al. (2023), and Ferretti et al. (2023) collectively demonstrating their role in enhancing lifelong learning, wellbeing, and social participation. Comparative insights suggest that integrating policy lessons from both Bangladesh and Italy can strengthen digital literacy frameworks and improve inclusivity and effectiveness across contexts.

Overall, digital literacy emerges as a multidimensional construct essential for education, social inclusion, and lifelong learning. In Bangladesh, persistent challenges related to access, skills, and structural inequality constrain its full potential among youth and marginalized populations (Alam et al., 2025; Aziz & Hossain, 2024; Hossain et al., 2023). In Italy, structured, policy-driven initiatives emphasize inclusion, skill development, and safety across generations (D'Ambrosio & Boriati, 2023; Zaffaroni & Cino, 2021).

Global evidence underscores that reducing the digital skills gap is critical for fostering wellbeing, innovation, and equitable participation (Jackman et al., 2021; Livingstone et al., 2023). Context-sensitive and inclusive digital literacy strategies, supported by policy and education systems, can enhance lifelong learning, professional readiness, and socio-economic empowerment, particularly among urban youth in diverse socio-cultural settings.

This study contributes to the sociology of education by offering a comparative qualitative analysis of digital literacy among urban youth in Bangladesh and Italy, two contrasting socio-cultural and institutional contexts. Unlike existing studies that focus predominantly on single-country perspectives, this research highlights how digital literacy is shaped not only by access and skills but also by broader socio-economic structures, cultural values, and policy environments. By integrating empirical insights with cross-cultural analysis, the study advances understanding of digital literacy as both a functional competence and a socially embedded process that influences lifelong learning trajectories.

Methods

This study employed a qualitative research design to explore how urban youth in Bangladesh and Italy perceive, acquire, and utilize digital literacy skills in the context of lifelong education. A qualitative approach was chosen to capture in-depth insights into subjective experiences, meanings, and social practices that shape digital engagement across diverse sociocultural settings. The comparative nature of the study allowed for cross-cultural reflections on similarities and differences in digital literacy practices.

Research Sites and Participants

The study was conducted in two urban contexts: Dhaka, Bangladesh, and Rome, Italy. Both cities were selected as representative metropolitan centers with rapidly evolving digital ecosystems and diverse youth populations. Participants were purposively sampled to include youth aged 18–30 years, reflecting the transitional stage between adolescence and adulthood where lifelong learning orientations are formed. In Bangladesh, 22 participants were recruited from public universities, private universities, and vocational training institutes. In Italy, 20 participants were recruited from higher education institutions, youth organizations, and digital innovation hubs. Efforts were made to ensure gender balance and diversity in socioeconomic background, field of study, and employment status.

Data Collection Methods

Data for this study were collected between January and June 2025 through a combination of qualitative research methods to ensure a comprehensive

understanding of urban youth experiences with digital literacy and lifelong learning. First, semi-structured interviews were conducted with 42 participants (n=42), allowing in-depth exploration of their narratives concerning digital skill acquisition, perceived barriers, and the interplay between digital competencies and personal as well as professional lifelong learning trajectories. Each interview lasted between 45 and 70 minutes and was audio-recorded after obtaining informed consent, ensuring both ethical compliance and rich, detailed data capture. Second, four focus group discussions (FGDs) were organized, with two groups in each country. Each group consisted of 5–7 participants and facilitated collective reflections on peer learning, digital inequalities, and future aspirations. These discussions provided insights into shared experiences and perceptions that extended beyond individual accounts. Third, digital diaries were collected from a subset of participants (n=10 in each country). Participants documented their daily digital practices over a two-week period through brief written notes and screenshots. This method offered contextualized evidence of actual digital engagement, capturing the routines, challenges, and strategies employed by urban youth in navigating digital spaces. Together, these complementary methods enabled triangulation of findings, ensuring a nuanced and comprehensive understanding of how digital literacy is experienced, learned, and applied in daily life across different socio-cultural contexts.

Data Analysis

Data analysis was conducted using thematic analysis with the support of NVivo 14 software to facilitate systematic coding and organization.

