Journal of Education and Learning Reviews, 3 (6): November-December 2026. ISSN: 3057-0387
Website: https://so19.tci-thaijo.org/index.php/JELS/about
Article ID: e3788

Demystifying the Digital Shift in Education: Demands, Disparities, and Directions

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Received 31/07/2026	Revised 20/09/2026	Accepted 20/10/2026

Abstract

Background and Aim: Rapid technological, economic, and cultural shifts are transforming the purposes and practices of twenty-first-century schooling. This study examines the relationship between global competency frameworks—which emphasise critical thinking, creativity, and digital skills—and the implementation challenges faced by low- and middle-income education systems. The aim is to identify systemic tensions between progressive policy rhetoric and entrenched classroom realities.

Materials and Methods: Using a constructivist lens, this qualitative content analysis investigates policy documents, educational reports, and scholarly literature. The study explores evolving interactions among teachers, learners, digital tools, and assessment systems, focusing on misalignments between competency-based discourse and prevailing institutional practices.

Results: Four critical issues emerged: persistent exam-driven pedagogies, inequitable access to and use of technology, a fundamental mismatch between competency-based curricula and summative assessment frameworks, and chronic underinvestment in teacher professional development. These factors are directly linked to declining student engagement, wellbeing, and participation.

Conclusion: Meaningful educational improvement requires comprehensive systemic reform that prioritises human development over technological acquisition. Policymakers, school leaders, and teacher educators must foster responsible digital practices and intentionally cultivate adaptive skills for complex societal needs. Bridging policy aspirations with classroom realities is essential for sustainable and equitable transformation.

Keywords: 21st-century Education, Digitalization, Demands, Disparities and Directions

Introduction

In less than half a century, education has moved from overhead projectors and audiocassettes to immersive virtual reality, artificial intelligence (AI) tutors, and global online learning communities (Rivas et al., 2020). At the same time, unprecedented social, economic, and environmental disruptions have intensified demands for citizens who can think critically, collaborate across differences, act creatively, and learn continuously throughout life (Care et al., 2018). Yet, in many classrooms across the Global South—and often within the same systems that policy documents describe as "21st-century ready"—chalk-and-talk lectures, rote memorisation, and exam coaching remain the dominant modes of instruction. However, with advances in technology, information is available at one's fingertips. Children tend to find the answers to their queries at a glance on the internet. Today's students come from Generation Z and Generation Alpha (Tafonao et al., 2020). These two generations have grown up along with advanced technology available in their homes and schools. They are digital-friendly and can handle the latest apps and code, unlike their grandparents, who flipped pages.

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In fact, education plays a pertinent role in personal, social, and national development. Where there is the development of education, there is the development of the nation, too. In this context, there has been a paradigm shift in 21st-century education toward recognising the need for education systems to equip learners with competencies such as problem-solving, collaboration, critical thinking, and communication (Care et al., 2018). Therefore, we need to think through, with a cool mind, what the current reality is, what knowledge, skills, and competencies society demands of citizens today, and where our education system is heading. Are we supposed to limit ourselves to our past philosophy and dogma, or explore something new to adapt to the third world?

We have always been constructivist by heart. Learning by doing is one of the most successful approaches or theories we have encountered for learners of all ages and stages. According to Ah-Nam and Osman (2017), there are three central guiding principles based on constructivist and constructionist learning theories: engaging students in discovery and problem-solving tasks through teamwork, providing opportunities to communicate ideas, and involving students in the design process. Therefore, we have chosen this theoretical ground to conduct this study.

The ability to think critically and creatively, to collaborate with others, and to communicate clearly sets students up for success in their careers. It empowers them to lead happier, healthier lives. Bringing our schools into the 21st century requires taking the lead rather than trailing, actively seeking new ways of doing things, and staying in touch with the world outside the education system. However, we have observed such a school in Nepal, which reminds us that we are still 100 years behind in implementing innovation and technology in practice. Change on a broad scale requires visionary leadership in the classroom, across the school community, and at the policy-making and executive levels of the nation. Still, every single teacher needs to take steps as a change agent to transform our education in this digital era.

Objectives

The purpose of this study is to examine the current reality of educational practices and highlight the significance of 21st-century education. The study further aims to outline multi-level implications for education policy, school leadership, teacher education, and classroom practice, with particular attention to the specific challenges and opportunities in Nepal.

