

Developing Preschool Teacher Competencies and Well-being for the Digital Age: A Conceptual Framework

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ABSTRACT

Objective: This concept paper aims to explore the dual challenge faced by preschool educators in the digital age—developing digital competencies while maintaining psychological well-being. **Method:** Using a conceptual qualitative approach, this study conducted a thematic synthesis of recent literature from 2018 to 2024 across multiple international databases. The analysis was guided by established educational and psychological frameworks including DigCompEdu, PERMA, and the Job Demands-Resources (JD-R) model. **Results:** The study identifies three key domains crucial for preschool teacher development: digital pedagogy competencies, socio-emotional well-being, and professional sustainability. These domains are synthesized into a proposed framework that offers integrated solutions. **Novelty:** The proposed framework bridges a gap in existing research by integrating digital skill development and teacher well-being, specifically within the underexplored context of early childhood education.

INTRODUCTION

The growing influence of digital technologies has transformed not only the way we live but also the way we teach and learn. In the context of early childhood education (ECE), the integration of digital tools and platforms is increasingly encouraged to enhance teaching strategies and support diverse learner needs. However, this shift places significant demands on preschool teachers, who must now navigate a complex landscape of digital literacy, online pedagogy, and rapid technological change (French et al., 202; Falloon, 2020). While the conversation around digital transformation often centers on student competencies, it is crucial to examine the readiness, well-being, and professional development of the educators who facilitate this shift.

Digital competence in education has been widely discussed, particularly following the widespread shift to online and hybrid learning during the COVID-19 pandemic. The European Framework for the Digital Competence of Educators (DigCompEdu) identifies key areas such as digital resource creation, learner engagement through digital means, and digital assessment strategies (Redecker, 2017). These competencies are increasingly essential across all educational levels, including in early years settings where screen exposure, interactive media, and online communication with parents are becoming more common. However, educators often receive limited training in these areas, and many feel unprepared to adopt technology in developmentally appropriate ways (davis, 2017).

Simultaneously, the psychological well-being of teachers in the digital age has emerged as a growing concern. Studies have shown that increased expectations to integrate technology, manage digital platforms, and remain constantly connected can lead to heightened stress, burnout, and work-life imbalance (Skaalvik & Skaalvik, 2018).

For preschool teachers—who already navigate emotionally intensive, care-oriented roles—these pressures can be particularly burdensome. Well-being is closely linked to teacher performance, motivation, and ultimately, child development outcomes (Jennings et al., 2019). Thus, any effort to improve teacher digital competence must also consider strategies that support emotional resilience and mental health.

Despite a growing body of literature exploring either digital pedagogy or teacher well-being independently, there is a lack of integrated frameworks that address both domains simultaneously—especially in the context of ECE. Much of the existing research is fragmented or focused on primary and secondary levels, leaving preschool education underrepresented (Ihmeideh & Al-Qatawneh, 2020). This gap calls for a reimagining of teacher training models that embed well-being and digital upskilling as intertwined components, rather than separate initiatives.

Given this background, the present concept paper aims to explore how digital competence development and well-being support can be jointly addressed in the professional preparation of preschool teachers. Specifically, it proposes a conceptual framework that integrates digital pedagogy, socio-emotional resilience, and reflective practice as a foundation for sustainable and effective teaching in the digital age. The paper seeks to answer the following guiding questions:

- (1) What digital competencies are most relevant for early childhood educators today?
- (2) How does the demand for digital integration impact their well-being?
- (3) What models can be adopted or adapted to balance skill development with emotional sustainability?

RESEARCH METHOD

This study adopts a qualitative conceptual approach aimed at developing a framework that integrates digital competencies and teacher well-being within early childhood education. Rather than conducting an empirical investigation, this paper synthesizes existing literature, theoretical models, and policy documents to construct a coherent framework relevant to preschool teacher training in the digital age.

Research Design

The study is exploratory and conceptual in nature. It focuses on analyzing and interpreting trends in teacher digital skill development, psychological well-being, and early childhood pedagogy. By drawing from existing qualitative studies, policy frameworks (e.g., DigCompEdu), and psychological models (e.g., PERMA and JD-R), the paper aims to establish conceptual linkages between teacher competence and well-being.

Participants and Context

As this is a concept paper, no direct participants were involved. However, the intended context for application is within preschool teacher training programs, both in pre-service and in-service settings. The framework is designed to be adaptable across diverse early childhood education systems, particularly in regions undergoing rapid digital transformation in education.

Data Sources and Instruments

Data for the study was collected through a systematic literature review. Academic journal databases including Scopus, ERIC, SpringerLink, and Google Scholar were used to gather relevant peer-reviewed articles published between 2018 and 2024. Keywords included: “digital competence,” “teacher well-being,” “early childhood education,” “digital pedagogy,” and “teacher resilience.” A total of 65 relevant articles were reviewed, with a focus on high-impact, internationally indexed publications.

