A FRAMEWORK FOR IMPLEMENTING DIGITAL TRANSFORMATION IN BASIC EDUCATION IN CHINA

DISERTASI

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DECLARATION OF ACADEMIC INTEGRITY

I hereby truthfully declare that the Dissertation I have prepared as a requirement to obtain a Doctoral degree from the Graduate Program of Universitas Pendidikan Ganesha is entirely my own work. Certain parts of the Dissertation that I have cited, and which are the works of others, have been clearly acknowledged as sources, in accordance with the norms, rules, and ethics of scientific writing. Furthermore, I have not utilized unauthorized artificial intelligence or automated text-generation tools beyond what is explicitly permitted and documented in this study. Should it later be discovered that all or part of this Dissertation is not my own work, or that plagiarism exists in certain sections, I am willing to accept sanctions including the revocation of the academic degree I have obtained and other penalties in accordance with the prevailing laws and regulations.

Singaraja, 17/September, 2026

杨芳

Yang Fang

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A FRAMEWORK FOR IMPLEMENTING DIGITAL TRANSFORMATION IN BASIC EDUCATION IN CHINA

YANG FANG

ABSTRACT

With the rapid advancement of digital technologies, digital transformation has become a core driver for advancing basic-education modernization in China. Despite national policy promotion, most primary and secondary schools are still in early-phase transformation, facing practical barriers including ambiguous pathways and a lack of systematic operational frameworks. Existing research offers limited comprehensive frameworks tailored to the Chinese basic-education context. Addressing this gap, this study develops and validates an implementation framework for school digital transformation, answering four core research questions regarding critical success factors (KSFs), factor mechanisms, actionable pathways, and framework practical effectiveness. Adopting a mixed-methods closed-loop research design, this study combines systematic literature review, Delphi consultation, questionnaire survey (N = 620), structural equation modelling, chain-mediation and multi-group analysis, and multiple-case pattern-matching evaluation. Twenty validated KSFs were categorized into the PPTE (People-Process-Technology-Ecosystem) four-dimension framework. Results support a sequential "value-conversion engine" chained-mediation mechanism across the four dimensions, revealing synergistic sequential transmission among ecosystem, human actors, organizational processes, and technology. Multi-group analysis confirms evident regional heterogeneity: eastern, central, and western schools follow governance-optimization, organizational-execution, and resource-foundation-oriented pathways respectively. Built upon these findings, a four-stage (Assessment-Planning-Implementation-Optimization) implementation framework with region-differentiated guidance is constructed. Pattern-matching case validation yields an overall matching rate of 82.4 %, exceeding the 70 % heuristic threshold. Theoretically, this study validates the PPTE framework for basic education, reveals systemic co-evolution mechanisms beyond technology determinism, and advances the "common-mechanisms-with-differentiated-pathways" perspective. Practically, the actionable multi-stage framework provides structured guidance for policymakers and school practitioners.

Keywords: Basic Education, Digital Transformation, Key Success Factors, PPTE Framework, Four-Stage Implementation Framework, Differentiated Pathways, Collaborative Mechanism.