Literature review

Technology-Driven and Holistic Transformation of Teaching Practices

In the 21st century, education has become technology-driven, posing numerous hurdles to didactic teaching and knowledge construction, and it needs recontextualisation. The models are quite popular in learning dimensions such as co-construction, collaborative learning, and ICT (Information and Communication Technology) as tools for knowledge construction (Chai & Kong, 2017). Furthermore, co-construction relies on collaboration to foster self-reflection, knowledge sharing, and critical thinking. On the other hand, collaboration enables peer-to-peer learning, teaching, and listening to learners' voices. ICT tools are widely used in teaching today. Audio devices, interactive whiteboards, and projectors have been implemented to foster pedagogy. When technology is embedded in teaching practices, it enhances students' understanding and builds teachers' competence. Educators' attributes highlighted in the field of teaching and learning include beliefs, knowledge, and design capacities (Tsai & Chai, 2012). In modern educational environments, the educator's role is crucial in fostering the qualities of education. Knowledge and belief go hand in hand in cultivating the foundation for innovative pedagogies and in navigating complex issues in education. Kong et al. (2016) highlighted e-learning in Hong Kong, Singapore, Taiwan, and China as an emerging phenomenon to assess meaningful learning among teachers in the community. E-learning refers to online platforms where community-based learning, resources, ideas, and coping strategies are collaboratively developed to deepen teachers' pedagogical practices. Professional educators must put knowledge into practice to transform, grow, and benefit learners as well. In addition, a knowledge-building environment, an adaptive disposition, and guiding students through the sense-making process are essential competencies

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for 21st-century educators. Overall, meaningful learning, design-oriented, collaborative practices, and technology-driven approaches are the needs of today's education.

Preparing Students for the Future: Readiness through 21st Century Skills

Education has been a crucial factor in shaping an individual's knowledge, skills, and competencies, but educational provision typically lags behind the emergence of need (Care et al., 2018). If we reflect on a typical day at work, we speak one-on-one with our colleagues, hold meetings, write emails, read news articles and reports, operate machinery, and make phone calls. Hence, a significant part of the workday is dedicated to skills such as communication, collaboration, critical thinking, and some independent decision-making**.** Similarly, deep, meaningful learning uses construction activities and student participation to foster higher-order thinking. It includes inquiry, critical thinking, creative thinking, problem-solving, and metacognitive skills (Mystakidis et al., 2021). Likewise, deep, meaningful learning and authentic learning are symbols of participation aligned with critical thinking, which promotes analytical thinking, information analysis, and the development of personal interpretations among students. Authentic learning typically focuses on real-world, complex problems and their solutions, using role-playing exercises, problem-based activities, case studies, and participation in virtual communities of practice (Lombardi & Oblinger, 2007).

This raises an important question: should schools allocate some of their time to training students to be effective communicators and reflective thinkers rather than just to gain mastery of academic concepts? Through 21st-century education, students should be trained/facilitated to become innovative problem solvers and independent decision makers - this should enable them to be successful in future technology. The term 21st Century Skills is interchangeably used as soft skills, life skills, key skills, interpersonal skills, workforce skills, and non-cognitive skills (Jerald, 2009). Actually, 21st-century education is about equipping students with the skills they need to succeed in this new world and helping them build the confidence to apply those skills. With so much information readily available to them, 21st-century skills focus more on making sense of that information, sharing and using it in smart ways. Partnership for 21st Century Learning P21 (2007) has identified four 'Skills for Today':

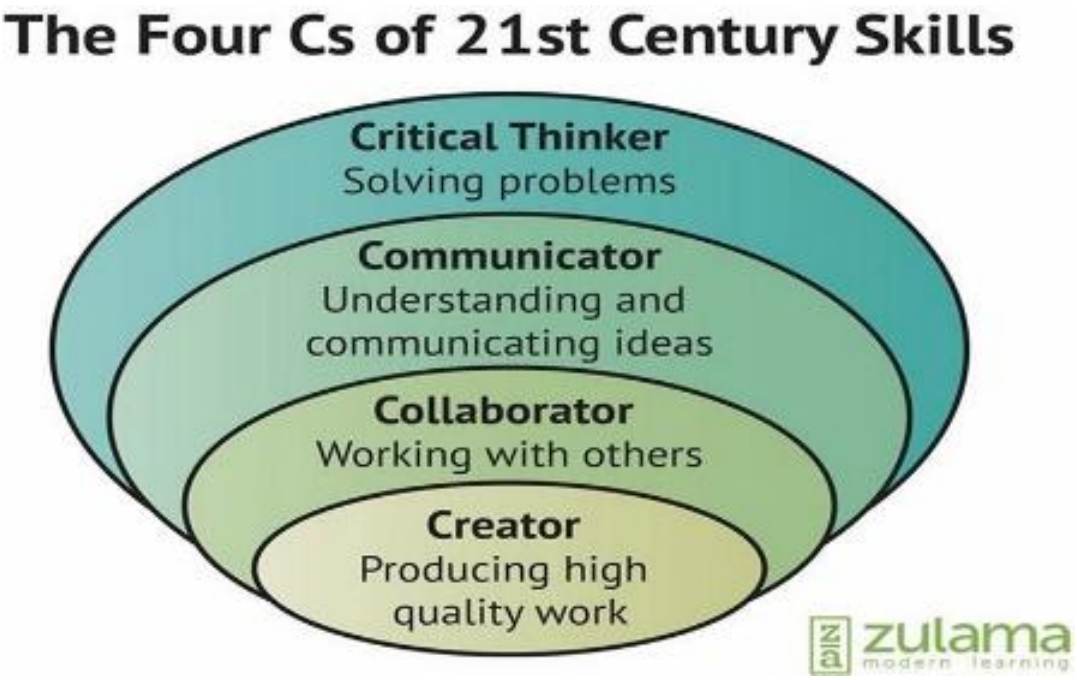


Figure 1: 21st Century Skills
Source: www.researchgate.net/figure

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These four broad headings are not just the minimal units, but they are the principal part of the curriculum and strategic planning, as well as guidelines for every lesson to be conducted by the educators in the classroom.

