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Scaling Technology Integration and Macro Policy Governance in Developing Education Systems: A Comprehensive Case Study on Digital Transformation in Bangladesh

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Abstract

The contemporary global educational paradigm necessitates a strategic transition from traditional didactic models to technology-infused, future-ready pedagogical frameworks. This paper analyzes the comprehensive scaling trajectory of digital education by evaluating historical milestones, institutional performance accountability, and massive multi-sectoral transformation programs within Bangladesh's primary, secondary, and tertiary education sub-sectors. At the post-primary level, institutional frameworks like the Annual Performance Agreement (APA) facilitated the deployment of multimedia classrooms across 32,667 institutions, expanding to transform over 38,000 classrooms into active multimedia hubs. This structural evolution relies heavily on the peer-driven Teacher's Portal (Shikhok Batayan) and automated real-time fault tracking via the 'Online Multimedia Classroom Management System' (MMCMS). Crucially, this research exposes the state's latest strategic leap forward articulated in the landmark FY 2026-27 national budget documentation, which shifts the national paradigm from basic ICT literacy to artificial intelligence (AI) readiness, smart pedagogical infrastructure, and Fourth Industrial Revolution (4IR) integration. Under this newly unveiled fiscal framework, the state is executing a highly ambitious digital blueprint mandating 25,000 advanced secondary classrooms and 100 blended learning laboratories, running parallel to an expansive BDT 49,950 Crore elementary digitisation phase under the Fifth Primary Education Development Programme (PEDP-5). Ultimately, this study demonstrates how state-level financial targets and cutting-edge EdTech applications can be systematically harmonized with local realities to permanently eliminate the digital divide.

Keywords: AI Readiness; BdREN Network; Digital Transformation; EdTech Governance; Multimedia Classrooms; PEDP-5; Shikhok Batayan.