

# 21<sup>st</sup> Century Approach To Technology Driven Education- AN Empirical Study

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**Abstract:** *The World Is Moving With A High Acceleration Due To The Technological Sector's development, which also powered the internet. Today, the internet is igniting each sector globally, and education is one of them. Edutech collaborates education and technology going hand-in-hand, bringing the era of modern and remote learning. Education is the base of any nation, the more literate a nation is, the faster path that nation takes in development. Improvement and investment in the human resources of a nation can offer them the highest return. The 21<sup>st</sup>-century approach of education aims to drive education by integrating technology in it. With the help of this paper, we try to inspect and observe how technology is driving up the educational sector named Edutech and how different education institutes integrate these technologies for better development and making of students. A sample of 201 people was surveyed through a structured questionnaire to know the different roles and significance of technology in the educational sector of the 21<sup>st</sup> century. Mean, and t-test was applied to analyze the data and get the results. It is also found that technology is playing a significant role in driving the education sector of the 21<sup>st</sup> century.*

**Keywords:** *Education, Edutech, Technology, 21<sup>st</sup> Century Approach, Development*

## 1. INTRODUCTION

Educators used to utilize blackboards to discuss a topic. On the other side, students had difficulty finding more information or materials on the subject. Instructors and school books were regarded as the primary sources of information. Even lecturers used to cleave to the substance of textbooks that were seldom altered and had several mistakes. There is a slew of other issues to consider (Weidner, 1999). The current educational environment has not altered significantly since the 1990s. We still use blackboards, and we still use the material of textbooks that are too old to require updating. Teachers used to resort to the same school textbooks, which are the only contribution to the knowledge supplied to most children and educators. So we can see that practically nothing has evolved since then (Henriksen et al., 2016).

With the introduction of the internet, the world has shifted to new modes and methods in each sector. Change in time and technology brought changes in every dimension of society, from agriculture to production and from administration to education; each field now employs technology in a way one could have never imagined. Education has traveled a long way from traditional methods to futuristic ones, and the net sits at the core of this transformation

(Sarkar, 2012). The internet-connected the world in a way one could have never imagined, thus connecting the world's educational resources to one net. Education thus has been able to overcome the barrier of the traditional classroom, and its accessibility thus has increased. There has been a need for change in both teachers and students, and they equip and familiarize themselves with the technologies (Castronova, 2002).

As a source to impart knowledge and student as a receiver of knowledge and information, the teacher needs to learn and develop themselves along the line with development to technology. Educational institutions, including primary to secondary schools, colleges, universities, research, and think tanks, are integrating technology as a primary medium of imparting knowledge. Computer and now, more specifically, the software has been made in different subject niches to take education to the next level by increasing productivity of the individual with the help of technological advances (Duderstadt, 2002).

### **Literature Review**

The world of education has now moved from classroom learning to digital learning. Education has become one of the most thriving sectors of the world, with billion-dollar turnovers. Research and development are done to improve the quality of education and its distribution to the students. Remote learning has been normalized today as most of the world is now working from remote locations, including educational institutes. Digital learning software is the next big thing observed throughout the world. Multi-million dollar companies have been found working in this sector termed the Edutech, a combination of education and technology to distribute knowledge and make it accessible worldwide (Alias & Luaran, 2016).

Companies like Byju's, Unacademy, and many others, are working towards providing education other than school education and are helping students prepare for different types of examinations and competitions throughout the world. Udemy, Skill-share are examples of providers that focus on non-core educational activities, and thus its users acquire skills or learn to master their hobby through it. The hallmark of 21<sup>st</sup>-century education is that today one can learn anything from anyone sitting anywhere in the world provided they have access to internet services. Many charitable companies such as Khan academy have been working in this field for a very long time, providing students in all parts of the world free of any cost (Dumont & Istance, 2010).

Fundamental value teaching is one of the new aspects of the modern education system. Introduction of technology blooms students to learn different aspects of life in a new way as the society is now dominated by technology; the focus is also given to teaching students proper knowledge to survive in this world of technology and how to make technology work for them (Conger, & Xin, 2000).

Technology also provides opportunities to cater to the students' particular needs individually with personalized learning. It also makes it easier for the students to learn by making interactive and engaging content. More profoundly, it provides room for teaching differently-abled students with helpful hardware and software. By conditioning students with the help of technology, the 21<sup>st</sup> century tries to aim for the students' multi-dimensional development and helps them make global citizens (Chu et al., 2021).

