

SHANTHA GROUP OF INSTITUTIONS

SHANTHA COLLEGE OF PHYSIOTHERAPY



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EMPOWERING MODERN EDUCATORS WITH TECHNICAL SKILLS

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Introduction

In higher education, teacher empowerment is a complicated and multidimensional idea that includes improving autonomy, self-efficacy, professional development, and the capacity to have a positive influence on educational outcomes. The process of empowerment is essential for giving teachers the abilities and information they need to promote creative and successful teaching methods.

The power of empowerment to turn teachers into change agents in their classrooms and propel the creation of more interesting and successful teaching models is what makes it so important. According to Short and Greer, decisionmaking, autonomy, self-efficacy, teacher impact, teacher standing, and professional development opportunities are all crucial aspects of empowerment.

Reflective practice's significance and influence on instructional strategies

A key component of teaching is reflective practice, which is evaluating one's instructional strategies critically to continuously enhance and adjust to the changing educational landscape. Because it enables teachers to reflect on and improve their methods, this practice is essential to teacher education and has a favourable effect on student learning results.

Collaboration's role in resource sharing and professional development

Collaboration is essential to educators' professional development because it makes it easier to share best practices, tools, and expertise. It encourages a culture of ongoing learning and development, which is crucial for adjusting to changing needs in education.

Peer mentorship, which is especially helpful in educational contexts, entails seasoned professionals mentoring less seasoned colleagues.

Teaching with Technology in Ancient Times: A Conceptual Evolution

The basic requirement for technical abilities in education can still be linked to earlier methods of knowledge transmission, even though the modern notion of technology—which includes digital instruments, the internet, and sophisticated software—did not exist in antiquity. To transmit knowledge, researchers and educators in ancient societies used crude technology like papyrus, writing instruments, scrolls, and spoken language. However, technological skills are now essential in modern education due to the world's rapid advancements, and technology's role in influencing learning experiences has changed.

Technology in Teaching in the Twenty-First Century

The Development of Technical Proficiency in Contemporary Education

Technology is now a need for educators in the rapidly evolving world of today. The capacity to incorporate technology into the educational process is essential for preparing students for the opportunities and difficulties of the twenty-first century, as the digital landscape is changing at a rate never seen before. Technology is radically changing how we approach teaching and learning, from data analytics and artificial intelligence to virtual classrooms and interactive learning technologies.

To be effective and relevant in this dynamic context, educators must constantly modify and improve their technological skills. This entails knowing how to use new technology in ways that improve the educational process in addition to comprehending them. Teachers must be prepared to use technology successfully, whether that means employing online platforms for global collaboration, integrating virtual reality (VR) simulations for immersive learning experiences, or utilizing learning management systems (LMS).

Today's Learning Experiences Are Shaped by Technology

Teaching was frequently a one-on-one, in-person activity in the ancient world.

Oral tradition, writing on clay tablets, scrolls, or parchment, and practical apprenticeships were the methods used to transmit knowledge. Although these techniques worked well in their day, their application and reach were constrained.

But in the modern day, technology has expanded the range of educational possibilities. With a single click, we may now connect with thousands, if not millions, of students worldwide. Geographical obstacles have been removed by e-learning platforms, educational apps, and video conferencing tools, opening up possibilities for distance learning. Digital whiteboards and simulation software are examples of interactive technology that improve learning outcomes and student engagement, making education more dynamic and individualized.

The Classroom of the Twenty-First Century

Teachers in the twenty-first century are expected to do more than just impart knowledge; they also need to get pupils ready for a world where being able to use technology will be essential. Teachers may cultivate critical thinking, creativity, and problem-solving abilities—qualities necessary for overcoming the obstacles of the future workforce—by incorporating digital tools and platforms. Furthermore, all students must possess digital literacy, or the capacity to use technology effectively, in order to excel in their academic endeavors as well as in their personal and professional life.

