

## Impact of Edutech Initiatives on Educational Institutions

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### Abstract:

The integration of educational technology (EdTech) in academic institutions has transformed the teaching-learning process, affecting student engagement, institutional efficiency, and learning outcomes.

The study explores the benefits, challenges and overall effectiveness of EdTech adoption. This research paper investigates the impact of EdTech initiatives on educational institutions by analyzing primary data collected from students, teachers, and administrators.

Findings suggest that while EdTech enhances learning accessibility and efficiency, institutions face challenges such as digital divide, infrastructure costs, and faculty training requirements.

### Keywords :

EdTech, digital learning, technology in education, institutional impact, primary data analysis.

### Introduction :

Educational Technology : Educational Technology is the development, application and evaluation of systems techniques and aids to improve human learning," (National Council Technology for Educational Technology for the United Kingdom" (NCET, 1967) Educational Technology is the application of the scientific knowledge about learning, and conditions of learning, to improve the effectiveness and efficiency of teaching and training.

The rapid adoption of EdTech solutions, including Learning Management Systems (LMS), online assessments and interactive content, has redefined education while digital transformation has provided institutions with new opportunities, it also presents challenges in implementation and adaptation. This study aims to examine the real-world impact of EdTech initiatives on educational institutions using primary data.

Educational technology, in its widest sense can be understood to be including the development, application and evaluation of systemic knowledge about learning and instruction to teaching and training with the aim of improving their quality and efficiency.

According to Ellington et.al. (2005), this increase in the efficiency due to the use of educational technology in various situations can be manifested in many different ways, which are as follows;

- (a) Increasing the quality of learning or degree of mastery among the learners;
- (b) Decreasing the time taken by learners to attain the desired goals;
- (c) Increasing the efficiency of teachers in terms of numbers of learners taught, without reducing the quality of learning;
- (d) Reducing costs, without affecting the quality; and
- (e) Increasing the independence of learners, and the flexibility of education and training provisions.

### Scope of Educational Technology :

The scope of educational technology encompasses educational objectives, media and other characteristics, criteria of selecting media and resources, management of resources as well as their evaluation.

### Objectives :

1. To evaluate institutional efficiency improvements due to Ed Tech adoption.
2. To identify challenges faced by institutions in integrating EdTech Solutions.
3. To analyse the impact of EdTech on students engagement and learning outcomes.

### Literature Review :

Studies suggest that digital tools enhance personalized learning and improve student participation and streamline administrative processes. Existing research highlights the transformative potential of Ed Tech education.

However, challenges such as Inadequate Infrastructure, Resistance to Change and High Costs remains prevalent. This study seeks to assess the impact of EdTech on the effectiveness and development of educational institutions

### Research Methodology :

The search was conducted using the database available on some trusted websites. This paper is based on some Primary and Secondary data. Primary data was collected through Questionnaire. The method of research is descriptive and analytical that is helpful in understanding the impact of EdTech initiatives educational institutions.

### Data Collection :

Sample Size : 50 respondents [Teachers and students]

Data Collection method : Online Survey through Questionnaire.

### Findings and Discussion :

#### Online Digital Education :

Emergence of digital technologies emerging and the emerging importance of leveraging technology for teaching learning at all the levels from school to higher education, this Policy recommends the following key initiatives :

- (a) Pilot Studies for Online Education : Appropriate agencies, such as the NETF, CIET, NIOS, IGNOU, IITs, NITs etc. will be identified to conduct a series of pilot studies, in parallel, to evaluate the

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benefits of integrating education with online education while mitigating the downsides and also to study related areas, such as student device addiction, most preferred format e-content, etc.