The analysis began with familiarization with the data, involving verbatim transcription of interviews, review of focus group discussions, and examination of digital diary entries. Researchers engaged in repeated readings to gain a deep understanding of participants' narratives and practices. Initial coding was then undertaken, guided both by inductive insights emerging directly from the data and sensitizing concepts drawn from the literature on digital literacy and lifelong education. This dual approach ensured that both novel and theoretically informed perspectives were captured. Codes were subsequently clustered into higher-order categories, leading to the development of overarching themes such as "self-directed learning," "structural barriers," and "peer-based learning." These themes provided a structured representation of participants' experiences while preserving the richness of qualitative data. A cross-cultural comparison was integral to the analysis, examining similarities and differences between the Bangladeshi and Italian contexts. Triangulation across the three qualitative methods-interviews, focus groups, and digital diaries-enhanced the credibility and robustness of the findings. Throughout the process, reflexive memos were maintained to account for re-

searcher positionality, interpretative decisions, and challenges arising from cross-cultural data interpretation. This reflexive approach strengthened the trustworthiness and depth of the thematic insights.

Results

The findings generated from interviews, focus groups, and digital diaries revealed diverse ways in which urban youth in Bangladesh and Italy understood and experienced digital literacy within lifelong learning. Five major themes emerged: (1) pathways of digital skill acquisition, (2) digital literacy as a tool for lifelong learning, (3) structural and contextual barriers, (4) peer and community-based learning practices, and (5) cross-cultural contrasts in digital engagement.

Pathways of Digital Skill Acquisition

In both countries, participants highlighted that their digital learning often began outside formal classrooms. In Bangladesh, participants repeatedly described how limited institutional guidance forced them to experiment with online resources and peers' support. One student from a public university in Dhaka explained:

> *When I first started learning coding at university, I quickly realized that the course we were given was very theoretical and lacked any practical application. The lectures focused mostly on concepts and definitions, but they did not show us how to actually use coding in real projects. I understood early on that if I depended only on my classes, I would never gain the skills needed to compete in the real world. That is when I turned to YouTube tutorials and other online resources. I would often stay up late at night, experimenting with small programs on my laptop, making mistakes, and then trying again until something worked. At first, it was frustrating and confusing because I did not have anyone to guide me directly. But with time and persistence, I began to understand the logic, and each small success motivated me to continue. Looking back, I feel that most of my real learning happened outside the classroom, through self-practice and online exploration, rather than from the formal teaching I received. (*Student, Dhaka, Public University*)*

> *Honestly, most of the digital skills I have today did not come from any formal course at my university. The classes introduced some basic concepts, but when it came to applying those skills in practice, I was left on my own. I had to learn through trial and error—installing different software, experimenting with tools, and often failing at the beginning. Each mistake forced me to look for alternative ways to solve the problem, and many times I turned to my friends for guidance. We would sit together, share tips, and figure things out collectively. Although this process was*

> *sometimes frustrating and time-consuming, it also taught me resilience and made me more self-reliant. I realized that I could not wait for structured teaching; instead, I had to build the habit of finding my own solutions. In the end, this independence became one of my strongest learning assets. (*Student, Dhaka, Private University*)*

These narratives indicate that in the absence of structured institutional support, Bangladeshi youth rely heavily on self-directed and peer-supported learning pathways. The repeated emphasis on trial-and-error, late-night experimentation, and dependence on online platforms such as YouTube suggests that digital skill acquisition is largely informal, opportunistic, and driven by individual initiative rather than curriculum-based training. This reflects a broader pattern where institutional gaps in practical, application-oriented teaching are compensated by adaptive learning behaviors and collaborative peer networks, highlighting how informal digital ecosystems function as primary enablers of skill development.

