NEED AND ROLE OF TECHNOLOGY IN EDUCATIONAL INSTITUTIONS

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ABSTRACT

Rapid changes were observed in all spheres of the life and education is no exception to this. Education system had drastically changes over the period of time where one way delivery of the content to interactive delivery through audio-video, simulation techniques, enabling the learners to have better understanding of the concepts which will have a lasting impression on the learners. Learning through books had moved to learning from the peers and others located at various locations so that effective knowledge sharing takes place between the learners. With the implementation of technology in the education sectors through continuous efforts had ensured that learning process is joyful, easier to understand and also easy to access the content. The paper discussed the advantages and disadvantages of using technology in the education system. The paper also discussed about the steps required for transforming the education system so that the learners become digital literate and is aware of the changes happening in the system and making them ready as per the industry requirements.

KEYWORDS: *Technology, ICT, Education, Social Networking, Modern Technology, Teaching, Online Courses.*

INTRODUCTION

There are rapid changes which had taken place in the various sectors of the society over the period time. These changes are visible and poised significant marks on the lives of the people. All these are possible with the implementation of new techniques in the routines. These advanced techniques are able to be implemented successfully only with the usage and implementation of the technology. The way the mankind had transformed itself over the years is only through the usage of the Information and Communications Technology popularly known as ICT techniques. The same can be observed in the transformation of computers which used to occupy large volumes to space to the present handheld device. Similarly how the communication used to happen earlier and now how it is being communicated using the mobiles and other smaller devices.

Similar changes were also observed in the way the education is imparted to the students in the educational institutions. In the earlier days teachers and few textbooks were the sources of knowledge, information for the student community. Teachers in the educational institutions used to explain the concepts on a blackboard which was almost the single source of knowledge impart for them. It was hard for the students to find additional references on the concepts which are covered by the teachers and almost a similar situation for the students. The available books were not updated on a regular basis forcing the stagnation of the content for a longer duration of time. The teachers were relying on these books which were infrequently updated resulting in information errors.

All these were revamped with the induction of technology which is viewed as the era of technology that portrays significant role in the lives of the people. A situation has arisen where lack of technology or poor technology can lead to weak economy. With the advent of technology all the activities were done with ease and also at a lesser time. Thus the significant impact of the technology is felt across the sectors and areas and one such vital field is the Education.

The technology is used in the field of education where a wide variety of tools that assists the students to learn and measure their performance. This can be viewed as an ethical practice of facilitating e-learning where learning and enhanced performance can be obtained by creating, adopting, administering apposite technical resources and their processes which are aimed to enhance the level of proficiency of the students and the education as a whole. There are continuous efforts in the field of education where new technologies were introduced with the motive of making the education for the students more joyful, easier to understand and also easy to access the content. With these changes, the students had overcome the cumbersome process of learning and moved towards the interesting and easy to utilize the concepts which ultimately made the students learn while playing.

The usage of technology in educational institutions has progressed after 90's where different modes were introduced for the better understanding of the students. In the initial phase, the computer based learning mode was made used of through the cognitive and constructive

learning methods where the emphasis is on both the abstract and the domain specific problem solving. In the subsequent phase, the students were exposed to various media and omnipresent technologies which focused on situation-based learning which motivated the students to think differently to the prevailing problems of the society. In the next phase, the students were introduced to the concept of presentation-based activities where the students can learn through both the audio and video mode of activities with the help of streaming technologies and presentation technologies. With these rapid changes in the field of education, technology acts as tutor, teaching tool and learning tool.

OBJECTIVE

The paper is aimed to understand the transformation of the educational institutions in imparting knowledge to the students with the usage of technology over the period of time. It also tries to ascertain the advantages and disadvantages of implementing these changes in the educational institutes.

TRANSFORMATION OF EDUCATIONAL INSTITUTIONS THROUGH TECHNOLOGY

The traditional mode of imparting education where gurus emphasized on the rituals was replaced by the modern techniques which focused on the reading, writing, logic, arithmetic etc. Though both of them look to be different, it can be observed that a suitable relationship existing between these modes of imparting education to the students.