- (b) Digital Infrastructure: There is a need to invest in creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions, to solve for India's scale, diversity, complexity and device penetration.
- (c) Online Teaching Platform and Tools : Appropriate existing e-learning platforms such as SWAYAM, DIKSHA, will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring progress of learners. Tools, such as, two-way video and two way-audio interface for holding online classes are a real necessity as the present pandemic has shown.
- (d) Addressing the Digital Divide: The fact that there still persists a substantial section of the population whose digital access is highly limited, the existing mass media, such as television, radio, and community radio will be extensively used for telecast and broadcasts.
- (e) Virtual Labs : Existing e-learning platforms such as DIKSHA, SWAYAM and SWAYAMPRAKHA will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment-based learning experiences.
- (f) Training and Incentives for Teachers : Teachers will undergo rigorous training in learner- centric pedagogy and on how to become high-quality online content creator themselves using online teaching platforms and tools.
- (g) Online Assessment and Examinations : Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics.
- (h) Blended Models of Learning : While promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized.

### Challenges :

1. Limited Access to Resources : Many schools, especially in rural or underfunded areas, lack the necessary infrastructure like reliable internet, modern devices, or updated software.
2. High Cost of Implementation : Purchasing devices, software licenses, maintenance, and training can be expensive, and not all institutions have the budget for it.
3. Teacher Training and Readiness : Teachers may not have sufficient training or confidence to effectively integrate technology into their teaching methods.
4. Resistance to Change : Both educators and administrators can be resistant to new technologies due to comfort with traditional methods or fear of the unknown.
5. Digital Divide : Students from different socio-economic backgrounds may have unequal access to devices and internet connectivity at home, leading to inequality in learning opportunities.
6. Cybersecurity and Privacy Concerns : Increased use of tech tools can expose schools and students to data breaches, hacking, and misuse of personal information.
7. Quality of Content : Not all digital educational content is accurate, up-to-date, or pedagogically sound, which can mislead learners.
8. Technical Issues and Downtime : Devices and platforms can experience glitches, crashes, or slow performance, disrupting lessons and learning flow.

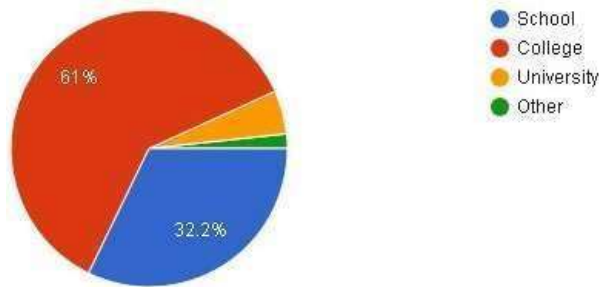
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9. Over-reliance on Technology : Heavy dependence on technology can weaken critical thinking, reduce face-to-face interaction, and sometimes undermine foundational skills like handwriting and mental arithmetic.
10. Assessment Challenges : It can be difficult to assess students' understanding and progress accurately through online platforms compared to traditional methods.

Questionnaire :

- Q1. Type of Institution.
- Q2. How long has your institution been using Edtech Solutions? Q3. What type of Edtech tools does your institution use ?
- Q4. How frequently do students and teachers use Edtech tools?
- Q5. How user-friendly do you find the Edtech tools implemented?
- Q6. How has Edtech impacted student engagement in learning?
- Q7. Have Edtech tools improved student academic Performance?
- Q8. What is the major challenges in implementing Edtech in your institution?
- Q9. How well does your institution provide training for Teachers and Students to use Edtech Tools?
- Q10. Do you believe Edtech will continue to play a crucial role in education in the next five years?
- Q11. What improvement would you like to see in Edtech implementation at your institution?

Q1. Type of Institution.

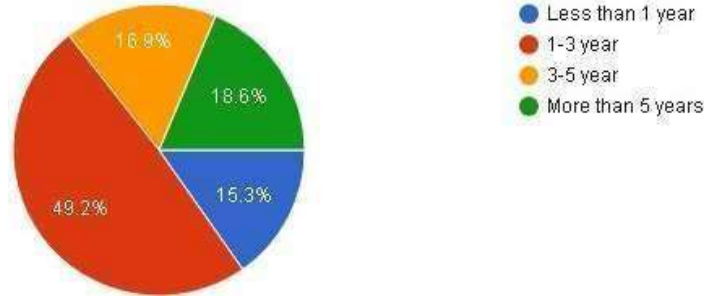


Above diagram shows that :