The Development of Educational Resources

To transmit knowledge in the past, educators employed manual methods like oral lectures, tangible objects, and hand-drawn pictures. Teaching was mostly one-way, from teacher to student, and they had few resources at their disposal. But this paradigm has undergone a significant shift since the introduction of technology in the classroom. There is no longer a one-size-fits-all method of teaching. Smartboards, iPads, educational software, and cloud-based learning platforms enable students to interact with the content in more dynamic ways in today's interactive classrooms. Students can collaborate in real time, regardless of where they are physically located, using online tools like Google Docs and Padlet, which fosters a more dynamic and cooperative learning environment.

Technology Acceptance as a Future-Readiness Measure

Teachers of today need to embrace technical abilities to adequately educate their students for the future. Modern educators must use cutting-edge tools, approaches, and technology to mold the next generation of thinkers, innovators, and problem-solvers, just as ancient instructors used the resources at their disposal to convey knowledge. By improving their technical proficiency, teachers not only improve the educational process but also give pupils the tools they need to thrive in a world that is becoming more technologically advanced and complex.

Education Is Ageless, but the Resources Have Changed

The foundation of human civilization has always been education, and over time, the resources and techniques we employ to do so have undergone significant change. The importance of technology in education has evolved from the crude instruments of ancient teachers to the state-of-the-art gadgets utilized in classrooms today.

To change with the times and make sure that pupils are prepared for the challenges of the twenty-first century, educators need to keep improving their technical proficiency. Technology is more than simply a tool; it is an essential component of the contemporary educational process and will continue to influence teaching and learning in the future.

These days, in our rapidly evolving world, technical abilities are crucial for educators. In the ever changing educational environment of today, technology is essential in determining how students learn. To adequately prepare students for the opportunities and difficulties of the twenty-first century, educators must embrace and incorporate technical skills.

The Art of Teaching

In order to interest students and promote deep learning, teaching necessitates a precise balance of multiple factors, which is why it is frequently referred to as an art. **Knowledge** is the first essential element; educators need to be well-versed in the material they are instructing. Understanding how to apply and communicate this knowledge in ways that are pertinent and understandable to students is just as important as knowing facts and ideas.

The **method of explanation** is the second element. The efficacy of the learning process can be significantly impacted by the way a teacher presents the material. Clear, accessible, and interesting explanations are the hallmarks of effective ones. A teacher's capacity to simplify difficult concepts, employ analogies, provide challenging questions, and promote active engagement can have a big impact on how well pupils understand the subject matter.

In the modern classroom, **technology** is an essential tool. To improve learning outcomes, contemporary educators must include technology into their lesson plans. Lessons can become more dynamic, individualized, and captivating with the use of tools like interactive materials, instructional apps, digital platforms, and virtual simulations. Additionally, technology helps teachers access a greater variety of students' learning styles and skills, which helps close gaps in the classroom.

Attaining **effective outcomes** is the ultimate aim of teaching. This speaks to the teacher's capacity to ensure that students are able to apply what they have learned in addition to imparting knowledge. Students who receive effective instruction see quantifiable gains in their academic performance, critical

thinking abilities, or personal development. To make sure that the teaching process produces significant, long-term results, educators must constantly evaluate their influence, modify their approaches, and consider how their pupils are developing.

Deep topic knowledge, clear communication, integrating technology, and an emphasis on student outcomes are all components of the art of teaching. An atmosphere where students are empowered to study and achieve is produced when all these components are skillfully combined.



1. The Value of Empowering Teachers in Higher Education

✓ The improvement of teaching skills, decision-making authority, and a proactive attitude toward educational reform are all components of

educator empowerment, which extends beyond professional development. To fulfill the demands of modern education, teachers must be able to modify and incorporate technology into their lesson plans.

The Essential Elements of Empowerment: Decision Making:

- Teachers are frequently expected to make snap decisions on lesson plans, instructional techniques, and evaluation procedures. Technical proficiency and professional autonomy are both necessary for the empowered to make these choices successfully.
- ✓ Teacher Impact and Status: By using creative teaching strategies and utilizing technology to engage and inspire students, empowered instructors can significantly improve their educational experiences.
- ✓ Professional Development Opportunities: Professional development and empowerment are strongly related. To give teachers the skills they need to use contemporary teaching materials, opportunities for ongoing learning—such as workshops, online certificates, and peer mentoring are essential.

