**Fostering the Integration of Information Technology and Communication: Enhances Professional Development in Teacher Education in the 21st Century Educational Systems**

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**Abstract**

The present study fosters the integration of information technology and communication (ICT) and enhances professional development (PD) in teacher education (TE) in 21st-century educational systems. In today's world, technology and education are linked. Both technology and education are dependent on TE simultaneously. The world is evolving quickly, and as time goes on, new fields of knowledge are being introduced. The new curriculum will incorporate the most recent advancements in TE disciplines. The recent rise in the use of technology in education has created a solid foundation for enjoyable teaching and learning. But there is still a significant difference between what the curriculum requires and how it is fully adopted. To advance students' understanding, today's teacher educators must enhance their capacity to engage with trainees effectively. The trainees will gradually establish the routine of learning the actual academic content. ICT is increasingly playing a significant role in the educational process. Just as curriculums must change to meet ICT demands, TE programs must adjust to the initiatives taken forth by ICT. Future teachers should be given a strong foundation in pre-service and in-service training to use ICT to enhance the teaching and learning experiences. Continuous PD is necessary to integrate ICTs into teaching and learning effectively. The TE curriculum must be updated to include these new skills and information as school curricula change. Even though many teachers lack the necessary training, they must learn how to use digital technology to teach kids. In this circumstance, the goal of teacher preparation can be either TE in ICTs or TE using ICTs. The core of the more extensive pedagogical transitional phase is the PD of teachers in 21st-century educational systems. When TE and institutes consider integrating technology into TE, they must know the skills and expertise teachers need to correctly use ICT in their instruction. Improving pre-service ICT education for PD is essential since ICT plays a more significant role in secondary school educational reforms and innovations. The use of ICT integration with trainees and teacher educators at the pre-service level is the primary focus of this study. For the benefit and upkeep of technology, teachers require technical support. This study looks at TE standards, TE studies, and the utilization of ICT in TE in 21st-century educational systems.

**Keywords:** Teacher Education, ICT, Enhancement, Professional Development, 21st Century, and Educational Systems.