- 61% Teachers or Students are from College
- 32.2% Teachers or Students are from School
- 5.1% Teachers or Students are from University
- 1.7% Teachers or Students are from Other

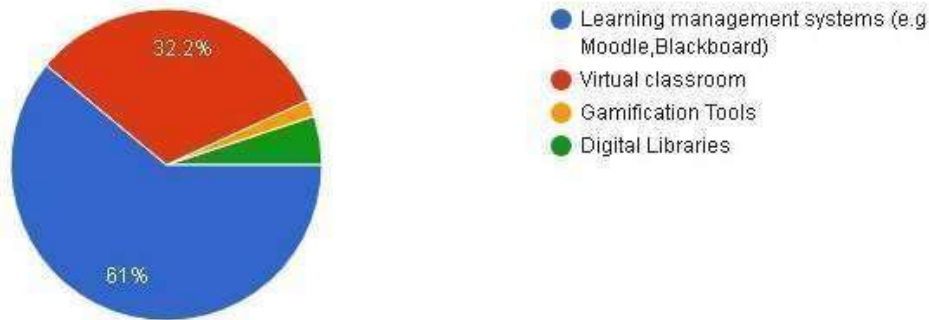
Q2. How long has your institution been using Edtech Solutions?

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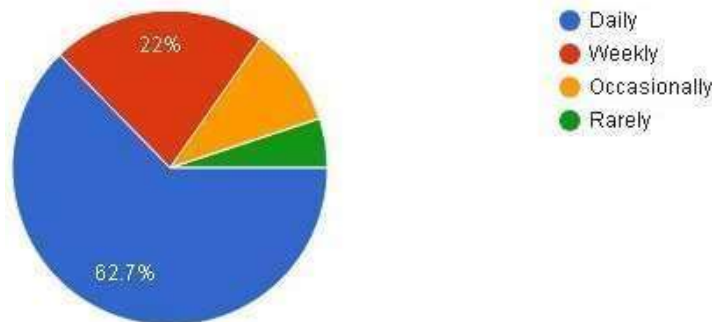
- 15.3% Institution has been using Edtech Solution less than 1 years.
- 18.6% Institution has been using Edtech Solution more than 5 years.
- 16.9% Institution has been using Edtech Solution 3 – 5 years.
- 49.2% Institution has been using Edtech Solution 1 – 3 years.

Q3. What type of Edtech tools does your institution use ?



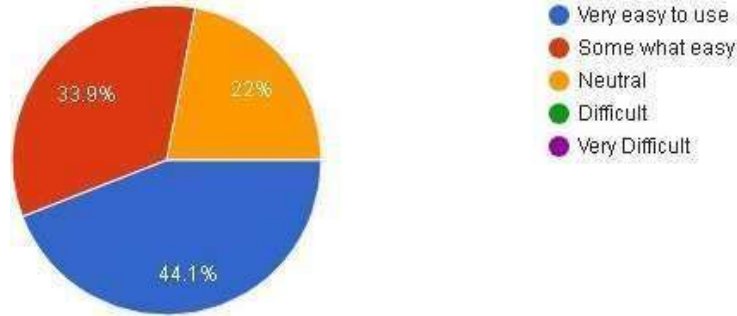
- 5.1% Institution use Digital Libraries.
- 32.2% Institution use Virtual Classroom.
- 61% Institution use Learning Management System.
- 1.7% Institution use Gamification Tools.

Q4. How frequently do students and teachers use Edtech tools?