Firstly, creativity is about thinking through information in new ways, making new connections, and coming up with innovative solutions to problems. Secondly, critical thinking is about analysing information and critiquing claims. Thirdly, communication is understanding things well enough to share them clearly with other people. Lastly, collaboration is about teamwork and the collective genius of a group that is more than the sum of its parts (Geisinger, K. F., 2016). Other skills are important and fall within these four areas. Entrepreneurship can be considered a skill in its own right. Inquiry and problem-solving are key. Emotional intelligence (EQ) is one of the most important keys to successful work and relationships. Education needs to be all about empowering students with transferable skills that will hold up in a rapidly changing world, not about prescribed content chosen for its past relevance.

Conceptual Framework

This study is primarily grounded in Piaget's constructivist theory, which views learners as active constructors of knowledge through experience, interaction, and reflection (Piaget, 1970). Building on this foundation, Vygotsky's social constructivist perspective emphasises learning through social interaction, dialogue, collaboration, and the support of others (Vygotsky, 1978). Together, these perspectives position learner agency and active participation at the centre of learning. Within this framework, the teacher acts as a facilitator who creates opportunities for inquiry, collaboration, problem-solving, and knowledge construction rather than functioning primarily as a transmitter of information (Brooks & Brooks, 1999). Digital technology is conceptualised as a mediating tool that can support interaction, access to knowledge, collaboration, creativity, and inquiry when integrated purposefully into pedagogy (Starkey, 2011). Finally, Biesta's (2010) perspective extends the framework by emphasising that education should support not only knowledge acquisition but also agency, judgement, participation, and human development. Thus, the framework proposes the following relationship:

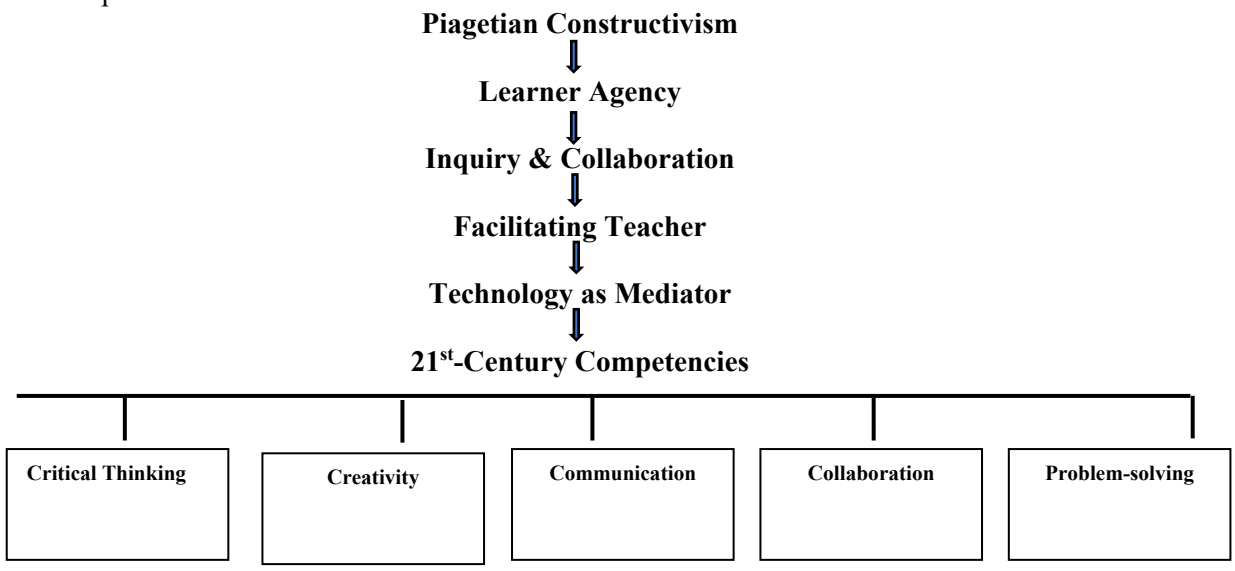


Figure 2: Conceptual Framework

Methodology

This study employed a qualitative document analysis design to examine the contemporary realities, challenges, and opportunities associated with 21st-century education and digital integration, particularly in Nepal and comparable low- and middle-income contexts. The analysis was guided by a constructivist perspective and informed by a phenomenological orientation to educational meaning and experience. Document analysis involves a systematic process of locating, selecting, reviewing,