Today's generation cannot shy away from the responsibility of choosing what teachers and students acquire for 21st-century learning. There is a constant need for unique knowledge and skills so that students can succeed in the coming age of the 21st century and thus aim to become lifelong learners. More and more new ideas and thoughts will challenge the current educational assumptions. Thus, educational institutions have to change significantly to reach today's students' ever-changing new and emerging needs. Today many systems are incompatible with the lives of the children, and sometimes programs appear to be irrelevant and provide zero prospects (Kivunja, 2015).

Innovations are born under skills that come from a constant daily habit, creativity, critical thinking, and problem-solving, thus meeting the digital economy's requirements. In many countries, existing education systems have become redundant, thus continuously widening the gap between rich and poor and eventually harming the ethnic and ethnic divide (Kay, & Greenhill, 2011).

Educational achievements in the 21st century are generally accepted, focusing on less disciplinary knowledge content and more on the developing and appreciative disposition people can respond to the situations for which they may not be specially prepared. However, many at times good intentions and emphasis on knowledge for a long term that enables and work on performance test and remaining part of the measures essential for the success in school life (Bates, 2005).

One emerging demand from the parents is to prepare their children for the global economy. Today the world is shrinking and dynamically changing striving with hard work will not cut in a mess. There is a need to teach students the way of intelligent work rather than hard work. There is a need to develop students as lifelong learners in this rapid world. A life-long learner takes on life as a learning activity and tries to improve himself throughout his life journey. In order to survive in the 21<sup>st</sup> century, constant up-gradation is required, and with the help of technology, educators are aiming for this only (Kereluik et al., 2020).

The learning experience changes drastically when the students have access to up-to-date, relevant knowledge that they may share with their classmates and instructors, thus producing better ideas and results. Teachers, who formerly served as subject matter experts and content providers, will now delegate more on the learning process and accountability of the students. Students who used to be in charge of figuring out how to collaborate in a Web-based environment and where to get information can also focus on absorbing the learnings provided by the teachers (Broadfoot, 2000).

This type of experience enables a person to be a lifelong learner, essential for success in today's profession/job. It provides them with a better outlook compared to the traditional and the naïve one. As a result, the entire learning paradigm shifts for the better. Furthermore, technology allows pupils to express themselves in ways they have never been able to before. They can now share their opinions and feedback with the teachers and help teachers identify the area to work on. Students are not confined to a sheet of paper, pencil, or pen; instead, they have access to a unique online environment where they may communicate what knowledge they have gathered, absorb it, and then incorporate it into their projects (Lytras et al., 2018).

It is widely assumed that quality of education and performance in the twenty-first century would rely less on disciplinary subject understanding and more on the cultivation of appreciating temperaments that allow individuals to interpret and respond for which they may not be adequately prepared (Unwin,2007).

However, they are frequently bound by old principles, and the long-standing emphasis on knowledge recall and academic achievement remains the primary measure of educational achievement. So much has recently been learned on how to extend the ability to study outside the school gates. They help to strengthen what this entails is clearer today with modern education. (Cojocariu & Mareş, 2022).

Technology students should collaborate in several ways, connecting with the larger community and frequently including service-learning as an extra component. Students practice higher-order thinking abilities, various literacy, technology and multimedia, and realistic evaluations. Technology's multidisciplinary nature perfectly integrates varied information and understanding in meaningful and productive content and interaction. Internships today are standard practice in the educational world to familiarize students with the work culture outside and provide them with real-life experiences, thus helping them become better global citizens of the modern world. Corporate companies and different government agencies are working towards this path to bring high-achieving students to their companies by providing them with different opportunities (Rhodes, 1995).

The commitment of the teachers and professors is the biggest requirement to successful online learning. Despite the fact that online classes make it easier for students to absorb formal teachings, the teacher is still required. Communities of Inquiry envision knowledge development as a result of timely interaction between teachers and students. (Pallathadka, 2020)

### **Objective Of The Study**

1. To find the role of technology in driving education in the 21<sup>st</sup> century.
2. To find the significance of technology in the educational sector of the 21<sup>st</sup> century.

## **2. RESEARCH METHODOLOGY**

A sample of 201 people was surveyed through a structured questionnaire to know the different roles and significance of technology in the educational sector of the 21<sup>st</sup> century. The study is empirical, and the primary data was collected through a random sampling method. Statistical tools like Mean and t-test were applied to analyze the data and get the results.

