

The Role of Technology in Enhancing Learning Outcomes in B Schools of India

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Abstract

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This study addresses how technology can improve educational outcomes at business schools (B-Schools) in India. This study identifies several technologies and tools utilized in business schools and their effects on students' learning results. The study also emphasizes the difficulties educators encounter when using technology in their instructional strategies. Data from numerous reports, official policy documents, management curricula, and online resources were gathered purposefully through sampling. Learning management systems are the most often utilized technology in B-Schools in India, with the statistics showing an increase in usage over the previous five years.

Keywords: Technology, Education, Learning Outcomes, Higher Education

Introduction

The use of technology in education has transformed how we learn and improved student learning results. To give students the greatest learning experience possible, technological integration in business schools in India has become more crucial. Through the use of simulations and case studies, technology may give students hands-on experience while also fostering their creativity and critical thinking abilities. It can also make collaboration and communication between students and academic members easier.

Studies show that integrating technology into the classroom can have a major impact on the learning outcomes at business schools. In this regard, Li and Huang (2019), study found that using mobile technology increased students' learning outcomes in business courses. According to Chen and Liu (2019), the inclusion of online discussion forums improved students' learning outcomes and involvement in business courses.

However, there are challenges to be faced when incorporating technology into education. For example, it is necessary to have the right infrastructure, resources, and teaching staff that have undergone excellent training. Additionally, children who use technology excessively may get disconnected and not participate in class.

Background of the Study

The number of students seeking higher education in India has significantly increased, according to reports from the All-India Survey on Higher Education (AISHE). Business schools in India are under pressure to give students the finest learning experience as a result of the increase in demand for high-quality education. By giving students access to a variety of information and resources, increasing their engagement and participation, and improving their overall learning results, technology utilization can assist achieve this goal.

Based on recent studies, integrating technology into the classroom can improve students' critical thinking, creativity, and problem-solving skills (Fang & Xu, 2017). By utilizing simulations and real-world case studies, technology can aid in the development of analytical abilities and hands-on experience in the context of business education (Cox, 2016). Technology can also help students and staff members communicate and work together, which can enhance the learning process overall.

As a result, the purpose of this study piece is to investigate how technology can improve learning results in B Schools in India. The study will look at the many types of technology utilized in B Schools, how they affect students' learning results, and the difficulties teachers experience when incorporating technology into their lesson plans.

Objectives of the Study

The purpose of this study is to learn about different technologies used which are being used in B-School for providing education to the student in this higher education.

The following are the objectives set to get more insight into the given topic:

To identify the different technologies and tools used in B-schools.

To learn about how different technologies and tools are used in B-schools.

Research Questions

The research question of this study are as follows

What are the different technologies which are being used in B-Schools for instruction?

How are these tools being used to provide education to the students?

Review of Literature

Given India's thriving and developing economy, the impact of technology in increasing educational outcomes in business schools is of great relevance. This review of the literature attempts to investigate how technology has been applied to improve learning outcomes in Indian business schools. The effects of e-learning modules, the incorporation of technology in business education, online assessment tools, simulation technology, technology-mediated learning, artificial intelligence, virtual and augmented reality, and gamification in business education will all be covered in this review.

A study was carried out by Aggarwal and Kaur in 2021 to evaluate how e-learning modules affected business students' levels of digital literacy. The study discovered that e-learning modules improved digital literacy, which improved learning outcomes. The results imply that the incorporation of e-learning modules in business education can aid students in acquiring the digital literacy abilities required in the quickly evolving digital environment of today. As a result, e-learning modules can be considered a useful tool for improving learning outcomes in Indian business schools.

Chhabra and Sharma (2021) argue that technology integration can change the traditional teacher-centred approach to a more student-centered approach in business education. The authors stress the significance of using technology to enhance student engagement and learning outcomes in business education. According to the study, business schools may employ technology to give students a more engaging and interactive learning environment, which could improve stu-

dent learning results. Therefore, by giving students a more interesting and tailored learning experience, integrating technology into business education can improve learning results.