In Italy, while self-learning remained central, participants also spoke of having access to structured opportunities such as workshops and innovation labs that complemented their independent efforts. A student in Rome reflected:

> *At university, I was fortunate to have the chance to join a short training program on data visualization. It was not a very long or detailed course, but it gave me a good starting point-a basic foundation to understand how data could be represented visually and used in research or professional work. However, I quickly realized that this foundation alone was not enough. If I really wanted to master these skills, I had to go beyond what was taught in the program. That is why I started taking online courses, exploring tutorials, and working on small personal projects where I could apply what I was learning in real contexts. Over time, these self-initiated efforts became even more valuable than the formal training because they allowed me to deepen my knowledge and adapt to new tools as they emerged. The resources are out there, easily accessible if you are willing to look for them, and I think the real key is to keep updating yourself continuously. Technology changes so quickly that learning never really stops-it becomes a habit and, in a way, part of your everyday life.* (Student, Rome, Higher Education Institution)

Another Italian participant expressed enjoyment in exploring digital tools:

> *I really enjoy experimenting with new digital platforms because it gives me a sense of freedom. Often, I don't even wait for someone to guide or train me-I just download something new, explore its features, and try to figure out how it works on my own. In the beginning, it can feel a little overwhelming, but the process of trial and discovery is exciting. Every time I make a mistake or get stuck, I treat it as part of the learning jour-*

> *ney rather than a failure. What makes this possible is the easy access to tools and resources that are available online, which removes many barriers to experimentation. For me, curiosity is the biggest motivator; it keeps pushing me to explore new ideas and digital possibilities. In that sense, learning becomes less about formal instruction and more about a continuous cycle of self-driven exploration and creativity.* (Youth, Rome, Innovation Hub)

In contrast, the Italian context illustrates a more hybrid model in which structured institutional opportunities coexist with strong self-directed learning practices. While formal interventions such as workshops and training programs provide foundational exposure, participants consistently extend their learning through independent exploration, online courses, and project-based experimentation. This suggests that institutional support in Italy operates as an enabling scaffold rather than a complete substitute for self-learning. Consequently, digital literacy development emerges as a continuous, layered process in which formal education, informal exploration, and access to resources interact synergistically to support ongoing skill advancement.

Digital Literacy as a Tool for Lifelong Learning

Bangladeshi youth strongly associated digital literacy with employment opportunities and social mobility. Their narratives reflected the perception that without digital skills, one could not succeed in today's job market. A vocational institute graduate explained:

> *I see digital skills as the new passport to opportunities. If you don't have them, you cannot compete. Employers want people who can work with technology, and outside jobs are also available online. For me, learning digital tools means I can survive in this economy and maybe even create better chances for my family.* (Graduate, Dhaka, Vocational Institute)

Another private university student echoed this sense of urgency:

> *I have been focusing on learning freelancing skills because the job market here feels very uncertain and competitive. Even if I manage to complete my degree, there is no guarantee that I will find a stable or well-paying job immediately. That is why I see freelancing as a practical backup plan-an opportunity to earn income independently and gain experience while I search for other career options. Digital literacy is central to this plan because all freelancing work requires solid skills in communication, technology, and online platforms. I spend hours learning new tools, exploring freelancing websites, and practicing tasks that clients might expect. For me, this is not just about earning money; it is about preparing for the future, building resilience, and ensuring that I have the skills to adapt in a rapidly changing world. Without digital literacy, none of this*

would be possible, so it has become a key part of my lifelong learning journey. (Student, Dhaka, Private University)

Taken together, these accounts highlight that digital literacy is predominantly perceived as a functional and instrumental requirement for navigating competitive labor markets. The emphasis on employability, freelancing, and economic security reflects a context where digital competencies are directly tied to livelihood strategies and future stability.

In contrast, Italian participants approached digital literacy as a more multifaceted aspect of lifelong learning, beyond just employability. A student active in a youth organization in Rome stated:

> *For me, digital literacy is not only about getting a good job. Of course, it helps with employment, but it is also about being an active member of society. It is about understanding how information works online, how to engage critically with news, and how to use digital platforms to express my ideas and contribute to the community. I see it as part of becoming a responsible citizen.* (Student, Rome, Youth Organization)

Similarly, another youth reflected on how digital learning shaped their everyday growth:

