Bodhi International Journal of
Research in Humanities, Arts and Science

Vol. 10 Special Issue 1 March 2026
E-ISSN: 2456-5571

Reframing Digital Literacy through Task-Based Pedagogy in Pre-Service Teacher Education

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Crossref doi
Open Access

Manuscript ID:
BIJ-SPL1-MAR26-EDU-029

Subject: Education

Received : 23.01.2026
Accepted : 04.02.2026
Published : 14.03.2026

DOI: 10.64938/bijsi.v10si1.26.Mar029

Abstract

As the world continues to embrace digital technologies, there is an increasing need for teachers who can effectively use the tools of digital technology for teaching and learning. While many teacher education programs include an emphasis on developing teachers' digital literacy skills, the nature of the instruction provided to student teachers often does not facilitate the effective integration of digital technologies into their practice--the instructional approaches are frequently tool-oriented and fragmented rather than integrated through pedagogical practices. The purpose of this conceptual paper is to present a framework for re-conceptualising digital literacy within pre-service teacher education as task-based pedagogy where the use of technology is integrated into authentic, inquiry-based, contextualised tasks. The development of a pedagogical model for the integration of task-based learning (TBL) and multifaceted digital literacy has been informed by constructivist learning theory, sociocultural perspectives, and contemporary frameworks for digital competence. The proposed framework emphasises cognitive engagement, collaborative knowledge construction, responsible digital citizenship, and reflective practice. The paper concludes with a consideration of the implications for curriculum design, teacher preparation programs, and future empirical research. By further redefining digital literacy as a pedagogical practice rather than solely a technical skill-based competency, this research contributes to the developing discourse surrounding transformative teacher education in the digital age.

Keywords: digital literacy, task-based pedagogy, pre-service teacher education, digital competence, constructivist learning, teacher preparation

Introduction

As education has moved towards digitalization at an increasing speed, there have also been shifts in the way that we teach, learn, and assess students around the world. With the growing use of digital mediums like online repositories and virtual collaboration tools, digital classrooms continue to focus on using data- driven feedback and assessment to facilitate learning. Teachers are no longer simply delivering content; rather, they are facilitating learning through digitally mediated environments. Therefore, developing digital literacy in our educators has become an essential skill for teachers (Reddy et al., 2020).

While there is a proliferation of digital technologies used for teaching and learning, most of the time the development of digital literacy is relegated to technical training or stand alone workshops in teacher education. For example, pre-service teachers are routinely trained to use software applications without any critical thought given to how they might integrate digital tools into the pedagogy of their classroom practice. The focus on using digital tools in an instrumental manner can

limit the potential for developing reflective, ethical and pedagogically sound digital literacy in our pre-service teachers (Falloon, 2020).

This paper presents the argument that the development of digital literacy in pre-service teacher education must be re-conceptualised using a task-based pedagogical approach. By situating learning in authentic and problem-based tasks, the development of digital literacy will move from an emphasis on mechanical skill to a more holistic, transformational view of pedagogical competence. The research proposes a conceptual framework that integrates task-based pedagogy within a multidimensional approach to developing digital literacy. (Qureshi et al., 2021)

Digital Literacy in Teacher Education: Conceptual Foundations

Digital literacy has evolved from its previous definition, which focused mainly on basic computer skills. Now, there are many different definitions of digital literacy, including critical evaluation of information, ethical participation in the digital world, and collaborative creation and problem solving in a digital environment. Digital literacy is now understood to be multi-faceted and consists of four different types of literacy: technical, cognitive, social, and ethical. (Alenezi et al., 2023)

Digital Literacy is important for teacher education programs because the way teachers use technology will affect the way their students use it. Teachers need to be able to navigate digital technology as well as create meaningful learning experiences for their students, conduct critical evaluations of the digital resources they use, foster a sense of digital citizenship in their students, and act as a role model for ethical behaviours while Online. (Pangrazio & Sefton-Green, 2021)

There are still many teacher preparation programs that compartmentalize digital literacy in their teacher preparation program, which means that they teach educational technology separately from pedagogy. As a result, there is little overlap between the skills required for using technology and the skills to be effective in designing instruction. This issue points to the need for developing teacher preparation frameworks that incorporate digital competencies into all core curriculum areas. (Tomczyk & Fedeli, 2022)

Task-Based Pedagogy as a Transformative Approach

The constructivist and experiential traditions of learning are where task-based pedagogy originated. Task-based pedagogy emphasizes the need for learners to engage with and solve real-world tasks through engaging and problem-solving tasks as part of a process of learning through experience and meaning-making. A task is defined as an activity that requires learners to engage with knowledge and/or skill in order to achieve a communicative or purposeful outcome.