With the advent of technological changes over the period of time, the meaning of imparting education has drastically changed which revolutionized the entire education system. With these advancements in the technologies, the student community is being geared up for their future with uninterrupted learning process which can revolutionize even their routine activities also. Over the years, it is being observed that 360^0 approach in the education system can pave the path for the students' personal enhancement and leading to personal success also. This approach enables the students to get ready on the path of continuous learning as these gears them with the ever-changing aspects in the society across the world. These changes in the education system enable the students to open up their minds and clinch on to the new ideas and opportunities which assist in building better lives form themselves and also for the entire society. This is essential as with the changes in the technology, the world is shrinking and making it a global village where connecting the students and collaborating among themselves is being done at ease and with no time restrictions along with sharing the information, ideas etc in a more dynamic mode. To cope up with these advancements and impart the latest happenings to the future leaders of the society in various spheres of science and technology, the teaching community also needs to upgrade themselves on a regular basis and ensure the appropriate modes of delivery is being adopted to shape these present day students. It is vital for all to consider these aspects and the influence of education on the economy of the country which has become more competitive over the years where the local companies are expanding their horizons and competing themselves on a global scale. The important stakeholders of the education system need to seize the opportunity arising out of these challenges so that the teaching community is equipped with the best technological tools.

Lure in the usage of the Information and Communication Technology popularly known as ICT, had made significant impact on the achievements of the students. Especially with the usage of the smart phones, laptops, smart televisions, laptops, smart devices with the help of internet had broadened the scope of education and enhanced its quality. With these technologies, education is imparted which is near and relevant to the life within the society and made interesting for the students to learn and at the sametime made it ideal for the educational institutions to deliver them. ICT paved the path for the inculcation of creativity among the budding minds of the students and at the sametime having realistic approach to the problems of the society and enhancing their chances of identifying suitable solutions to these observed problems. It is evident that the future is driven by ICT and forces the educational institutions to adopt these technologies and ensure that the students are ready for their future.

Science and Technology are vital for the development and implementation of these ICT tools and the teachers need to be provided with suitable training programs so that appropriate usage of these modes is implemented in their teaching modes. With these usages of these advancements, the beneficiaries are the students who are motivated to learn and get themselves involved in the learning process which will have a long lasting impact on them and remember the concepts for a longer duration. Continuous interactive mode of learning will drive the students to be future ready and make the society the ultimate beneficiary of all these attempts. All these are possible only when the teachers understand the need and significance of integrating the technology in their teaching delivery mode.

As being quoted by Liz Burdon of Britain's Durham University, the major focus should be to encourage student to have equal access and higher active engagement where they share, create and inculcate problem solving techniques thereby minimizing passive learning. With the usage and integration of the technology in the learning process there are various benefits to the students such as: enabling them prepared for their future, making the learning process interesting, encourages them to work coordinate among their friends and work in teams, enabling diversity in the process of learning, enables them to feel the real world environment, enthuse them to be part of the needs modes of learning and also making use of them, usage of internet enables the students to have latest information with ease and in shorter time, digital version of the books frees them from carrying books, digital version of the content also helps them to be vibrant in the creative thinking process, and also converts the traditional teachers into facilitator who encourages and guides them to reach the students to reach their desired levels in their life.

There has been tremendous growth in the process over the years which can largely contributed to the enhanced human capacity. The usage of technology in the educational process had enhanced the learners with new techniques in the process adopted by the industries for their production enhancements. The usage of technology had enabled the future workforce to make use of the technology and equipments which paved the path for higher employee productive in the organizations. This inturn made the workforce more knowledgeable so that they can increase their productivity and also add value to the economic

output of the country. The usage of technology early in the educational institutions enabled the workforce to innovate new techniques which simplified the production process. In addition to these, the same can be oriented from the perspective of the educational institutions' curriculum. With the increased usage of technology in the society had forced the institutions to include the same in their respective curriculum so that the students are future ready and also know about the ongoing changes in the technology used in the society. This early age usage of the technology by the students had enabled value addition to the society and thereby to the economy of the country. This also lays the platform where new innovations can take place and can also show solutions to complex real world problems. This all helps in technological literacy followed by knowledge deepening and paving the path for knowledge creation.

