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An Analytical Inquiry into Blended Learning: A Comparative Synthesis of Educational Research

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Abstract

This study aimed to provide a conceptual explanation and comparative analysis of blended learning through a qualitative meta-synthesis. The data comprised 18 Persian theses (8 doctoral and 10 master's theses, 1390–1403 Solar Hijri) and 15 international theses (2020–2025), selected through purposive sampling according to criteria including novelty, thematic relevance, and quality. Data were analyzed using Roberts' six-stage model through three levels of coding—initial, axial, and main themes—followed by synthesis, interpretation, and comparison of the findings. To enhance credibility, two researchers independently coded both datasets, and three specialists in the field reviewed the findings and the final model. Comparative results showed that both datasets emphasized the conceptual aspects of blended learning, while philosophical, ethical, and cultural dimensions received limited attention. Although assessment of blended learning was addressed, it lacked an adequate theoretical foundation. Domestic research revealed neglect of futures studies and an absence of scenario building, whereas international studies paid greater attention to infrastructure, implementation challenges, and longitudinal research. Based on the comparative analysis of the domestic and international datasets, a comparative systems model was developed across three layers: input, process, and output. The model clearly revealed the gap between the philosophical, theoretical, and practical dimensions of blended learning. The study dimensions of blended learning. The study also emphasizes the need to redefine its philosophical dimensions, and integrate futures studies to guide educational innovation and improve the quality of blended learning.

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Extended Abstract

Introduction

Blended learning has become one of the most influential educational approaches by combining the advantages of face-to-face instruction with the flexibility of digital learning environments. Advances in educational technology and the rapid expansion of online education have accelerated its adoption across educational institutions worldwide. Despite its popularity, however, the literature presents diverse and sometimes conflicting interpretations of blended learning concerning its philosophical assumptions, pedagogical foundations, instructional models, and implementation strategies. While international studies generally emphasize technological innovation and institutional effectiveness, Persian research tends to focus on pedagogical practices, curriculum development, and educational philosophy. Consequently, an integrated theoretical framework capable of reconciling these perspectives remains underdeveloped. This study therefore aimed to synthesize domestic and international research to identify convergent and divergent conceptual patterns and to develop a comprehensive theoretical model of blended learning. The guiding research question was: How is blended learning conceptualized and operationalized in Persian and international academic research, and what conceptual patterns emerge through comparative qualitative synthesis?

Method

This study adopted an exploratory qualitative meta-synthesis based on Noblit and Hare's (1988) meta-ethnographic methodology and Roberts' (2007) six-stage synthesis framework. Rather than aggregating findings, the study sought to generate higher-order conceptual interpretations through comparative analysis. The research corpus consisted of 33 theses, including 18 Persian theses (2011–2024) and 15 international theses (2020–2025), purposively selected from IranDoc, SID, OATD, and EBSCO according to methodological quality and conceptual relevance. Data analysis followed five sequential stages: thematic extraction, thematic comparison, identification of convergent and divergent patterns, development of an integrative conceptual model, and expert validation to enhance credibility and interpretive rigor.

Results

The comparative synthesis identified several common themes across both research traditions, including instructional design, learner engagement, interaction, assessment, and recognition of blended learning as an effective educational approach. Nevertheless, important conceptual differences were identified. Persian studies concentrated primarily on philosophical foundations, curriculum planning, instructional organization, and educational objectives. In contrast, international studies emphasized technological infrastructure, learning management systems, digital platforms, institutional readiness, and organizational implementation. Furthermore, both bodies of literature demonstrated notable conceptual gaps. Philosophical inquiry, ethical considerations, and futures-oriented perspectives received limited attention. Domestic studies rarely addressed educational foresight, scenario planning, or sociotechnical adaptation, whereas international studies devoted comparatively less attention to epistemological reflection, cultural responsiveness, and localized educational contexts.

Discussion and Conclusion

The findings indicate that blended learning research has developed through two complementary yet largely independent traditions. Persian scholarship provides substantial philosophical and pedagogical insights but pays comparatively limited attention to technological

transformation, digital infrastructures, and institutional innovation. In contrast, international research offers well-developed technological and organizational perspectives while giving relatively little consideration to the philosophical, ethical, and cultural foundations of blended learning. This imbalance has contributed to a persistent disconnect between theoretical conceptualization and practical implementation, resulting in fragmented understandings of blended learning across different academic contexts. The comparative synthesis further demonstrates that neither research tradition alone adequately captures the multidimensional nature of blended learning within increasingly complex educational environments. Addressing this limitation requires moving beyond technology-centered or pedagogy-centered approaches toward integrative theoretical frameworks that simultaneously encompass pedagogical, technological, philosophical, ethical, and contextual dimensions. Accordingly, this study proposes an integrative theoretical model that combines the philosophical and pedagogical strengths of Persian scholarship with the technological and systemic perspectives of international research. The proposed framework advances three strategic priorities for future research and practice: reconceptualizing blended learning through post-digital educational philosophy, embedding ethical and culturally responsive principles into instructional design, and incorporating futures studies into educational planning and innovation. By integrating these complementary dimensions, the model provides a comprehensive foundation for curriculum development, instructional design, educational policymaking, and future research while supporting the design and implementation of context-sensitive and globally informed blended learning environments.

Author Contributions: In this article, S.S. Musavian developed the core research concept and methodology, and collaborated equally with S. Norouzi on data collection and formal analysis. S. Norouzi was also responsible for validating the results and drafting the conclusion. A. Taghizade contributed by writing the literature review and undertaking the overall review and editing of the manuscript. Ultimately, the findings were discussed jointly, and all authors read and approved the final version.

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Data Availability: The datasets analyzed during this study are available from the corresponding author upon reasonable request.

AI Use Statement: No artificial intelligence was used for the writing, analysis, or translation of this manuscript. AI was solely employed as a supportive tool to generate the initial graphic for the blended learning systemic model. The authors subsequently redesigned, edited, and adapted this visual extensively to align perfectly with the research findings, taking full responsibility for the final model.

Ethical Approval: All steps of this research were carried out in complete accordance with ethical research standards. Additionally, all published documents and sources were used with the utmost respect for copyright and intellectual property rights.