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interpreting, and synthesising information contained in documentary sources (Bowen, 2009). The sources examined in this study comprised scholarly literature, educational reports, and relevant policy and curriculum documents addressing 21st-century skills, digital technologies and ICT in education, teaching and learning practices, curriculum and assessment, teacher professional development, and student agency. The search and selection process focused on literature relevant to the study objectives and conceptual framework. Searches were conducted using Google Scholar, JSTOR, ProQuest, etc., with combinations of keywords such as *21st-century education, digitalisation in education, ICT in education, 21st-century skills, curriculum and assessment, teacher professional development, and Nepal.* Documents were included when they were relevant to the research questions, substantively addressed the identified educational issues, and provided sufficient information for analysis. Documents that were duplicated, unrelated to the study objectives, or lacked sufficient substantive relevance were excluded. The selected documents were reviewed through an iterative process of skimming, close reading, and interpretation, consistent with Bowen's approach to document analysis, with attention given to evidence concerning examination-oriented pedagogy, digital access and use, curriculum-assessment alignment, teacher development, and student agency.

Following document selection, relevant information was extracted and organised according to the study objectives and conceptual framework. Qualitative content analysis was used to identify, code, compare, and interpret recurring ideas and patterns across the selected documents (Graneheim & Lundman, 2004). Initially, deductive codes were developed from the study's research focus and the existing conceptual framework, while closely related concepts emerging from the documents were subsequently grouped into broader categories. Through repeated comparison and refinement of codes and categories, themes were generated iteratively to represent the major patterns evident across the literature. To strengthen the credibility and trustworthiness of the analysis, interpretations were checked against the original documents, evidence was compared across different types of sources, and the coding and thematic structure were reviewed iteratively to ensure that the final themes remained grounded in the documentary evidence (Graneheim & Lundman, 2004; Lincoln & Guba, 1985). The use of multiple documentary sources also enabled source triangulation, while maintaining a transparent link between document selection, coding, categorisation, and thematic interpretation enhanced the dependability and confirmability of the findings.

Results

The analysis of the selected scholarly literature, educational reports, and policy-related documents identified four recurrent themes concerning the implementation of 21st-century education in Nepal and comparable contexts: (1) teacher-directed and examination-oriented pedagogy, (2) unequal and fragmented digital integration, (3) misalignment between 21st-century competency goals, curriculum, and assessment, and (4) insufficient and discontinuous teacher professional development. Because the study used document analysis rather than primary classroom observation, the findings reported below represent patterns identified across the reviewed sources. The analysis therefore distinguishes documentary evidence from the interpretive conclusions drawn from that evidence.

Theme	Evidence / Data Source	Key Finding	Interpretation
Exam-driven pedagogy	Studies/reports (Care et al., 2018; Watanabe, 2008; Dhakal, 2023)	Continued emphasis on lectures, textbooks, and examination performance	Constrains inquiry, collaboration, and learner-centred practices
Digital inequality	Educational studies/reports (Rana et al., 2020; Singh, 2024)	Unequal access to devices, connectivity, infrastructure, and ICT training	Limits equitable and sustained digital learning

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Theme	Evidence / Data Source	Key Finding	Interpretation
Curriculum–assessment mismatch	Curriculum/framework studies (Voogt & Roblin, 2012; Care et al., 2018)	21st-century competencies are promoted, but assessment remains largely conventional	Creates conflicting demands for teachers and schools
Teacher professional development	Research/reports (Dhakal, 2023; Rana et al., 2020; Darling-Hammond & McLaughlin, 2011)	Professional learning and institutional support remain insufficient or uneven.	Restricts effective and sustainable pedagogical/ICT integration

The table identifies four interconnected barriers to learner-centred and technology-supported education. Exam-driven pedagogy prioritizes lectures, textbooks, and test performance, leaving less room for inquiry and collaboration. Digital inequality means that differences in access to devices, connectivity, infrastructure, and ICT training limit who can participate in digital learning and whether it can be sustained.

A curriculum–assessment mismatch creates a further challenge: curricula promote 21st-century competencies, while conventional assessments may reward different forms of learning. Teachers are then expected to develop skills that examinations do not consistently measure. Finally, uneven professional development and institutional support can make it difficult for teachers to adopt new teaching methods or integrate ICT effectively over time.

Together, these themes suggest that changing classroom practice requires aligned assessments, equitable resources, and sustained support for teachers.

Discussion

Persistent Traditionalism and Examination Dominance

Across many systems, the stated vision of education emphasizes critical thinking, creativity, and lifelong learning. Yet, the enacted curriculum in classrooms remains heavily focused on textbook coverage, lecture-based instruction, and preparation for high-stakes exams (Watanabe, 2008). This tension is especially acute where national examinations determine access to secondary, higher, and overseas education, as in Nepal. Teachers and parents prioritise exam performance, often at the expense of exploratory activities, project-based learning and collaborative problem-solving (Ellis et al., 2015). Similar patterns have been documented in other low- and middle-income countries, where exam-oriented cultures limit the implementation of 21st-century pedagogies (Care et al., 2018).

