



## ROLE OF TECHNOLOGY IN TEACHER EDUCATION

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After COVID-19, technology played a vital role in the teaching-learning process. In the field of teacher education, all have started to adopt technology in a positive way, which helps the students to enhance their skills in a broader way. When technology progresses, it makes our lives even more convenient, and it can be used to create interactive and engaged learning experiences. This can be done using simulation, virtual reality, augmented reality, games, apps, and software. This can help the student-teachers learn more effectively, whereas 3D printers can be used to generate and build the learning materials easily. Teacher education programs must be generated and constructed, continuously by updating their curriculums to reflect current tech trends. The authors try to throw light on the latest technology, its implications, and the challenges encountered by teachers and learners in the teaching and learning process.

**Keywords:** *Technology, Teacher Education, Challenges, Implications, Virtual Reality.*



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### 1. INTRODUCTION

Technology is defined as the combination of an application of knowledge for achieving real-time goals in a reproducible way. The technology can be a combination of both tangible and intangible tools. It enables us to design new formats of teaching and learning that in some cases. The virtual learning environment evaluates the teaching-learning process and also serves as the best one. One of the best parts is ever-evolving by facilitating more advanced features. It has enhanced our lifestyle to the next level.

Educational technology can foster collaboration. Not only teachers but also students can engage during lessons, but students can also communicate with their peers. Through online activities, students get to work together to solve problems. Today's digital age demands educators who are not only content experts in their respective domains but also adept at integrating technology seamlessly into the curriculum. Education, like many other Teacher education programs, which serve as the foundational bedrock for aspiring teachers, have therefore been faced with the crucial task of embedding technology in their curriculums.

## 2. IMPLICATIONS FOR TEACHER EDUCATION

The integration of technology into teacher education is not merely about teaching prospective educators how to use the latest gadgets or applications. It involves a holistic approach where teachers:

- Understand the pedagogical implications of technology.
- Are aware of the ethical considerations, especially in terms of data privacy and digital citizenship.
- Can critically evaluate technological tools for their effectiveness and relevance to learning outcomes.

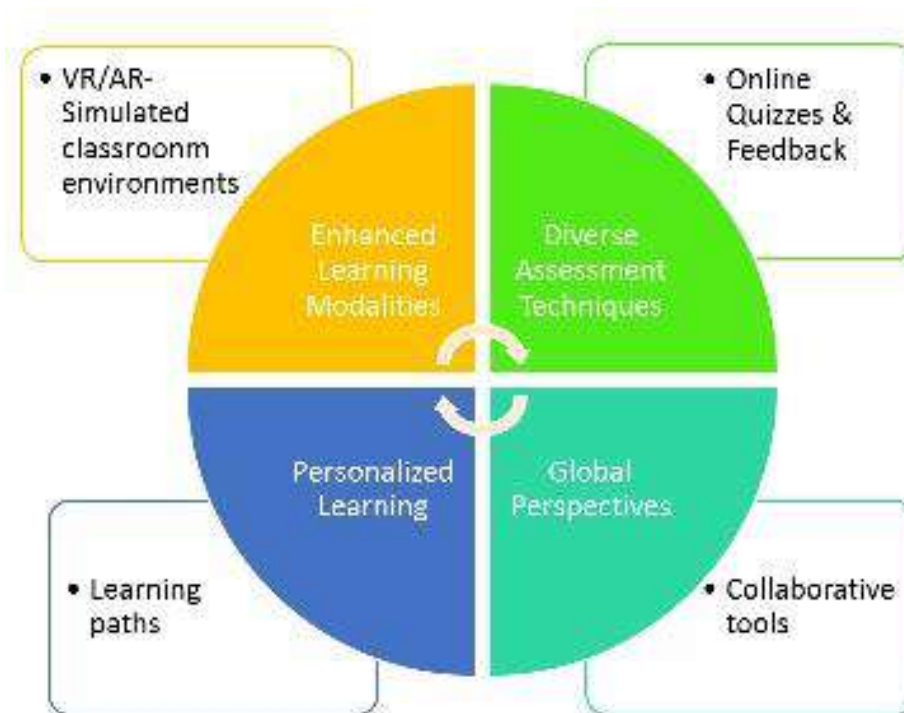
## 3. USES OF TECHNOLOGY IN TEACHER EDUCATION

Teachers play a major role in preparing present children to face the future digital world. The education system in the digital world is largely managed by electronic and digital technology in the knowledge-driven society and teaching-learning is fast becoming digitalized. The table below presents the uses, resources and outcome of Technology in Teacher Education.