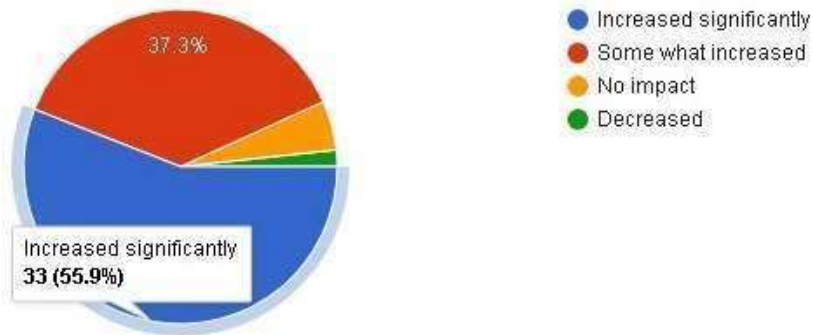
- 62.7% Students and Teacher use Edtech tools daily.
- 22%% Students and Teachers use Edtech tools weekly.
- 10.2% Students and Teachers use occasionally.
- 5.1% Students and Teachers use rarely.

Q5. How user-friendly do you find the Edtech tools implemented?



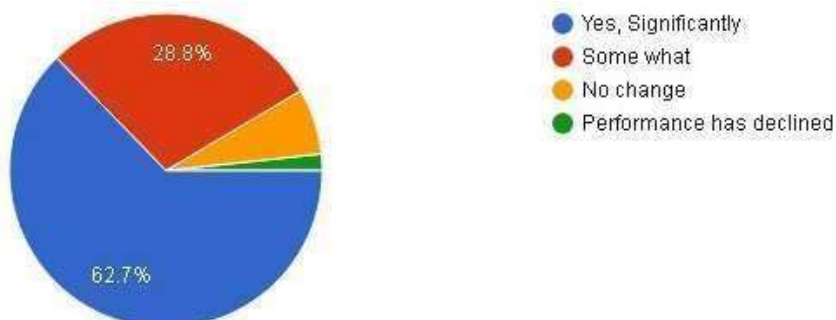
- 44.1% Students and Teacher find the Edtech tools very easy to use.
- 33.9% Students and Teacher find the Edtech tools somewhat easy. || 22% Students and Teacher find the Edtech tools neutral.

Q6. How has Edtech impacted student engagement in learning?



- 55.9% Students and Teachers says- Edtech impact Student engagement in learning increased significantly.
- 37.3% Students and Teachers says- Edtech impact Student engagement in learning somewhat increased.
- 5.1% Students and Teachers says- Edtech impact Student engagement in learning no impact.
- 1.7% Students and Teachers says- Edtech impact Student engagement in learning decreased.

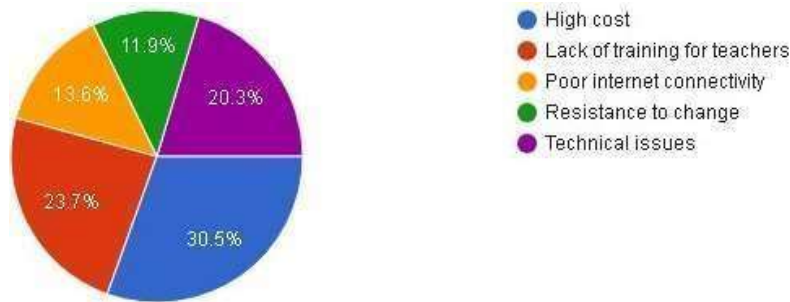
Q7. Have Edtech tools improved student academic Performance?



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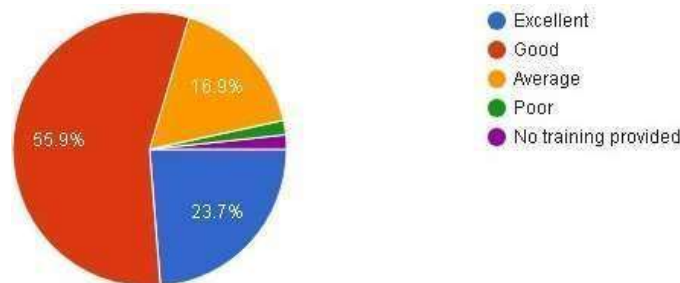
- 62.7% Students and Teachers says- Edtech tools improved student academic performance significantly.
- 28.8% Students and Teachers says- Edtech tools improved student academic performance somewhat.
- 6.8% Students and Teachers says- Edtech tools improved student academic performance no change.
- 1.7% Students and Teachers says- Edtech tools improved student academic performance has declined.