> *For me, learning online has become an essential part of my lifelong education. I don't use digital tools solely to improve my professional skills, although that is important, but also to engage with cultural debates, follow political discussions, and connect with a variety of communities that I would otherwise not have access to. Every day brings new opportunities to learn something different, whether it is a new software, a social trend, or insights from other cultures. Technology allows me to explore these areas at my own pace and according to my own interests, making learning a continuous and dynamic process rather than something confined to classrooms or formal courses. I often find myself experimenting with different platforms, watching lectures, participating in online forums, or collaborating virtually with peers. In this way, digital literacy is not just a skill-it is a gateway to staying informed, connected, and constantly evolving. It has truly changed the way I approach learning and growth in my life.* (Youth, Rome, Digital Hub)

In comparison, the Italian accounts reflect a broader and more integrative understanding of digital literacy, where it extends beyond labor market outcomes to encompass civic engagement, critical thinking, and personal development. Digital practices are embedded within everyday life as tools for participation, continuous learning, and social connectivity, indicating a more holistic orientation toward lifelong learning.

Structural and Contextual Barriers

In Bangladesh, infrastructural constraints emerged as a recurring theme, particularly unreliable internet connections, frequent electricity shortages, and the high costs of devices. A student from a public university explained:

> *Sometimes I miss online classes because the internet connection at home is so unstable that it interrupts my ability to follow lectures properly. There are days when the electricity goes off for several hours, making it impossible to complete assignments or participate in online discussions. Even though I know how important digital skills are for my education and future career, these infrastructural challenges make learning extremely frustrating. It often feels like I am trying to run a race with one leg tied-no matter how hard I try; the environment limits my progress and slows down my growth. I have to find ways to adapt, such as visiting internet cafes or sharing resources with friends, but these are only partial solutions to a bigger structural problem.* (Student, Dhaka, Public University)

Female participants also reported additional barriers due to gendered restrictions on digital access:

> *At home, my brothers can use the computer freely whenever they want, but I often have to wait until they are finished. Beyond that, my parents sometimes feel that girls should not spend too much time online, which means I have to explain or justify every hour I spend on the computer or mobile devices. These restrictions make it harder for me to practice and develop my digital skills at the same pace as my male peers. Learning becomes slower and more challenging, and I often feel I have to work extra hard to catch up, simply because access is not equal. (Female Student, Dhaka, Private University)*

Collectively, these accounts underscore that digital literacy development among Bangladeshi youth is significantly constrained by structural and socio-technical barriers. Unstable internet connectivity, electricity disruptions, and gender-based restrictions on access reveal how infrastructural deficiencies and social norms intersect to limit opportunities for consistent practice and skill acquisition. As a result, even when motivation and awareness are high, learners are compelled to adopt adaptive coping strategies such as seeking alternative access points or relying on shared resources. This highlights that digital inequality in this context is not merely a matter of individual capability, but is deeply embedded in uneven access to essential resources and socially mediated control over digital environments.

In Italy, the barriers were less about infrastructure and more about information quality and socioeconomic differences. A student from Rome explained:

> *The challenge here is not about access-almost everyone has devices and internet connectivity. The real issue is the sheer volume of information available online. There is an overwhelming amount of content, and it can be difficult to determine what is reliable, relevant, or meaningful. Sometimes I spend hours browsing tutorials, articles, or videos, yet I still feel as though I haven't gained anything substantial. It's a constant challenge to filter, focus, and decide which resources are worth investing time in. Digital literacy, therefore, is not just about knowing how to use tools, but also about developing the skills to navigate this information overload critically and effectively.* (Student, Rome, University)

Another participant reflected on subtle inequalities despite apparent access:

> *I come from a working-class family, and we could not afford expensive devices or enroll in extra courses outside university. When I saw classmates, who had more advanced tools or could pay for private training, I felt disadvantaged. On the surface, it seems like everyone has equal access, but in practice, opportunities differ greatly. This gap can affect how much you can learn, how quickly you can develop your skills, and even how confident you feel in digital spaces. It made me realize that digital literacy is not only about individual effort-it is also shaped by the resources and support available to you.* (Student, Rome, Working-Class Background)

In the Italian context, the narratives point to a different configuration of barriers, where access is largely available, but challenges emerge in terms of information management and subtle socioeconomic disparities. The difficulty in filtering vast amounts of online content reflects a shift from issues of access to issues of critical navigation and evaluation within information-rich environments. At the same time, differences in economic background and access to advanced devices or supplementary training indicate that inequalities persist beneath the surface of universal access. Together, these accounts suggest that digital literacy challenges in such contexts are less about connectivity and more about developing critical competencies and addressing hidden forms of inequality that influence the depth, quality, and confidence of digital engagement.