From a phenomenological standpoint, classrooms can feel “frozen in time”: rows of desks, a teacher at the front, students copying notes, digital devices either absent or used only to display slides (Zhang et al., 2020). The promise of 21st-century competence frameworks is not always evident in learners' daily lived experiences.

Uneven Access to Digital Resources

Digital devices and platforms are becoming more common in students’ lives, but their use in teaching and learning is often inconsistent. Some urban private schools may have well-equipped computer labs, interactive whiteboards, and online learning management systems, while rural or under-resourced schools face challenges such as unreliable electricity, limited connectivity, and a shortage of devices (Singh, 2024).

Within schools, technology may be used sporadically—for presentations, drill-and-practice exercises, or exam registration—rather than being integrated into inquiry, collaboration, or creative production. This aligns with research suggesting that without strong pedagogical frameworks and professional development, technology is often employed to digitise traditional practices rather than to transform them (Starkey, 2011).

Moreover, digital divides intersect with socio-economic status, gender, language, and disability. Some students have multiple personal devices and high-speed internet at home; others depend on shared

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phones or local cybercafés (Noor & Hoque, 2021). During the pandemic, such disparities translated into stark differences in learning continuity. Thus, while digital technology is a defining feature of the 21st century, its educational benefits are unevenly distributed.

Misalignment between Competency Rhetoric, Curriculum and Assessment

Policies and curricula increasingly invoke 21st-century skills, but these aspirations do not always translate into coherent learning progressions, textbooks, teacher guides or assessments. Voogt and Roblin (2012) note that national curricula often add new competencies on top of already crowded content, without clarifying how teachers should prioritise or integrate them (Voogt & Roblin, 2012).
In Nepal, as in many contexts, curricular documents may mention critical thinking, creativity and ICT skills, yet prescribed content remains extensive, leaving little instructional time for deep exploration (Doleck et al., 2017). Where examinations continue to prioritise recall and procedural tasks, teachers receive mixed messages: they are told to develop 21st-century skills but assessed based on students' performance on traditional tests.

This misalignment contributes to a phenomenon that might be termed "competency rhetoric without competency reality" **(**Garavan & McGuire, 2001**)**. Teachers may adopt the language of projects, critical thinking, or learner-centred pedagogy in lesson plans while retaining highly teacher-directed classroom practices (Mtika & Gates, 2010). Without changes to assessment regimes and accountability structures, 21st-century education remains more slogan than substance.

Under-investment in teacher learning and professional agency

Teachers are frequently expected to be the primary implementers of 21st-century reforms, yet their professional learning opportunities are often episodic, lecture-based, and disconnected from classroom realities. Short workshops on "ICT integration" or "active learning" may introduce tools or methods without providing sustained coaching, peer collaboration, or time for experimentation.
Riandi et al. (2018) highlight that developing TPACK requires iterative practice in specific subject contexts, not one-off training. Hattie (2008) suggests that collective teacher efficacy, quality feedback, and professional communities have strong effects on student learning.

From a phenomenological viewpoint, many teachers experience reform fatigue: they are asked to change their methods without being afforded professional respect, decision-making power, or adequate resources. The intellectuals argued that teachers must be learners—curious, reflective, and willing to explore new pedagogies (Malmir & Mohammadi, 2018). For that to happen, systems must treat teachers as knowledgeable professionals, not merely as implementers of externally designed programs.

Under-Developed Student Agency, Voice and Wellbeing

Despite rhetoric about learner-centred education, many students have limited opportunities to exercise agency, contribute to decision-making, or pursue their interests in depth (Watling et al., 2021). Classroom routines may restrict student talk to brief responses to teacher questions; curricula may leave little space for student-initiated projects. Thornhill-Miller et al. (2023) argue that the 4Cs can support not only employability but also personal wellbeing and civic engagement.

In Nepalese and comparable contexts, structural constraints- large class sizes, limited resources, and cultural expectations about obedience and respect- can make it challenging to foster open dialogue and student initiative (Maringe & Sing, 2014). Similarly, students face pressures from examinations, family expectations, and, increasingly, social media–shaped ideals (Sheldon, 2010). The result is often a paradox: students are digitally connected and information-rich, yet their capacity to shape their own learning trajectories and life paths is constrained.

Redefining the Purpose of Education in the Digital Age

The study suggests that debates about 21st-century education are, at their core, debates about the purpose of education rather than about technology itself (Biesta, 2010). The rapid expansion of digital tools has intensified long-standing questions: Is education primarily a mechanism for transmitting canonical knowledge and sorting individuals into economic roles, or should it be understood as a holistic process of cultivating human capabilities, ethical judgment and collective responsibility (Biesta, 2010)? In many policy documents, the language of 21st-century skills—critical thinking, creativity, collaboration, communication and digital literacy—signals an acknowledgement that societies now

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require learners who can navigate complexity, uncertainty and interdependence (Carney, 2022). Yet, in practice, schooling in many systems continues to be oriented toward high-stakes examinations, credentialing and the reproduction of existing social hierarchies, a pattern also documented in the integration of 21st-century skills and ICT in Nepal's curriculum and classrooms (Dhakal, 2023; Rana et al., 2020). When information is abundant and instantly accessible, the central question is no longer whether students can recall facts, but whether they can critically evaluate information, integrate knowledge from multiple domains, act with empathy and integrity, and use their learning to address real problems in their communities and beyond.