### **Findings Of The Study**

Table 1 shows the general profile of the respondents, where a total of 201 respondents were considered for the survey, of which 51.2% were male and 48.8% were female. Among them, 24.4% were from the age group 18-27 yrs, 26.4% from 27-38 yrs, 23.4% belonged to the age group 38-45 yrs, and the rest, 25.9%, were above 45 years of age. 48.3% of the total respondents were students, and the rest 51.75 were academicians providing education to the student with the help of technology.

Table 1 General profile of the respondents

Variable	No. of respondents	Total %age
<b>Gender</b>		
Male	103	51.2
Female	98	48.8
<b>Total</b>	<b>201</b>	<b>100</b>
<b>Age</b>		
18-27 yrs	49	24.4
27-38 yrs	53	26.4
38-45 yrs	47	23.4
Above 45 yrs	52	25.9
<b>Total</b>	<b>201</b>	<b>100</b>
<b>Occupation</b>		
Students	97	48.3
Academicians	104	51.7
<b>Total</b>	<b>201</b>	<b>100</b>

Table 2 Role of technology in the education sector

Sl. No.	Role of technology in the education sector	Mean score	t value	Sig
1.	Technology is helping the education sector to overcome the barrier of the traditional classrooms	3.79	12.17	0.00
2.	Technology has increased the accessibility to education for all	3.91	11.63	0.00
3.	Technology has normalized the remote learning	3.17	2.45	0.01
4.	One can learn anything from anyone sitting anywhere in the world due to technology	3.21	2.89	0.00
5.	Technology is helping students to bloom and learn different aspects of life in a technology-dominated society	3.74	9.20	0.00
6.	Technology is providing opportunities to cater to the particular needs of the students through personalized learning	3.13	2.00	0.02
7.	Technology is helping students to learn by making interactive and engaging content	3.56	7.15	0.00
8.	Technology is providing room for teaching special children with helpful hardware and software	3.40	5.77	0.00
9.	Students have access to up-to-date and relevant knowledge due to technology	3.66	9.07	0.00
10.	Technology is helping an individual to a lifelong learner	3.37	4.60	0.00

Table 2 demonstrates the different roles of technology in the education sector of the 21<sup>st</sup> century. The table indicates that technology has enhanced universal access to education by a mean score of 3.91 and that technology is assisting the education sector in overcoming the barrier of conventional classrooms by a mean score of 3.79. Technology is helping students bloom and learn different aspects of life in a technology-dominated society with a mean score of 3.74. Students have access to up-to-date and relevant knowledge due to technology, with a mean score of 3.66. Technology is helping students learn by making interactive and engaging content with a mean score of 3.56. Technology provides room for teaching special children with helpful hardware and software with a mean score of 3.40. The respondent says that

technology is helping an individual to be a lifelong learner with a mean score of 3.37. One can learn anything from anyone sitting anywhere in the world due to technology, with a mean score of 3.21. They also believe that technology has normalized remote learning with a mean score of 3.17. Technology provides opportunities to cater to the students' particular needs through personalized learning with a mean score of 3.13. Additionally, the t-test was used to determine the significance of the assertions, and it was determined that the value in the significance column for all statements is less than 0.05.

### 3. CONCLUSION

There is still an emerging need for a direct connection between teachers and students. Unlike in the past, both instructors and students now must study and share information in the current world of education. There is a high need for interactive educational content to engage students in learning via the online mode of education. The transition from traditional to modern education might seem uncomfortable initially, but it will be worthwhile. 21<sup>st</sup>-century technology also brought a significant change in the methods of Evaluation; rather than test scores, attendance, attention, and participation became the measures to evaluate. Students today produce better thoughtful work as their horizons have widened with a new outlook. 21<sup>st</sup>-century education emphasizes the term life-long learner because of the constantly changing world due to technology. With changes, students need to become life-long learners to survive by constantly updating themselves and acquiring the latest skills. To achieve this goal, educators need to adapt and integrate technology as their medium of education (Baumöl & Bockshecker, 2017).

The research indicates that technology plays a variety of functions, including increasing universal access to education. Technology is helping the education sector overcome the barrier of traditional classrooms, helping students bloom and learn different aspects of life in a technology-dominated society; students have access to up-to-date and relevant knowledge due to technology. It is driving the education sector. It is also found that technology is playing a significant role in transforming the education sector of the 21<sup>st</sup> century.