Peer and Community-Based Learning Practices

Peer learning emerged as central in both contexts, though the forms varied. In Bangladesh, young people relied on informal, peer-to-peer networks to compensate for institutional gaps. One student described:

> *I often teach my roommate how to edit videos for his projects, and in return, he helps me learn programming basics. This kind of exchange happens almost daily and has become an essential part of our learning process. We understand that we cannot rely solely on our teachers for*

> *practical skills, so we create our own small learning communities where knowledge is shared freely. These informal networks allow us to explore, experiment, and support each other in ways that formal lessons often cannot provide. Over time, I have realized that these peer interactions are just as important, if not more so, than the classroom in helping me develop real-world digital skills.* (Student, Dhaka, Public University)

Another student reflected on how classmates serve as the main source of digital knowledge:

> *Whenever I come across a new app, online platform, or tutorial that seems useful, I immediately share it with my friends in class. Similarly, they share what they discover with me. These exchanges happen naturally and constantly, creating a web of collaborative learning. Honestly, I feel that I have learned more from these interactions than from any formal lectures or assignments. Peer learning has become an essential part of how I acquire, test, and refine my digital skills.* (Student, Dhaka, Private University)

These accounts illustrate that peer and community-based learning in Bangladesh functions as a critical compensatory mechanism in response to limited institutional support. The prominence of reciprocal knowledge exchange and informal learning communities indicates that digital skill development is highly collaborative, decentralized, and embedded within everyday social interactions. Such practices not only facilitate practical skill acquisition but also foster collective resilience, enabling learners to co-create supportive environments that bridge gaps left by formal education systems.

In Italy, peer learning often occurs in more structured and formalized spaces such as hackathons, student clubs, and innovation hubs. One participant explained:

> *During a hackathon, I learned more in two days than I did in an entire semester of lectures. We were working in teams, constantly solving problems together, and exchanging knowledge. That environment forced me to think creatively, apply my skills in real-time situations, and adapt quickly to challenges. The experience taught me not only technical skills but also collaboration, problem-solving, and the confidence to tackle complex tasks in a supportive team setting.* (Youth, Rome, Innovation Hub)

Another Italian student highlighted the motivational aspect of peer learning:

> *When I work in groups with my peers, I feel more motivated and engaged. Even if I am unsure about a particular skill, someone else is there to help me, and I learn faster than I would on my own. Peer learning is not just about acquiring knowledge; it builds confidence, encourages risk-taking, and fosters a supportive environment where everyone push-*

> *es each other to improve. It has made a significant difference in how I approach both learning and collaboration in digital contexts.* (Student, Rome, Higher Education)

By comparison, peer learning in the Italian context appears more structured and institutionally embedded, occurring within organized settings such as hackathons, student groups, and innovation hubs. These environments enhance collaborative learning by integrating peer interaction with guided, goal-oriented activities that promote creativity, problem-solving, and skill application. Consequently, peer engagement operates not merely as a substitute for formal education but as an extension of it, reinforcing both technical competencies and social learning dynamics within a supportive and resource-rich ecosystem.

Cross-Cultural Contrasts in Digital Engagement

The comparative analysis revealed that Bangladeshi youth tended to frame digital literacy as a pragmatic survival tool, while Italian youth viewed it as part of a holistic lifelong education. A Bangladeshi participant summarized this perspective:

> *Without digital skills, you are left behind. For many of us in Bangladesh, learning to use technology effectively is not just about convenience or interest-it is a matter of survival and creating opportunities for a better life. I want to use my digital skills to work online, earn money, and support my family, because relying solely on traditional jobs often feels uncertain. This motivates me to constantly improve, explore new tools, and practice skills on my own. Each new skill I acquire feels like a step toward independence and security. For me, digital literacy is not a luxury; it is an essential part of building a sustainable future and navigating a competitive environment.* (Graduate, Dhaka, Vocational Institute)

This interpretation reinforces the interpretation that digital literacy in the Bangladeshi context is predominantly constructed as an essential survival strategy within a competitive and uncertain economic landscape. The strong emphasis on income generation, independence, and family support highlights how digital engagement is closely tied to immediate livelihood concerns and upward mobility. Such framing suggests that motivations for digital skill acquisition are largely necessity-driven, shaped by structural constraints and limited alternative opportunities in the formal labor market.