ROLE OF TECHNOLOGY IN EDUCATION FOR FUTURE READINESS

By the end of this decade, it is estimated that there will more than one million digitized newly created jobs across the globe despite the presence of opinion of the organizations that more than 70% of the workforce have shortage of the desired skill set especially the IT skills. The students, who are the future along with the other stakeholders of the educational institutions, feel there is fissure in the skill set required. To ensure that the learners are geared up for the digital economy, the education system needs to adapt to the ever changing required of the organizations. There is need for interdisciplinary academic models to address the complex, drastically changing work requirements so that effective and efficient teaching, learning environments are created.

It is evident that the teacher competency is the pivotal to learning despite the rise in the usage of the technology. The teachers should use the technology which will pave the path for the improvement in the student learning process. It is essential to identify new approaches to the usage of technology in the education system. There is need to reveal new looms in the field of education as there is huge impact of technology in the educational sector which provides the needed experience to have a deeper learning activities. The students need to have a teamwork approach where they need to collaborate their learning, articulate their ideas, test out their ideas and redesign their models , if any required. There is need for the students to eloquent their learning and knowledge in all the modes of communication like the visual, verbal etc. Interdisciplinary approach will emerge new techniques of education which will benefit all the stakeholders of the education system.

With the implementation of technology in the education system, it generated digital, relevant, dynamic tailor-made hands-on experience for the students which paved the path for nurturing their talent thereby developing the ability to empower the continuously evolving digital society and economy. The educational system can overview the learning process through the digitally designed learning tools which enable the interaction of the teachers, students etc in their environment like the classrooms, labs, on job learning etc and the tools used in this process such as activities, simulators etc. The environment in which these learning activities are being undertaken should be diverse and at the sametime flexible which ensures that there is continuous interaction between the instructor and the learner. The blended mode of

delivery provides a wide range of opportunities for the teachers and the students along with the applications. The process should be outside the learners' comfort so that their skills set can be improved thereby the chances of optimizing the capability of the students to learn new things by having a proper balance between their acquired abilities and the new challenges posed to them. There are several visualization tools which present the learners with new opportunities for them to acquire new skill sets and master them to perfection. These digital tools tend to have personalized learning experience for the students.

There are various assessment techniques which are being adopted to ascertain the learning levels through activities. This needs to be conducted on a continuous basis both through formal and informal modes along with obtaining feedback so that necessary corrective actions can be taken, if any required. With the continuous changes in the digital environment, it is providing exciting opportunities to the students in shaping their learning experience thereby they can attain their learning goals. Despite these advancements, the human psychology which is the central point has not changed much over the period of time. There is a continuous evolution of the process in which the learners grasp, obtain and retain new things. It is always important to identify the part of the teacher that is being portrayed by them in the class. They are in a position to evaluate the learners' progress with personal insight which helps them in inspiring the students which the technology mayn't and at the sametime act as a role model and local guardian. The teachers can motivate and inspire the students which can't do effectively by the technology or the machine adopted for delivery of the content. The learning process when equipped with innovation will enhance the level of education ensuring that the learning experiences cope up with the required demand skills of the market. When the learning is bundled with technological innovation, the education system can be leveraged to enhance digital literacy equipped with human driven education which inturn creates / enhances the learning experiences of the learners. All these efforts are made to ensure that the digital market demand is being met and at the sametime enhance the lives of the people, society, supporting the organizations thereby leading towards transformed global communities.