### 4. REFERENCES

- [1] Henriksen, D., Mishra, P., & Fisser, P. (2016). Infusing creativity and technology in 21st-century education: A systemic view for change. *Journal of Educational Technology & Society*, 19(3), 27-37.
- [2] Castronova, J. A. (2002). Discovery learning for the 21st century: What is it and how does it compare to traditional learning ineffectiveness in the 21st century. *Action research exchange*, 1(1), 1-12.
- [3] Duderstadt, J. J. (2002). The Future of Higher Education in the Knowledge-Driven, Global Economy of the 21st Century (1.2).
- [4] Alias, N. A., & Luanan, J. E. (Eds.). (2016). *Student-driven learning strategies for the 21st-century classroom*. IGI Global.
- [5] Sarkar, S. (2012). The role of information and communication technology (ICT) in higher education for the 21st century. *Science*, 1(1), 30-41.
- [6] Dumont, H., & Istance, D. (2010). Analysing and designing learning environments for the 21st century. *The nature of learning: Using research to inspire practice*, 19-34.

- [7] Conger, J. A., & Xin, K. (2000). Executive education in the 21st century. *Journal of Management Education*, 24(1), 73-101.
- [8] Chu, S. K. W., Reynolds, R. B., Tavares, N. J., Notari, M., & Lee, C. W. Y. (2021). *21st-century skills development through inquiry-based learning from theory to practice*. Springer International Publishing.
- [9] Kivunja, C. (2015). Innovative methodologies for 21st-century learning, teaching, and assessment: A convenience sampling investigation into the use of social media technologies in higher education. *International Journal of Higher Education*, 4(2), 1-26.
- [10] Kay, K., & Greenhill, V. (2011). Twenty-first-century students need 21st-century skills. In *Bringing schools into the 21st century* (pp. 41-65). Springer, Dordrecht.
- [11] Kereluik, K., Mishra, P., Fahnoe, C., & Terry, L. (2013). What knowledge is of most worth: Teacher knowledge for 21st-century learning. *Journal of digital learning in teacher education*, 29(4), 127-140.
- [12] Dolezal, D. (2020, October). The Learning Office Approach to Modern 21st Century Education: Third Evaluation of a Self-Driven Concept for Student-Centered Engineering Education. In *2020 IEEE Frontiers in Education Conference (FIE)* (pp. 1-9). IEEE.
- [13] Broadfoot, P. (2000). Comparative education for the 21st century: retrospect and prospect. *Comparative Education*, 36(3), 357-371.
- [14] Lytras, M. D., Papadopoulou, P., Marouli, C., & Misseyanni, A. (2018). Higher education out-of-the-box: Technology-driven learning innovation in higher education. In *Engaged scholarship and civic responsibility in higher education* (pp. 67-100). IGI Global.
- [15] Cojocariu, V. M., & Mareş, G. (2022). Academic Integrity in the Technology-Driven Education Era. In *Ethical Use of Information Technology in Higher Education* (pp. 1-16). Springer, Singapore.
- [16] Rhodes, L. A. (1995). Technology-Driven Systemic Change. *Learning & Leading with Technology*, 23(3), 35-37.
- [17] Bates, A. T. (2005). *Technology, e-learning, and distance education*. Routledge.
- [18] Weidner, K. D. (1999). Technology-Driven Decisions. *School Administrator*, 56(4), 26-28.
- [19] Unwin, A. (2007). Technological pedagogical content knowledge (TPCK), a conceptual framework for an increasingly technology-driven higher education. *Bulgarian Journal of Science and Education Policy (BJSEP)*, 1(1), 231-247.
- [20] Baumöl, U., & Bockshecker, A. (2017, July). Evolutionary change of higher education driven by digitalization. In *2017 16th International Conference on Information Technology Based Higher Education and Training (ITHET)* (pp. 1-5). IEEE.
- [21] Pallathadka, H. (2020). A Survey Of Undergraduate Students On Online Learning During Covid-19 Pandemic In The Indian State Of Manipur. *European Journal of Molecular & Cilinical Medicine*, 07(08), 5914–5927.
- [22] Pallathadka, H. (2020). Use Of Technology In English Literature Teaching. *European Journal of Molecular & Cilinical Medicine*, 07(11), 9006–9016.
- [23] Pallathadka, H., Sonia, B., Sanchez, D. T., Vera, J. V. de, Godinez, J. A. T., & Pepito, M. T. (2021). Investigating the impact of artificial intelligence in education sector by predicting student performance. *Materials Today: Proceedings*, xxx.