In contrast, an Italian participant described a broader, more holistic perspective:

> *For me, digital learning is not just about technical skills or preparing for a career. It is about staying informed, being creative, and engaging actively with the world around me. I use technology to follow cultural discussions, explore new ideas, and connect with people from different*

> *backgrounds. It helps me understand the world more deeply and allows me to express myself in meaningful ways. Learning digitally has become a continuous, lifelong process that shapes not only my professional abilities but also my personal growth and social awareness. Technology is a tool that enhances how I participate in society, not just how I work.* (Student, Rome, Youth Organization)

Conversely, this perspective reflects a more expansive conceptualization of digital literacy, where it is embedded within broader processes of personal enrichment, social participation, and intellectual engagement. The focus on creativity, cultural exploration, and active citizenship indicates that digital technologies are perceived not merely as economic tools but as integral to everyday life and identity formation. This points to a context in which digital engagement is driven less by urgency and more by opportunities for continuous, self-directed growth.

In summary, youth in both Bangladesh and Italy relied on self-learning and peer networks as critical pathways for digital literacy. However, their underlying motivations diverged: Bangladeshi youth positioned digital literacy as an urgent necessity for career security and mobility, while Italian youth integrated it into a broader narrative of lifelong growth, cultural participation, and citizenship. These differences underline how digital literacy is shaped not only by individual agency but also by the broader socio-economic and cultural environments in which young people are embedded.

Discussion

This study provides a comparative analysis of how urban youth in Bangladesh and Italy experience digital literacy within the framework of lifelong learning. By juxtaposing the empirical findings with existing literature, several key insights emerge regarding pathways of skill acquisition, motivations, structural constraints, and peer-mediated practices.

These findings not only support existing literature but also extend it by demonstrating how contextual differences shape not just access to digital literacy, but its meaning and application in everyday life.

Consistent with prior research (Alam et al., 2025; Aziz & Hossain, 2024; Divjak et al., 2004), both Bangladeshi and Italian youth predominantly engaged in self-directed learning, often complementing formal education. Bangladeshi participants relied heavily on online tutorials, peer networks, and trial-and-error experimentation to compensate for limited institutional support, echoing literature on the digital divide in marginalized contexts (Hossain et al., 2023; Hasan & Mostafa, 2025). In Italy, self-learning was supplemented by structured initiatives such as workshops, innovation labs, and university programs, reflecting previous findings on cross-generational dig-

ital inclusion (D'Ambrosio & Boriati, 2023; Zaffaroni & Cino, 2021). These patterns indicate that while informal learning is universally crucial, its reliance is intensified where institutional support is insufficient.

Empirical findings align with literature highlighting digital literacy as central to employability, professional development, and lifelong learning (Elçi, 2024; Hasan & Mostafa, 2025; Wei, 2022). Bangladeshi youth framed digital literacy pragmatically, emphasizing survival, career readiness, and socio-economic mobility, consistent with studies on digital inequities and opportunity disparities (Alam et al., 2025; Hossain et al., 2023). In contrast, Italian youth embraced a broader, holistic perspective, viewing digital literacy as a means to foster civic engagement, critical thinking, and personal growth, which resonates with research advocating comprehensive lifelong learning frameworks (Jacqueline, 2024; European Commission, 2025). These divergent orientations underscore how socio-economic and cultural contexts shape both the perceived value and utilization of digital skills.