Redefining the purpose of education in this context entails moving from viewing learners as passive recipients of predetermined content to viewing them as active agents capable of shaping their own lives and contributing to shared futures (Biesta, 2010). Education, in this sense, is about helping young people discover what they care about, develop a sense of meaning and direction, and build the competencies needed to turn values into action. Digital technologies become important not as ends in themselves, but as mediating tools that can expand access to knowledge, connect learners across boundaries, support creative expression and enable participation in civic and economic life (Nussbaum, 2016). These technologies are educationally valuable only to the extent that they serve broader human aims rather than driving reform in isolation. For systems like Nepal's, this reframing is particularly urgent: existing research on ICT policy implementation, digital infrastructure and 21st-century skills shows that exam-driven cultures, uneven access to devices and connectivity, and limited sustained teacher development constrain the transformative potential of digitalisation (Dhakal, 2023; Rana et al., 2020). In such conditions of economic uncertainty, migration, social change and environmental risk, education cannot be reduced to exam preparation or narrow labour-market matching; it must instead be conceived as a lifelong, relational and contextually grounded process of forming persons and communities who can live well with others in a digitally saturated world (Carney, 2022). This shift in purpose provides the normative foundation on which curriculum design, pedagogy, assessment, and technology use in the 21st century must rest.

Knowledge Contribution

21st-century education in Nepal requires a coherent realignment of the curriculum, pedagogy, assessment, leadership, and digital policy. At the system level, curriculum and examination frameworks need to move beyond rhetorical references to "21st-century skills" and instead specify how critical and creative thinking, collaboration, communication, digital literacies, and socio-emotional competencies are to be developed and assessed across grades and subjects. High-stakes examinations should gradually incorporate performance tasks, portfolios, and moderated teacher judgments that reward reasoning and problem-solving rather than mainly recall, while equity-focused digital strategies prioritise basic infrastructure, connectivity, appropriate devices, open resources in local languages, and support for marginalised learners. Across these reforms, teacher professionalism and agency are central; policies are unlikely to move beyond rhetoric if teachers remain cast as passive implementers of externally designed innovations.

At the level of schools and classrooms, leadership and pedagogy are key to translating policy aspirations into everyday experiences of deep learning and wellbeing. School leaders can nurture cultures of 21st-century learning by co-constructing a shared vision of deep learning and ethical agency with teachers, students and parents; modelling inquiry and risk-taking; and structuring time for collaborative professional learning through joint planning, lesson study and reflective dialogue. Within classrooms, teachers can organise curriculum around inquiry and problem-based tasks linked to learners' lives, employ collaborative approaches to cultivate the "4Cs," and use formative assessment tools, such as journals, concept maps and peer feedback, to develop metacognitive awareness alongside mandated summative tests. Where available, digital tools should be integrated purposefully to access diverse information, create multimodal artefacts, conduct simple data inquiries and connect with peers, while explicit attention to wellbeing, digital citizenship and student voice ensures that subject content becomes a vehicle for broader competencies and ethical dispositions.

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Figure 3. An integrated framework for advancing 21st-century education in Nepal.
Note. The figure connects system-level alignment with school leadership, classroom pedagogy, and equitable digital integration. Teacher professionalism and agency underpin these reforms, supporting the intended development of learner competencies, deep learning, wellbeing, and ethical agency. Arrows represent conceptual relationships rather than empirically tested causal pathways.

Recommendations

The study underlines persistent gaps between aspiration and reality—exam-driven traditionalism, fragmented and unequal digital integration, mixed messages from curricula and assessments, and limited opportunities for teacher learning and student agency—and identifies priorities for further research. More context-sensitive studies are needed in Nepal and similar low- and middle-income settings, including phenomenological work on how teachers and students experience reform, design-based interventions that trial deep-learning pedagogies in under-resourced schools, and policy ethnographies tracing the translation of global 21st-century discourses into local practice. Such research can strengthen the evidence base for context-appropriate policy and practice and enrich global debates on what it means to educate for human flourishing. Overall, the argument advanced here is that 21st-century education is not merely traditional schooling enhanced with new technologies, but a fundamentally reimagined enterprise in which success is defined by dignity, ethical agency and the capacity of all learners to engage with and transform their worlds.

Authors' Contributions

Dipak Kumar Bohara: Conceptualization, Methodology, Data Curation, Formal Analysis, Investigation, Writing – Original Draft, Writing – Review & Editing.

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Nirajan Bohara: Conceptualization, Methodology, Data Curation, Formal Analysis, Investigation, Writing – Original Draft, Writing – Review & Editing. Both authors contributed equally to the study and approved the final version of the manuscript.