Q8. What is the major challenges in implementing Edtech in your institution?



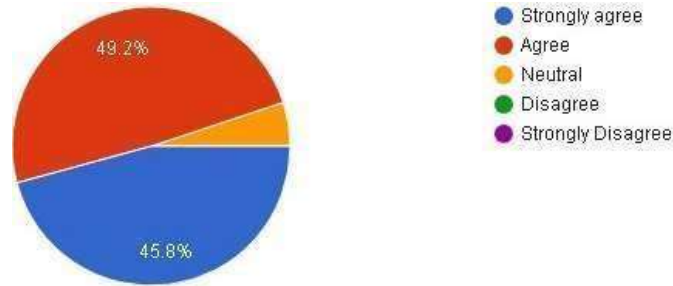
- 13.6% Students and Teachers says- Poor internet connectivity in implementing Edtech in their institution.
- 23.7% Students and Teachers says- Lack of training for teachers in implementing Edtech in their institution.
- 30.5% says High cost in implementing Edtech in their institution.
- 20.3% says Technical issues.
- 11.9% says Resistance to change in implementing Edtech in their institution.

Q9. How well does your institution provide training for Teachers and Students to use Edtech Tools?



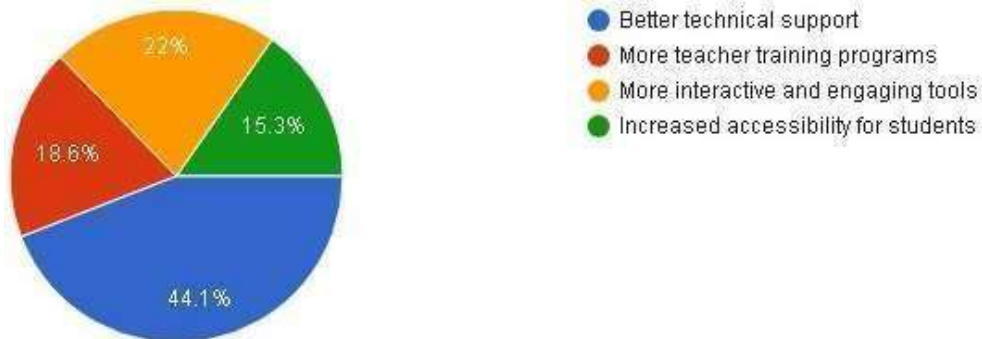
- 55.9% Students and Teachers says- Good training provided by institution.
- 23.7% says Excellent training provided by institution.
- 16.9% says Average.
- 1.7% says no training provided by their institution.
- 1.7% says Poor training provided by their institution.

Q10. Do you believe Edtech will continue to play a crucial role in education in the next five years?



- 49.2% Teachers and Students believe Edtech will continue to play a crucial role in education in the next five years.
- 5.1% were Neutral.
- 45.8% were Strongly agree.

Q11. What improvement would you like to see in Edtech implementation at your institution?



- 22% Teachers and Students says- more interactive and engaging tools in Edtech implementation at their institution.
- 15.3% says increased accessibility for students.
- 18.6% says more teacher training programs.
- 44.1% says better technical support in Edtech implementation at their institution.

**Conclusion :**

EdTech initiatives has significantly improved student engagement, institutional efficiency, and learning outcomes. However, digital inequities, Infrastructure challenges, and teacher training gaps need to be addressed for optimal implementation. The future of educational technology in higher education is not just about the tools we use but how we use them to foster a more inclusive, engaging, and effective learning environment for all students.

Thus, technology has a lot of impact on any kind of teaching-learning activities. Each technology is effective for specific learning tasks and with specific learner groups. Various technologies make teachinglearning tasks easier and more effective.

Although traditional technologies are still popular among the teachers across the world, the advances in information and communication technologies have brought in dramatic changes in the process of organizing learning activities.

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