The study confirms literature on contextual constraints to digital literacy (Alam et al., 2025; Hossain et al., 2023; Jackman et al., 2021). Bangladeshi youth reported infrastructural challenges, including unstable internet, power shortages, and high device costs, with female participants facing additional gendered restrictions, reflecting findings on social and digital inequalities (Hasan & Mostafa, 2025). Italian participants encountered fewer infrastructural obstacles but highlighted challenges related to information overload and socio-economic disparities, aligning with OECD (2025) and Zaffaroni and Cino (2021) on the qualitative dimensions of digital access. Thus, barriers to digital literacy extend beyond material access to include cognitive and socio-cultural factors that influence learning effectiveness.

Peer networks emerged as essential mechanisms for digital skill acquisition, corroborating studies on collaborative learning and informal knowledge exchange (Ferretti et al., 2023; Zakir et al., 2025). In Bangladesh, learning was primarily peer-mediated and informal, compensating for gaps in formal instruction. In Italy, peer learning often occurred in structured contexts such as hackathons, student clubs, and innovation hubs, enhancing both technical and socio-emotional competencies (D'Ambrosio & Boriati, 2023; Livingstone et al., 2023). These findings highlight the universal importance of social learning while emphasizing that its structure and impact are contextually determined.

A major distinction emerged in youth motivations. Bangladeshi participants prioritized digital literacy for economic survival and career mobility, consistent with literature on marginalized communities' instrumental view of technology (Alam et al., 2025; Hossain et al., 2023). Italian youth, conversely, integrated digital literacy into holistic lifelong learning, cultural engagement, and civic participation, echoing studies on inclusive and par-

ticipatory digital education (Jacqueline, 2024; D'Ambrosio & Boriati, 2023). This contrast demonstrates that socio-economic, cultural, and institutional contexts not only shape access and skills but also frame the broader purpose and perceived value of digital literacy.

These findings reinforce the conceptualization of digital literacy as both a skill set and a social determinant, influencing education, wellbeing, and social inclusion (Wei, 2022; Jacqueline, 2024). The study advances literature by illustrating how contextual factors-structural, cultural, and institutional-mediate the effectiveness of digital engagement and lifelong learning trajectories. Bridging the digital skills gap requires addressing both material and cognitive barriers while promoting self-directed, peer-supported, and policy-backed learning opportunities (Jackman et al., 2021).

Thus, digital literacy should be understood not merely as a technical skill, but as a context-dependent social practice embedded within structural opportunities and constraints.

Implications for Policy and Practice

The cross-cultural insights suggest that digital literacy initiatives must be tailored to local contexts. In Bangladesh, interventions should prioritize infrastructural support, gender equity, and accessible informal learning pathways, whereas in Italy, emphasis may lie in enhancing critical information literacy and fostering inclusive, structured peer-learning environments. Integrating lessons from both contexts could inform policy design, ensuring that digital literacy programs advance employability, social participation, and holistic lifelong learning across diverse socio-economic settings.

Conclusion

This study provides a comparative understanding of how digital literacy is experienced, interpreted, and utilized by urban youth in Bangladesh and Italy, conceptualizing it as both a functional skill set and a socially embedded process. By examining two contrasting socio-cultural contexts, the research demonstrates that digital literacy is not merely contingent upon access to technology or individual competencies, but is profoundly shaped by structural inequalities, institutional arrangements, and culturally mediated expectations that influence both its acquisition and application.

The findings reveal distinct contextual orientations in the ways digital literacy is perceived and operationalized. In Bangladesh, digital literacy is predominantly instrumental, serving as a mechanism for economic survival, employability, and social mobility within environments characterized by infrastructural constraints and limited institutional support. In contrast, Ital-

ian youth embed digital literacy within broader paradigms of personal development, civic participation, and structured lifelong learning, facilitated by more robust institutional frameworks and educational ecosystems. Despite these differences, self-directed learning, peer networks, and institutional structures emerge as shared but unevenly distributed enablers that collectively shape digital engagement across both contexts.

Overall, the study contributes to the existing body of knowledge by advancing a more nuanced, context-sensitive, and multidimensional conceptualization of digital literacy. It underscores the limitations of purely technical or access-centric interpretations and highlights the importance of integrating structural, cultural, and institutional perspectives. Accordingly, reconceptualizing digital literacy as a socially situated phenomenon is essential for informing inclusive policy interventions and designing equitable lifelong learning strategies that are responsive to diverse global contexts.

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