References

Ah-Nam, L., & Osman, K. (2017). Developing 21st century skills through a constructivist-constructionist learning environment. *K-12 STEM Education, 3*(2), 205–216. https://www.learntechlib.org/p/209542/

Biesta, G. J. J. (2010). *Good education in an age of measurement: Ethics, politics, democracy*. Routledge. https://doi.org/10.4324/9781315634319

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Brooks, J. G., & Brooks, M. G. (1999). *In search of understanding: The case for constructivist classrooms* (Rev. ed.). ASCD. https://www.ascd.org/books/in-search-of-understanding

Care, E., Kim, H., Vista, A., & Anderson, K. (2018). *Education system alignment for 21st century skills: Focus on assessment*. Center for Universal Education at the Brookings Institution. https://www.brookings.edu/wp-content/uploads/2018/11/Education-system-alignment-for-21st-century-skills-012819.pdf

Carney, S. (2022). Reimagining our futures together: A new social contract for education [Review of the book *Reimagining our futures together: A new social contract for education*, by UNESCO]. *Comparative Education, 58*(4), 568–569. https://doi.org/10.1080/03050068.2022.2102326

Chai, C. S., & Kong, S.-C. (2017). Professional learning for 21st-century education. *Journal of Computers in Education, 4*(1), 1–4. https://doi.org/10.1007/s40692-016-0069-y

Darling-Hammond, L., & McLaughlin, M. W. (2011). Policies that support professional development in an era of reform. *Phi Delta Kappan, 92*(6), 81–92. https://doi.org/10.1177/003172171109200622

Dhakal, B. P. (2023). Pedagogical use of 21st-century skills in Nepal. *CHINTAN-DHARA, 17*(1), 1–13. https://doi.org/10.3126/cd.v17i01.53252

Doleck, T., Bazelais, P., Lemay, D. J., Saxena, A., & Basnet, R. B. (2017). Algorithmic thinking, cooperativity, creativity, critical thinking, and problem solving: Exploring the relationship between computational thinking skills and academic performance. *Journal of Computers in Education, 4*(4), 355–369. https://doi.org/10.1007/s40692-017-0090-9

Ellis, M., Lock, G., & Lummis, G. (2015). Parent-teacher interactions: Engaging with parents and carers. *Australian Journal of Teacher Education, 40*(5), 160–174. https://doi.org/10.14221/ajte.2015v40n5.9

Garavan, T. N., & McGuire, D. (2001). Competencies and workplace learning: Some reflections on the rhetoric and the reality. *Journal of Workplace Learning, 13*(4), 144–164. https://doi.org/10.1108/13665620110391097

Geisinger, K. F. (2016). 21st century skills: What are they and how do we assess them? *Applied Measurement in Education, 29*(4), 245–249. https://doi.org/10.1080/08957347.2016.1209207

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures, and measures to achieve trustworthiness. *Nurse Education Today, 24*(2), 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Hattie, J. (2008). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge. https://www.routledge.com/Visible-Learning-A-Synthesis-of-Over-800-Meta-Analyses-Relating-to-Achievement/Hattie/p/book/9780415476188

Jerald, C. D. (2009). *Defining a 21st-century education*. Center for Public Education.

K. C., N. (2023). A review of educational policies of Nepal. *Research Nepal Journal of Development Studies, 6*(1), 51–63. https://doi.org/10.3126/rnjds.v6i1.58921

Kong, Q., Allen, R. M., & Schreier, L. (2016). MyShake: Initial observations from a global smartphone seismic network. *Geophysical Research Letters, 43*(18), 9588–9594. https://doi.org/10.1002/2016GL070955

Citation: Bohara, D.K., & Bohara, N. (2026). Demystifying the Digital Shift in Education: Demands, Disparities, and Directions. Journal of Education and Learning Reviews, 3 (6), e3788; DOI: https://doi.org/10.60027/jelr.2026.e3788

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications. https://in.sagepub.com/en-in/sas/book/naturalistic-inquiry

Lombardi, M. M. (2007). *Authentic learning for the 21st century: An overview* (ELI Paper 1: 2007). EDUCAUSE Learning Initiative. https://library.educause.edu/resources/2007/1/authentic-learning-for-the-21st-century-an-overview

Malmir, A., & Mohammadi, P. (2018). Teachers' reflective teaching and self-efficacy as predictors of their professional success: A case of Iranian EFL teachers. *Research in English Language Pedagogy, 6*(1), 117–138. https://doi.org/10.30486/relp.2018.538818

Maringe, F., & Sing, N. (2014). Teaching large classes in an increasingly internationalising higher education environment: Pedagogical, quality and equity issues. *Higher Education, 67*(6), 761–782. https://doi.org/10.1007/s10734-013-9710-0

Mtika, P., & Gates, P. (2010). Developing learner-centred education among secondary trainee teachers in Malawi: The dilemma of appropriation and application. *International Journal of Educational Development, 30*(4), 396–404. https://doi.org/10.1016/j.ijedudev.2009.12.004

Mystakidis, S., Berki, E., & Valtanen, J.-P. (2021). Deep and meaningful e-learning with social virtual reality environments in higher education: A systematic literature review. *Applied Sciences, 11*(5), Article 2412. https://doi.org/10.3390/app11052412