Kapoor, Kaur, and Mittal (2020) The use of on-line assessment tools to raise the standard of assessment in business schools investigated the study discovered that because online assessment tools gave students immediate feedback and let them learn from their mistakes, they had a beneficial effect on learning outcomes. According to the authors, business schools can use online evaluation tools to give students a more individualized and interesting learning experience. On-line assessment tools are thus a useful tool for improving learning outcomes in Indian business schools.

Another type of technology that has been utilized to improve learning outcomes in business schools is simulation technology. To determine how simulation technology affects business students' critical thinking and problem-solving abilities, Singh and Verma (2019) carried out a study. The study indicated that simulation technologies improved one's capacity for critical thought and problem-solving. According to the research, business schools can make use of simulation technologies to give students a more lifelike learning environment, which could improve learning results. As a result, simulation technology might be considered a useful tool for improving learning outcomes in Indian business schools.

A useful overview of research on the efficacy of technology-mediated learning was carried out by Zhao et al. in 2019. The study discovered that technology-mediated learning improved student engagement and academic results. According to the authors, business schools may leverage technology-mediated learning to give students a more engaging and customized educational

experience. As a result, technology-mediated learning can be considered a powerful instrument for improving learning outcomes in Indian business schools.

Another type of technology that has the potential to improve educational outcomes at business schools is artificial intelligence (AI). A study by Dasgupta and Singh (2021) found that AI-based learning systems can offer personalized learning experiences that are tailored to the needs of certain students. According to the report, business schools may give students a more tailored and efficient learning environment by implementing AI-based learning tools. As a result, AI might be considered a useful tool for improving learning outcomes in Indian business schools.

Emerging technologies like virtual and augmented reality (VR/AR) have the potential to improve educational results at business schools. According to Krishnan et.al., (2021) research, Blockchain is a new technology that has the potential to improve educational performance at business schools. Blockchain-based solutions can be utilized to increase confidence and openness in student assessment processes, claims a study by Bhattacharya and Chakraborty (2021). According to the report, business schools can leverage blockchain-based technologies to develop an evaluation process that is more reliable and secure, which could result in improved learning results.

The way students learn in business schools around the world has been completely transformed by technology, which has also revolutionized the education sector. The literature review investigated how technology has improved educational results in Indian business schools. According to the research, using technology in business education can change the traditional teacher-centered approach to one that is more student-centered, increase student motivation

and engagement, and give students a more participatory and immersive learning experience. Student engagement and learning outcomes have been demonstrated to benefit from technology-mediated learning. The potential for certain technologies to improve learning outcomes has been highlighted. These technologies include e-learning modules, online assessment tools, simulation technology, artificial intelligence, virtual and augmented reality, gamification, and blockchain-based solutions.

According to the review, business schools in India should keep incorporating technology into their curricula to keep up with the quickly evolving digital environment and give students a more tailored and efficient learning experience. It is crucial to remember that careful preparation and execution are necessary for the efficient integration of technology in business education to guarantee that it is in line with the student's needs and learning goals. To determine the optimal methods for incorporating technology into business education and to evaluate its effects on learning outcomes, further study is required.

The literature study emphasizes the necessity for business schools to accept technology and include it in their curricula overall, emphasizing the role that technology plays in improving learning outcomes in business schools in India.

Methodology

The Research Design of the Study

Research design provides us with the strategy and method which can be used by the researchers to set their objective and then aim for an understanding of the event or problem in the given reality in this project. The researchers have tried to identify various technologies for Enhancing Learning Outcomes in B Schools in India to train future managers. Data collected in this study has covered the components comprising various re-

ports on the use of technologies in Enhancing Learning Outcomes in B Schools.

Sample And Sampling Technique

As the purpose of this study is to identify the various technologies being used in education in various B schools reports and articles have been selected using purposive sampling.

Tool And Process of the Study

The tool used in this research is the checklist of various documents used in the research, and content analysis was the process used.

Procedure For Data Collection

The purpose of this study is to identify the technologies being used in the B school. So, researchers have gone through various documents such as the management curriculum. Government policy papers and various journals and websites to various tools to have a detailed understanding of the topic.

Discussion And Analysis

Table 1 presents data on the use of learning management systems, virtual classrooms, flipped classrooms, online assessments, online assignments, and e-content in B-Schools over a period of five years. The table provides an overview of the increasing use of technology in B-Schools in India and highlights the different technologies that have gained popularity over the years.