2. Technology's Role in Education

✓ Technology is essential to modern education because it allows for the creation of dynamic learning environments that may change to meet the demands of a wide range of students. The use of technology that offers realistic, interactive, and immersive simulations enhances the educational process, especially in the medical domain.

Technology's Function in Medical Education Is Essential:

 Realistic Learning: It is challenging to fully teach medical education using traditional techniques alone because it encompasses complicated subjects like anatomy, physiology, and clinical procedures. Students can see and practice in realistic settings thanks to technology, such as applications, 3D models, and virtual simulations.

- Personalized Learning: Depending on the needs of each learner, online platforms and learning management systems (LMS) can provide advanced lessons or remedial materials to customize instructional content.
- ✓ Engagement: Students are more actively and interactively engaged in gamification and simulation-based learning settings, which helps them comprehend and remember difficult ideas.

3. The Changing Nature of Education

 The widespread deployment of instructional technology is still hampered by the digital divide. Even though most schools have internet connection, not all teachers are comfortable using digital tools in the classroom.
 Disparities exist that make it difficult to obtain the resources required to use technology efficiently, particularly in rural or economically underdeveloped areas.

Medical Education with Blended Learning:

- ✓ In medical education, blended learning—which blends traditional inperson instruction with online learning—is becoming more and more popular. This hybrid strategy makes it possible for:
- Flexibility: By using online resources, students can study theoretical ideas at their own speed, freeing up class time for more engaging, practical instruction.
- Engagement: Active learning strategies are incorporated into blended learning, which makes lessons more interesting and improves information recall.

 ✓ Greater Findings: Studies have indicated that compared to traditional lecture-based approaches, blended learning can enhance student performance by 15% to 20%.

FLOW CHART FOR A MEDICAL EDUCATOR'S TECHNICAL PERSPECTIVE



4. Resources and Tools for Technical Support in Medical Education

✓ Free and Inexpensive Software for Teachers:

There are several free or inexpensive resources that can be used in medical education for a number of reasons:

- ✓ Google Workspace for Education consists of Google Docs, Sheets, Forms, and Classroom, which are tools that help students and teachers collaborate, share documents, and get real-time feedback.
- Canva: A design tool that lets teachers make eye-catching infographics, presentation slides, and lesson plans. It is useful for providing complicated medical information in an understandable manner.
- Students can learn the fundamentals of coding using Scratch, a free programming language that is becoming more and more crucial for aspiring medical professionals.
- ✓ Audacity: This free program can assist teachers in producing audio lectures or podcasts so that students who learn best by listening can interact with the subject outside of the classroom.

Medical-Specific Apps and Tools:

- Specialized apps and technologies that can support intricate learning processes including anatomy, clinical skills, and diagnostics are necessary for medical education. Among the best tools are:
- Visible Body: An interactive three-dimensional representation of the human body that lets pupils thoroughly examine anatomical features.
 Students can see physiological processes, learn about medical disorders, and virtually dissect bodily parts.
- ✓ 3D4Medical (Complete Anatomy): This application offers incredibly detailed 3D representations of human anatomy that are able to be marked,

rotated, and dissected. It is frequently used to teach anatomy and pathology in medical colleges.

 Pocket Anatomy: Another useful tool that helps students to study and see detailed 3D anatomical models, thereby boosting their understanding of the human body.

Medical Education with Simulation Technologies

✓ By enabling students to practice in safe, regulated settings, simulation technology has revolutionized medical education. With the help of these resources, students can practice real-world situations, improving their clinical and diagnostic abilities.