Noor, S., & Hoque, M. (2021). Access to mobile phones and women's socio-economic empowerment in rural areas of Bangladesh: Understanding gender relation transformation. *Indonesian Journal of Social Research, 3*(1), 1–16. https://doi.org/10.30997/ijsr.v2i3.105

Nussbaum, M. C. (2016). *Not for profit: Why democracy needs the humanities* (Updated ed.). Princeton University Press. https://doi.org/10.1515/9781400883509

Partnership for 21st Century Skills. (2007). *P21 framework for 21st century learning*. https://ucanr.edu/sites/default/files/2021-06/352129.pdf

Piaget, J. (1970). *Science of education and the psychology of the child* (D. Coltman, Trans.). Orion Press. https://search.worldcat.org/title/Science-of-education-and-the-psychology-of-the-child/oclc/1415901957

Rana, K., Greenwood, J., & Fox-Turnbull, W. (2020). Implementation of Nepal's education policy in ICT: Examining current practice through an ecological model. *The Electronic Journal of Information Systems in Developing Countries, 86*(2), Article e12118. https://doi.org/10.1002/isd2.12118

Riandi, R., Apriliana, V., & Purwianingsih, W. (2018). The analysis of 21st-century teachers' ability in technological pedagogical content knowledge. *Advances in Social Science, Education and Humanities Research, 212*, 275–278. https://doi.org/10.2991/icei-18.2018.60

Rivas, Y. C., Valdivieso, P. A. V., & Rodríguez, M. A. Y. (2020). Virtual reality and 21st-century education. *International Research Journal of Management, IT and Social Sciences, 7*(1), 37–44. https://doi.org/10.21744/irjmis.v7n1.820

Sheldon, P. (2010). Pressure to be perfect: Influences on college students' body esteem. *Southern Communication Journal, 75*(3), 277–298. https://doi.org/10.1080/10417940903026543

Singh, R. B. (2024). Navigating English language education challenges in resource-limited contexts. *KMC Journal, 6*(1), 135–152. https://doi.org/10.3126/kmcj.v6i1.62336

Starkey, L. (2011). Evaluating learning in the 21st century: A digital age learning matrix. *Technology, Pedagogy and Education, 20*(1), 19–39. https://doi.org/10.1080/1475939X.2011.554021

Tafonao, T., Saputra, S., & Suryaningwidi, R. (2020). Learning media and technology: Generation Z and Alpha. *Indonesian Journal of Instructional Media and Model, 2*(2), 89–100. https://doi.org/10.32585/ijimm.v2i2.954

Thornhill-Miller, B., Camarda, A., Mercier, M., Burkhardt, J.-M., Morisseau, T., Bourgeois-Bougrine, S., Vinchon, F., El Hayek, S., Augereau-Landais, M., Mourey, F., Feybesse, C., Sundquist, D., & Lubart, T. (2023). Creativity, critical thinking, communication, and collaboration: Assessment, certification, and promotion of 21st-century skills for the future of work and education. *Journal of Intelligence, 11*(3), Article 54. https://doi.org/10.3390/jintelligence11030054

Citation: Bohara, D.K., & Bohara, N. (2026). Demystifying the Digital Shift in Education: Demands, Disparities, and Directions. Journal of Education and Learning Reviews, 3 (6), e3788; DOI: https://doi.org/10.60027/jelr.2026.e3788

Tsai, C.-C., & Chai, C. S. (2012). The "third"-order barrier for technology-integration instruction: Implications for teacher education. *Australasian Journal of Educational Technology, 28*(6), 1057–1060. https://doi.org/10.14742/ajet.810

Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st-century competences: Implications for national curriculum policies. *Journal of Curriculum Studies, 44*(3), 299–321. https://doi.org/10.1080/00220272.2012.668938

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Watanabe, M. (2008). Tracking in the era of high-stakes state accountability reform: Case studies of classroom instruction in North Carolina. *Teachers College Record, 110*(3), 489–534. https://doi.org/10.1177/016146810811000307

Watling, C., Ginsburg, S., LaDonna, K., Lingard, L., & Field, E. (2021). Going against the grain: An exploration of agency in medical learning. *Medical Education, 55*(8), 942–950. https://doi.org/10.1111/medu.14532

Zhang, Z., Wan, S. W.-Y., Chan, L. H., Kwan, P.-Y. L., Tam, L.-L. S., & Wan, E. W.-P. (2020). Collective teacher-researcher inquiry: Localizing school-based curriculum development in diversified Hong Kong schooling contexts. *Journal of Practitioner Research, 5*(2), Article 3. https://doi.org/10.5038/2379-9951.5.2.1145

Citation: Bohara, D.K., & Bohara, N. (2026). Demystifying the Digital Shift in Education: Demands, Disparities, and Directions. Journal of Education and Learning Reviews, 3 (6), e3788; DOI: https://doi.org/10.60027/jelr.2026.e3788