According to the data, LMS usage has been rising over time, from 17.9% in 2015–16 to 29.2% in 2019–20. This might be because, in educational institutions, LMS has developed into a crucial tool for managing academic and administrative work. Through a centralized platform, it gives teachers the ability to design and deliver online courses, control student registrations and grades, and interact with students.

Table 1: Use of Various Technologies in Indian B-Schools from 2015-16 to 2019-20.

Technology	2015-16	2016-17	2017-18	2018-19	2019-20
Learning Management System (LMS)	17.9	20.1	24.3	26.6	29.2
Virtual Classroom	2.4	2.4	2.8	3.1	4.4
Flipped Classroom	-	-	-	-	0.6
Online Assessment	2.2	2.7	3.8	4.6	5.9
Online Assignments	3.5	3.6	5.1	6.0	7.6
E-Content	3.3	3.5	4.6	5.8	6.9

Another technology that has grown significantly over time is virtual classrooms, which went from 2.4% in 2015–16 to 4.4% in 2019–20. This is due to the rise in interest in online learning, particularly in the wake of the COVID-19 pandemic. Regardless of their geographic location, virtual classroom technology enables real-time interaction between professors and students.

The usage of technology for flipped classrooms remained minimal until 2019–20 when it suddenly increased to 0.6%. A teaching strategy known as “flipping the classroom” involves having students watch lectures that have already been recorded at home before using class time to debate, collaborate, and apply what they have learned. This technology’s fast rise in popularity can be linked to the fact that it engages pupils and efficiently encourages active learning.

The use of online assessments has also grown steadily over time, from 2.2% in 2015–16 to 5.9% in 2019–20. Online tests are a quick and convenient way to measure students’ learning progress. They can also give students rapid feedback, which can help them recognize their strengths and limitations.

The use of online assignment technologies has also increased steadily over time, rising from 3.5% in 2015–16 to 7.6% in 2019–20. Due to the electronic distribution and collection of assignments made possible by this technology,

administrative work, and paper waste may both be decreased. Additionally, it gives students the flexibility and convenience of submitting their assignments from any location at any time.

Utilization of e-content technology has steadily increased over time, rising from 3.3% in 2015–16 to 6.9% in 2019–20. E-Content is a term used to describe educational content that is delivered electronically, including simulations, films, and textbooks. As it enables students to engage with the subject in various ways and at varying paces, technology can be a useful tool for fostering active learning and enhancing student engagement.

According to the data and the above table, technology utilization in Indian B-Schools has increased significantly over the past five years. The necessity for effective management of academic and administrative tasks, and the need to engage students and encourage active learning are all factors contributing to this increase. Another factor is the rising demand for online education. According to the research, the most extensively utilized technologies in B-Schools are LMS, Virtual Classrooms, Online Assessment, Online Assignments, and E-Content. These technologies are also predicted to continue to gain popularity in the next years.

Platforms Used for Teaching in B-Schools in India

In B-schools throughout India, using online

Table 2: Online Platforms Used for Teaching in B-Schools in India

B-School	Online Platforms Used for Teaching
Indian School of Business, Hyderabad	Coursera, edX, LinkedIn Learning, Udemy, UpGrad
Indian Institute of Management, Ahmedabad	Coursera, edX, SWAYAM, Udemy
Indian Institute of Management, Bangalore	Coursera, edX, SWAYAM
Indian Institute of Management, Calcutta	edX, SWAYAM, TalentSprint
Indian Institute of Management, Lucknow	Coursera, edX, SWAYAM
SP Jain Institute of Management and Research, Mumbai	Coursera, edX, Udemy
XLRI - Xavier School of Management, Jamshedpur	Coursera, edX, SWAYAM, Udemy
Management Development Institute, Gurgaon	Coursera, edX, SWAYAM, Udemy
International Management Institute, New Delhi	Coursera, edX, SWAYAM, Udemy

platforms for instruction has grown in popularity in recent years. Online platforms have given students a practical and adaptable approach to learning and gaining knowledge backed by technological improvements and the ubiquitous availability of high-speed internet. B-schools have started integrating online courses and resources from multiple platforms, like Coursera, edX, SWAYAM, Udemy, and LinkedIn Learning, in addition to traditional classroom training. These online learning environments provide a variety of courses and materials, such as video lectures, exams, and e-books, which can improve and supplement conventional teaching techniques. This table provides an overview of the online platforms used by some of the top B-schools in India.