Software for Medical Simulation:

- **Touch Surgery:** A virtual surgical training platform that lets students practice surgical techniques like laparoscopic surgery, trauma management, and orthopedic surgery using AI-powered simulations.
 Before practicing on actual patients, this is helpful for refining procedural skills.
- ✓ Body Interact is a medical simulation application that allows students to work with virtual patients. It improves diagnostic abilities by presenting clinical cases and letting students base their conclusions on patient data.
- ✓ Anatomage Table: A digital dissection table that displays a detailed and interactive 3D depiction of the human body. This gives students an experience akin to dissecting a cadaver by enabling them to observe anatomical structures in multiple dimensions and zoom in to examine organs and systems.
- Augmented Reality (AR) and Virtual Reality (VR) in Surgical Education:

Students can practice procedures in a completely realistic setting with

Osso VR, a VR-based surgical training platform. General surgery, neurosurgery, and orthopedics are among the specialties that employ it.

 ✓ Simulab: Offers surgical and anatomical education training simulators with tools for virtual dissection, suturing, and trauma treatment.

Medical Procedure and Diagnosis Simulation:

- ✓ Simulab: An all-inclusive supplier of medical simulators that provide instruction in a range of medical specialties, from fundamental anatomy to intricate surgical techniques.
- ✓ iSimulate: A program that simulates clinical settings and patient monitoring in a realistic manner. It teaches critical care skills, anesthesia, and emergency treatments.

Tools for Medical Imaging and Visualization

 ✓ Unlike static photos and textbooks, medical imaging technologies enable students to examine and interpret complicated medical images.

✓ PACS (Picture Archiving and Communication System):

- The foundation of medical imaging systems utilized in hospitals and medical colleges is PACS (Picture Archiving and Communication System). MRIs, CT scans, and X-rays are among the medical pictures it archives, retrieves, and shows.
- Medical educators use RadiAnt DICOM Viewer, a portable, easy-to-use tool, to teach and visualize radiography. Students can engage with 3D reconstructions of medical images thanks to it.
- ✓ 3D Visualization and Augmented Reality (AR): HoloAnatomy: An AR platform that projects 3D human anatomy models in real space using Microsoft HoloLens. It improves anatomy instruction and spatial

awareness by enabling medical students to investigate and engage with anatomical structures.

Overcoming Obstacles to Teacher Empowerment

- One of the main obstacles to the use of technology in medical education is *Technophobia*. Due to a lack of experience or a fear that technology would replace conventional teaching techniques, some instructors may be reluctant to use new technologies.
- Solution: Workshops for training and ongoing support are crucial. By offering support and direction, peer mentorship can also be very helpful in overcoming these obstacles.
- ✓ Managing Limited Resources: Institutions may occasionally be unable to afford the costly technologies they need. Nevertheless, this obstacle can be addressed with the use of free open-source technologies, government grants, and collaborations with tech firms.

✓ Technology and Conventional Education in Balance:

Traditional ways should be enhanced by technology, not replaced. Teachers need to find a balance such that technology advances learning objectives without diminishing the value of in-person instruction and interpersonal communication.

Investing In Future Medical Education

✓ Educational institutions must make investments in training programs, certificates, and the newest educational technologies to guarantee that medical educators are prepared to use technology efficiently. Medical practitioners can take courses on topics like digital literacy, medical simulations, and instructional design through platforms like Coursera, edX, and Udemy.

Conclusion

Incorporating cutting-edge technology into medical school is essential to prepare the next generation of healthcare workers, not just a luxury. Giving teachers the technical know-how to use these tools efficiently guarantees that pupils get a more dynamic, interesting, and useful education. To improve patient care and advance medical practices, educators can give their students a more engaging and productive learning experience by utilizing interactive tools, medical applications, and simulation technology.

References

- Visible Body: 3D Anatomy Tool for Medical Education. <u>https://www.visiblebody.com</u>
- 2. Osso VR: Virtual Surgical Training Platform. https://www.ossovr.com
- 3. Simulab: Surgical Simulation Tools. <u>https://www.simulab.com</u>
- 4. PACS: Picture Archiving and Communication System. https://www.hindawi.com/journals/cin/2020/7053459/
- 5. HoloAnatomy: Augmented Reality Anatomy Education. https://www.clevelandclinic.org



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