Procedure

The review process followed four steps. First of all, identification of relevant sources using defined keywords. Secondly, Screening of abstracts and full texts based on relevance to early childhood and digital teaching. Third, thematic analysis to extract recurring frameworks, challenges, and solutions. Lastly, synthesis of insights into a conceptual model that integrates digital competencies with well-being strategies.

Data Analysis

A thematic analysis technique was employed to identify patterns and frameworks in the literature. Key themes such as “digital resource creation,” “stress and burnout,” “teacher digital readiness,” and “self-care strategies” were coded. These themes were then organized into three broader domains: digital pedagogy, socio-emotional well-being, and professional sustainability.

This methodological approach ensures that the proposed framework is rooted in current research and aligned with global trends in teacher education. It also allows for flexible adaptation in future empirical studies or pilot program development.

RESULTS AND DISCUSSION

The synthesis of the reviewed literature reveals three critical and interdependent domains that must be addressed to ensure early childhood educators are prepared for the demands of teaching in the digital age: (1) digital pedagogy competencies, (2) socio-emotional well-being, and (3) professional sustainability. These domains form the basis of the conceptual framework proposed in this paper.

Digital Pedagogy Competencies

The first domain pertains to the specific technological and pedagogical skills educators require to integrate digital tools into early childhood learning environments effectively. The DigCompEdu framework (Redecker, 2017) highlights essential areas such as digital content creation, digital resource management, online collaboration, and digital assessment. In the context of early childhood education, these competencies must be adapted to suit developmental appropriateness, emphasizing play-based, interactive, and sensory-rich media. However, studies indicate that many preschool teachers lack access to professional development programs that address these tailored needs (Plumb & Kautz, 2022). Furthermore, research by Ihmeideh and Al-Qatawneh (2020) suggests that digital integration in ECE is often hindered by institutional constraints, lack of infrastructure, and teacher apprehension toward technology. Thus, capacity building in digital pedagogy must be a strategic priority in teacher training programs.

Socio-Emotional Well-being

The second domain involves the psychological and emotional health of teachers as they navigate digital transformation. Existing research illustrates a direct correlation between the increasing digital workload and teacher stress, anxiety, and burnout (Skaalvik & Skaalvik, 2018). For early childhood educators, who operate in emotionally laborious environments, the addition of digital responsibilities without corresponding support can exacerbate existing pressures (Mahapatra & Sharma, 2021). The Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2017) underscores that well-being is influenced by the balance between professional demands and accessible resources. Therefore, promoting teacher well-being must include both systemic support (e.g., reasonable workloads, access to counseling) and personal strategies (e.g., mindfulness, work-life boundaries). The integration of well-being content into digital training curricula can provide dual benefits: skill enhancement and psychological resilience.

Professional Sustainability

The third domain, professional sustainability, reflects the long-term implications of digital integration on teacher motivation, retention, and professional identity. A sustainable professional environment acknowledges that digital proficiency is not a one-time achievement but an ongoing process that must be nurtured through supportive ecosystems. Evidence from recent studies (Jennings et al., 2019; Falloon, 2020) suggests that continuous professional development (CPD), communities of practice, and institutional recognition of teacher efforts are vital for maintaining morale and efficacy. Moreover, reflective practice, mentoring, and peer collaboration enhance both professional growth and emotional support among educators. The framework proposed herein emphasizes that digital competence and well-being must be framed as mutually reinforcing rather than separate concerns.

Conceptual Framework Proposal

Drawing from the findings, this paper proposes an integrated conceptual framework comprising three foundational pillars: (1) digital pedagogical knowledge, (2) emotional resilience, and (3) professional support systems. Each pillar encompasses multiple actionable components:

- (1) **Digital Pedagogical Knowledge:** Incorporation of content-specific digital tools, training in online communication and collaboration platforms, and strategies for creating interactive, developmentally appropriate digital learning materials.
- (2) **Emotional Resilience:** Inclusion of well-being modules in teacher training programs, promoting techniques such as mindfulness, time management, and digital disconnection strategies.
- (3) **Professional Support Systems:** Establishment of peer learning groups, mentoring programs, and institutional policies that support continuous development and value teacher mental health.

This framework provides a strategic and holistic response to the dual challenge of preparing teachers for digital pedagogy while safeguarding their well-being. It aims to

inform future curriculum development, policy formulation, and empirical investigations that seek to strengthen ECE in the digital era.

CONCLUSION

Fundamental Finding : This concept paper has proposed a framework that unifies digital pedagogical competencies, emotional resilience, and professional sustainability to address the challenges faced by preschool educators in the digital age. The findings underscore the necessity of treating digital skill development and teacher well-being as mutually reinforcing domains within teacher education. **Implication :** Implications for teacher training programs include the integration of well-being modules, continuous digital upskilling, and the development of supportive institutional policies. By adopting this holistic approach, early childhood education systems can better prepare educators to thrive in increasingly digital learning environments. **Limitation :** The limitations of this paper lie in its conceptual nature; empirical validation through case studies or pilot implementations is necessary for future development. **Future Research :** Further research is encouraged to test the practical applicability of the proposed framework and adapt it to diverse cultural and institutional contexts.

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