



11 June 2017

Digital Transformation in Basic Education: Role of Computer Science in Enhancing Learning Outcomes in Indian Schools

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Abstract

The rapid digital transformation in education has significantly reshaped teaching and learning practices in Indian schools. This paper explores the role of computer science in enhancing learning outcomes at the basic education level. With the integration of digital tools, educational software, and computational thinking approaches, students are experiencing more interactive and personalized learning environments. The study highlights how computer-based instruction improves student engagement, conceptual understanding, and academic performance. It also examines the challenges faced by schools, including lack of infrastructure, digital divide, and teacher preparedness. The findings suggest that effective implementation of computer science-driven educational technologies can bridge learning gaps and improve foundational education quality in India. Strengthening digital literacy and providing adequate training to educators are essential for sustainable educational development.

Keywords: Digital transformation, Basic education, Computer science, Learning outcomes, Indian schools, ICT in education, Educational technology, Digital literacy, Computational thinking, Smart classrooms.