ADVANTAGES OF USING TECHNOLOGY IN THE EDUCATIONAL SYSTEM
There are various advantages bundled with the usage of technology in the educational institutions. Some of them are mentioned below:

- **Access to e-content** is made easy for the users. The content is made available with the usage of internet which assists them to enhance their knowledge levels.
- Technology provides **unlimited quantity of information** available from multiple sources to raise the levels of the learners.
- With the induction of technology in the education system enables the learners to have **Uninterrupted Learning Process**. These can be accessed 24*7 enriching the knowledge levels of the learners.
- Technology provides an **effective interactive learning** and teaching experience for the learners.

- Technology enabled the users across the globe to **share their knowledge** and experiences which will help in enhancing their knowledge levels. No geographical barriers exist in the mutual sharing of the knowledge.
- Technology enabled the learners to have better understanding of their concepts through audio and video mode. These **learning aids** help the learners to have better idea of the concepts rather than having the traditional mode of delivery of the content.
- Technology enables the students to learn the content at their **own pace and style** which is not possible with the traditional mode of content delivery.
- Technology enables the students to be more engaged with the learning process so that they are directed towards **collaborative activities** and retain the learned knowledge.
- Technology enabled the educational institutions and organizations to provide **online certification courses**. The users were provided with an option to study the courses of their interest by staying at their home.
- Technology enables the teachers to obtain the necessary **feedback instantly** and also prepare the students for the future. It ensures to have better understanding of the performance of the learners.
- Technology enabled to ascertain the progress of the students on a continuous basis. The records were stored safe and can be retrieved as and when required by the institutions which was were difficult while maintaining the physical records. The **safety and maintenance of the data** is at a higher level with the usage of the technology.
- Technology enables the **learners to be digitally literate** and also provides the learning at reduced cost.
- Technology **excites the learners** and persuades **spontaneous learning**.

CONSTRAINTS OF USING TECHNOLOGY IN THE EDUCATIONAL SYSTEM

Despite the advantages of using the technology in the educational institutions, there are few constraints which need to be addressed to have better results. Some of the constraints include:

- Usage of technology in the classrooms can **distract the students.**
- Usage of technology in the classroom can **reduce the attentiveness** of the students with the focus shifting towards looking at the mobiles etc.
- Usage of technology can disconnect the students from the process of interacting with their peers. Chances of being **disconnected socially** by spending less time with their family, friends, teachers etc.
- With the usage of technology, there are chances that the learners get **access to inappropriate content** which can distraction them from their main purpose of education.
- Too much of usage of technology in the education system can have **negative impact on the students' health**.
- The usage of technology in the form of pre-made activities and games in the learning process can **reduce the creativity** of the students in problem solving.
- There are chances that the learners may **not differentiate between the real and fake information** as tons of data are available on the internet.
- Usage of technology can **replace the teachers** in the classroom.
- Technology is a costly affair which **may not be affordable** by few.

- Usage of technology may enable the learners to **cheat in the examination**.
- Usage of technology may lead to **cyber bullying** which can ruin the life of the students.

CONCLUSION

There is continuous transformation of the education system with the implementation of the technology in the process of learning. With the advancements in the technology adopted in the education system, the learners were provided with lifelong learning through modern approaches which incorporates the advancements in the technology on a continuous basis. With these renowned modes of education, the learners can expand their thinking levels clinching towards new ideas, innovations, and opportunities etc which pave the path for better lives for themselves and for the society as a whole. Technology had enabled the learners to share the knowledge across the globe with no barriers and this paved the path for competitive economies where the local organizations compete with the other organizations on a global level. Technology enables the learners to acquire the needed information from various sources and also exhibit the concepts through audio-video mode which will have long lasting impression in the minds of the learners. The success of the implementation of the technology in the education system is dependent on the teachers as well as the learners. The teachers need to emphasize on the project based learning which help the students to develop knowledge and skills through critical and analytical skills. Teachers who act as facilitators need to motivate the students in learning and cater to the different needs of the students. Teachers are vital in making the present day learners into future leaders in all streams of education like science, arts, healthcare, technology etc through proper understanding of the various tools available and when to use these tools to have better results. Teachers are in such a position where they can challenge themselves, transform themselves and adapt to these new technologies so that all the stakeholders of the education system are on their toes to have the sources which transform the lives of the individuals and a better society is being evolved.