The online platforms that some of India's top B-Schools use to teach are listed in the table above. The B-Schools listed in the table are the Indian School of Business in Hyderabad, the Indian Institute of Management in Ahmedabad, Bangalore, Calcutta, and Lucknow, the SP Jain Institute of Management and Research in Mumbai, the XLRI - Xavier School of Management in Jamshedpur, the Management Development Institute in Gurgaon, and the International Management Institute in New Delhi.

The data demonstrate that Coursera and edX are the online teaching platforms used by the majority of these B-Schools. This is not unexpected given that these platforms are renowned for the excellent content and courses they provide from prestigious universities across the world. Additionally prominent among these B-Schools are SWAYAM and Udemy.

Interesting to notice is the adoption of Learning on LinkedIn, a platform geared towards professional growth and career success, by various B-Schools. This shows that these B-Schools are concerned with helping their students prepare for the working world in addition to academic instruction.

In general, the usage of online teaching tools in B-Schools has grown in popularity in recent years. As online learning grows more common and accessible, this tendency is probably going to continue. B-Schools may now reach a wider audience and educate those who might not have been able to attend conventional on-campus classes thanks to the utilization of online platforms.

It's crucial to remember that online learning cannot entirely replace the advantages of face-to-face instruction. To guarantee that its students

receive a well-rounded education, B-Schools must carefully balance online and in-person instruction. The online information that B-Schools give must also be of a high caliber and pertinent to the needs of its students.

Future trends indicate that business schools will continue to employ online platforms for instruction. The business schools (B-Schools) featured in the table above are already utilizing the advantages of online learning and employing a variety of platforms to offer their students a top-notch education. Business schools must keep evolving to meet the needs of the evolving educational environment.

Result and Finding

The finding from the study is as follows:

The study's findings are as follows:

Over time, the use of learning management systems (LMS) has increased, from 17.9% in 2015–16 to 29.2% in 2019–20.

The percentage of students using virtual classrooms has increased dramatically over time, rising from 2.4% in 2015–16 to 4.4% in 2019–20.

Up until 2019–20, there was just a small amount of technology used for flipped classrooms; nevertheless, that percentage unexpectedly rose to 0.6%.

Additionally, the use of online tests has increased over time, from 2.2% in 2015–16 to 5.9% in 2019–20.

Online assignment technology usage has also grown steadily over time, going from 3.5% in 2015–16 to 7.6% in 2019–20.

The use of e-content technology has risen over time, from 3.3% in 2015–16 to 6.9% in 2019–20, a steady rise.

In B-Schools, LMS, virtual classrooms, online assessments, online assignments, and e-content are the technologies that are most frequently used.

In addition to conventional classroom instruction, business schools are also incorporating online courses and resources from a variety of sources, including Coursera, edX, SWAYAM, Udemy, and LinkedIn Learning.

Conclusion

As the research is focused on examining the role of technology in enhancing learning outcomes in B Schools in India. The study attempts to identify the various tools and technologies utilized in B-Schools and how these tools are used to educate students. The study's research questions were: (1) What various technologies are used in business schools for educational purposes? and (2) how are these resources being applied to teach the students? Purposive sampling and content analysis are two methods of data collecting that were employed in the study. The information gathered is displayed in Table 1, which emphasizes the growth of technology use in Indian B-Schools from 2015–16 to 2019–20. According to the study, incorporating technology into business schools can improve students' capacity for critical thought, creativity, and problem-solving as well as promote interaction and cooperation between students and professors. The study also emphasizes the difficulties educators face in integrating technology into their teaching practices, including the need for adequate infrastructure, resources, and training for instructors, as well as the danger that excessive use of technology will result in a lack of student engagement and participation. Thus it is important to have a proper understanding of how technologies be used to provide better learning experiences in higher education.

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