**Table-1: Uses of Technology in Teacher Education**

S.No.	Uses	Resources	Outcomes
1	Digital Literacy and Competency	Word processors & LMS	To Understand the pedagogical implications of technology tools
2	Virtual Learning Environment	Moodle, Blackboard, & Google Classroom	To facilitate online assignments, discussions, and collaborations
3	Simulations and Virtual Reality	Non-immersive, semi-immersive, and fully-immersive simulations	To practice classroom management, lesson delivery, and student engagement in a controlled virtual environment
4	Teaching Digital Citizenship	Infographics	To understand the digital footprint, online safety. and cyber bullying
5	Adaptive Learning Tools	Softwares	To meet the unique needs of individual students, ensuring personalized learning experiences
6	Collaborative Tools:	Google Docs, Microsoft Teams, or Zoom,	To facilitate collaboration and enhance group projects, peer feedback
7	Assistive Technology	Angel Sense watch, Glass Ouse hands free mouse, Speech to Text Software, etc.,	To Emphasis inclusive education & that support students with disabilities Used in screen readers, voice recognition software, or tactile technology
8	Digital Assessment Tools	Online quizzes	To help teacher to assess student performance in varied, efficient, and often more engaging ways.
9	Multimedia and Content Creation:	Free Softwares and Apps	To create video software, podcasting tools, or interactive slideshow platforms
10	Professional Development and PLNs	Online communities, webinars, and courses	To Build a Personal Learning Network (PLN) and continuous professional development
11	Research and Resource Gathering	Websites, e-books, online journals, and educational apps	Teachers are trained in a finding, vetting, and integrating digital resources into their lessons

12	Feedback and Reflection	Digital journals, blogs, and video recording	To reflect on their practice, receive feedback, and demonstrate growth over time
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**Fig-1: Benefits of Technology in Teacher Education**

#### 4. CHALLENGES OF TECHNOLOGY IN TEACHER EDUCATION

There are a few challenges of technology in Teacher Education. They are overemphasis on tools, equity, and access and a constantly evolving landscape.

(i) **Overemphasis on Tools:** Nowadays we are focusing on too much of There is a danger to focusing on technological tools themselves rather than the pedagogical principles behind them. Technology must serve as a tool to enhance the teaching-learning process, not to replace the fundamental teaching principles.

(ii) **Equity and Access:** We are humans with different minds not all teacher education programs have the same resources so this led to creating a great digital divide where some prospective teachers get trained while others lag.

(iii) **Constantly Evolving Landscape:** The dynamic nature of technology means

that what's applicable today might be obsolete tomorrow. Teacher education programs must be swift, continuously updating their curriculums to reflect current tech trends.

#### 5. OVERCOMING CHALLENGES IN USE OF TECHNOLOGY IN TEACHER EDUCATION

The challenges in use of technology in Teacher Education can be overcome by:

- Providing effective professional development that should be focused on the specific needs of teachers. It should also be relevant to the curriculum and standards of teachers what they are teaching.
- Supporting to make Teachers feel comfortable by their colleagues administrators and parents if they are going to be successful in integrating technology into their classrooms. The different supports are in the form of mentoring, professional development,

and resource sharing.

- Incorporating practical experiences that help educators build confidence and get comfortable with various tools.
- Building a community that will help to create and share resource repositories, tutorials, blogs, lesson ideas, and discussion forums.
- Encouraging and provide opportunities for teachers to learn about new technological trends in education.
- Ensuring mechanisms are in place for educators to stay updated on new tools, platforms, and methodologies.
- Incorporating training on digital safety, cyberbullying, and ethical considerations. Teachers should be equipped to guide students in safe and ethical digital behaviours.
- Offering Diverse Learning Styles and promotes lifelong learning.

## 6. CONCLUSION

The role of technology in teacher education is undeniable. In the future, it is necessary that teacher education programs can equip the next level generation not only with the content information but also with the different skills and attitudes to use technology effectively. The main goal is not only to develop tech-savvy educators but also to develop holistic educators who can use technology as one of the many tools they use as teaching tools.

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