REFERENCES

- Aladsani, H. K. (2022). A narrative approach to university instructors' stories about promoting student engagement during COVID-19 emergency remote teaching in Saudi Arabia. *Journal of Research on Technology in Education*, *54*(S1), S165–S181. https://doi.org/10.1080/15391523.2021.1922958
- Bolliger, D. U., & Martin, F. (2021). Factors underlying the perceived importance of online student engagement strategies. *Journal of Applied Research in Higher Education*, *13*(2), 404–419. https://doi.org/10.1108/JARHE-02-2020-0045
- Bowman, M. A., Vongkulluksn, V. W., Jiang, Z., & Xie, K. (2020). Teachers' exposure to professional development and their use of instructional technology: The mediating role of teachers' value and ability beliefs. *Journal of Research on Technology in Education*. https://doi.org/10.1080/15391523.2020.1830895
- Maya Escueta, Vincent Quan, Andre Joshua Nickow, Philip Oreopoulos(2019), EDUCATION TECHNOLOGY: AN EVIDENCE-BASED REVIEW*, NBER WORKING PAPER SERIES, Working Paper 23744* http://www.nber.org/papers/w23744

- R Raja, PC Nagasubramani (2018), Impact of Modern Technology in Education, *Journal of Applied and Advanced Research,* 3 (supp:1) S33-S36

- Bolliger, D. U., & Martin, F. (2018). Instructor and student perceptions of online student engagement strategies. *Distance Education*, *39*(4), 568–583. https://doi.org/10.1080/01587919.2018.1520041

- Raja, R. & Nagasubramani, P.. (2018). Impact of modern technology in education, *Journal of Applied and Advanced Research.* 3. 33. 10.21839/jaar.2018.v3iS1.165.

- Jennifer L. Harris, Mohammed T. Al-Bataineh, Adel Al-Bataineh, One to One Technology and its Effect on Student Academic Achievement and Motivation, *CONTEMPORARY EDUCATIONAL TECHNOLOGY,* 2016, 7(4), 368-381

- Stosic, Lazar. (2015). The importance of educational technology in teaching. *International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE).* 3. 111-114. 10.23947/2334-8496-2015-3-1-111-114.

- Edwards, M. (2012). Our digital conversion. *Education Digest,* 78(1), 4-9.

- Amelink, C., Scales, G., & Tront, J. (2012). Student use of the Tablet PC: Impact on student learning behaviors. *Advances in Engineering Education*, 3(1), 1-17.

- ICT in Education in India, 2012-13, *http://www.icbse.com/ict-education*

- Keswani, Bright & Banerjee, Drchitreshh & Patni, Priyadarshi. (2008). Role Of Technology In Education: A 21st Century Approach. *Journal of Commerce and Information Technology.* 8. 53-59.

- Locatis, C. (2007). Trends and Issues in Instructional Design and Technology Reiser, R.A. & Dempsey, J.V. (Eds.). *Upper Saddle River, NJ: Pearson.*

- Teaching with Technology, 2006*, http://cte.uwaterloo.ca/teaching_with_technology/*

- Bassett, P. (2005). Reengineering schools for the 21st century. *Phi Delta Kappa,* 87(01), 76-78

- Research Findings and Implications for classroom Practice (Texas Instruments), 2005, *http://education.ti.com/sites/US/downloads/pdf/CL2872.pdf*

- Roschelle, J., Pea, R., Hoadley, C., Gordin, D., & Means, B. (2000). Changing how and what children learn in school with computer-based technologies. *The Future of Children, Children and Computer Technology*, IO(2), 76-101

- Dwyer, D., Ringstaff, C., & Sandholtz, J. (1991). Changes in teachers' beliefs and practices in technology-rich classrooms. *Educational Leadership,* 48(8), 45-52.