Within the field of teacher education, task-based pedagogy represents a shift from learning to passively receive theoretical content to actively creating knowledge. Pre-service teachers create lesson plans using digital technologies, develop materials using multimedia technologies, conduct assessments using digital technologies, and collaborate on virtual simulations of their teaching practice. These tasks require the integration of pedagogical and digital knowledge.(Adubasim & Samson, 2026)

Task-based pedagogy is aligned with sociocultural theory. Sociocultural theory states that we learn by socially interacting with others and externally mediating with social and cultural objects. The digital tools that are used in task-based pedagogy serve as mediating tools that learners use to co-construct development of their understanding. When digital literacy is embedded in collaborative tasks, it is viewed as a socially situated behaviour and not an isolated technical skill (Shloul et al., 2024).

Reframing Digital Literacy through Task-Based Integration

To implement a new approach to teaching Digital Literacy, it is critical that we change our thinking about Digital Competency from something static, to being a dynamic, contextualized ability. In order for Teacher Preparation Programs to provide useful teacher preparation, they must design task-based

activities that will allow pre-service teachers the opportunity for meaningful engagement with technology rather than simply teaching them "how to use technology" and then moving onto the next step in their teacher preparation (Knaus, 2022).

As an illustration, rather than delivering a lecture about Digital Assessment Tools, pre-service teachers might develop an online formative assessment for a diverse population of learners, implement the assessment in a simulated setting, and reflect upon student engagement within the process, as well as how to interpret the data collected. Through the design, implementation and reflection of the given task, pre-service teachers will gain technical competency and be able to connect it with pedagogy, critical thinking, and ethical responsibility.

This new framework is predicated on three principles. The first principle is that all digital literacy tasks must be contextually grounded in authentic teaching situations. The second principle is that all digital literacy learning tasks must encourage higher-order thinking, collaboration, and reflective practice. The third principle is that assessment of pre-service teachers' digital literacy knowledge must be based on technical proficiency, alignment with pedagogy, and awareness of ethical considerations.

Proposed Conceptual Framework

Technical fluency means the ability to use digital tools successfully. While developing technical skills through a task-based approach, the focus is on using them in a purposeful manner instead of practicing them outside the task. Cognitive engagement includes thinking critically about digital content, solving problems with that content, and being creative with the content. Through task completion, preservice teachers will analyze digital materials and make changes to them for a variety of learners. They will also create new ways of using technology to teach.

Collaborative participation includes the ability to communicate and collaboratively build knowledge with others in a digital environment. The use of collaborative tools to accomplish group tasks will help with teamwork and communication while using technology. Ethical responsibility includes being a digital citizen, aware of how to keep data safe, and using technology correctly. When completing reflective tasks, preservice teachers will think critically about the ethical dilemmas posed by technology.

Each of these areas work together through the tasks that have been identified as a part of authentic pedagogical practice, and they will collectively work toward building digital literacy across the entirety of the pre-service teachers' pedagogy.

Implications for Teacher Education Programs

Existing requirements for implementing task-oriented pedagogy into teacher preparation must first be achieved through the restructuring of the curriculum. Digital literacy must be integrated within both the methods courses and practicum experiences, rather than relying solely on technology courses, and incorporated into the design of assessments requiring the completion of tasks. Equally important to the integration of technology through a task-oriented approach will be the development of teachers' knowledge about digital literacy through modeling and demonstrating these strategies in the educator's instructional practices. Additionally, the availability of institutional support, such as adequate digital infrastructure, will enhance the potential for success with this initiative. Similarly, the availability of collaborative platforms for educators to share their experiences with the use of digital technologies will support the implementation of this initiative. Finally, it is imperative that assessment practices are not focused solely on the attainment of technical skills but are also inclusive of portfolio assessments, reflective journals, and performance-based assessments to more accurately portray the individual's digital competence. (Decuypere et al., 2021)

Directions for Future Research

While this study has developed a conceptual model, there is a need for further research, particularly empirical research, to confirm the validity of the proposed framework. Future researchers may choose

to examine the efficacy of task-based digital interventions on pre-service teachers' levels of competence, self-confidence, and classroom readiness. Comparative studies across institutions and cultures may also contribute to the body of literature that describes how context may affect the development of digital literacy skills. Finally, longitudinal research studies would be beneficial in determining whether the use of task-oriented instructional strategies within digital preparation programs affects teachers' instructional practices in the future.

Conclusions

Teacher education using digital technologies needs to be driven by new ways of learning using the digital world instead of just tool-based training only. Task-centred learning is one potential way of addressing this by embedding digital experiences into real and collaborative forms of practice. If teacher education views digital literacy as pedagogically driven contextualised practice, it will create some future educators with a better understanding of the challenges that come from using technology in the classroom. This framework contributes to the continuing conversation about digital transformation in education and forms the basis for future empirical validation.

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