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The Role of ICT (Information and Communication Technology) In Higher Education

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ABSTRACT

The planning and execution of education must be improved in order to meet the goals set for each age group. A modest growth trend in total representation is reflected in India's higher education. The NPE-2019 declares a favourable long-term policy. It is about providing a large-scale facility and access to educational needs, as well as the total integration of physical and biological educational resources with technology. It would be possible to produce the most amount of higher education with greater values if the teacher, students, curriculum, extracurricular activities, teaching aids, facilitators, evaluations, assessments, virtual utility, etc. were all integrated. The agencies and organisations involved in the direction, supervision, and management of higher education keep a close eye on the programmes, and education technology will give the organisation a timely and ideal functionalism for developing new policies. The government's aim and vision for education are made possible through both private and public initiatives. The actual preservation and analysis of data for educational purposes is guaranteed by educational technology. The electrification of higher education and its use of technology and communication have a positive impact on student interest and performance.

Keywords:- Technology, Higher Education, Challenges

I. INTRODUCTION

The Diploma, Graduation, Post-Graduation, Doctoral, Post-Doctoral, and Fellowship educational programmes are offered to applicants to enrol under colleges, institutions, universities, and research centres in order to enhance their knowledge for practical application. In India, many public and private institutes of higher learning have been established. The main goal of educational institutions is to impart knowledge as effectively as possible through the efficient use of its input resources, which include lecturers, classrooms, libraries, and laboratories. Every programme has a different aim, but the most typical one is to equip the participants with knowledge for future learning or professional competencies.

Social well-being is a component of sustainable development, and it depends on education. Reforms in education are primarily motivated by the emergence of information technology as a tool for the dissemination of knowledge. Education in schools and institutions has changed as a result of the introduction of new technology-assisted learning tools like mobile devices, smart boards, MOOCs, tablets, laptops, simulations, dynamic visualisations, and virtual laboratories. One of the most economical strategies for training developing

minds is the Internet of Things (IoT), which has been demonstrated. Additionally, it serves as a method for universally integrating top-notch educational opportunities [1-3]. Businesses in the educational technology sector are always tempted to develop innovative solutions to increase access to education for people who lack suitable educational facilities. Social media has advanced significantly as a tool for education.

Social media is used by many teachers and students as a crucial component of the whole e-learning experience. These days, it serves as a vital forum for the exchange of knowledge about important subjects. Social media websites are a great resource for creating networking opportunities to build social activities and maybe new occupations [4,5] in addition to the ability to share information anywhere, at any time.

The versatility and non-intrusive nature of modern technology do, in fact, make learning more enticing to the younger generation. It could be a difficult technique to master at first, though, as conventional educators is reluctant to integrate modern technology and gadgets into the classroom because they see them as a distraction rather than a clever learning tool [6, 7]. Students can better prepare for class by using an online calendar that shows the times of classes, assignments, field trips, guest speakers, exams, and semester breaks. Student response systems, such smartphones and clicker devices, give teachers a quick and simple way to assess how quickly students are absorbing the pre-sented material and whether further explanation is needed [8–9].

Digital learning is a fantastic way to reduce expenses, more effectively use resources, encourage sustainability, and increase both reach and impact for students and teachers. This is true of the environmental impact of using less paper for handouts and books as well as the time savings and convenience of research. [16,17]. Modern life and society are heavily reliant on technology in many areas. The worldwide digital revolution has started to permeate the field of education. Technology is projected to change education by making it more affordable and accessible because it is fast changing how students learn [18–20].

ICT (Information And Communication Technology) Role in Higher Education:

A number of factors combined over the course of the 1990s to force institutions of higher learning to investigate the expanding possibilities that information and communication technology (ICT) offered in terms of enhancing pedagogy and simultaneously changing the way that administrators and academics engaged with various student cohorts [21]. Many factors are driving the adoption of ICTs in education as we enter the twenty-first century, and current trends indicate that we will soon witness significant changes in how education is organised and delivered utilising ICT [22]. Furthermore, the quick development and transition of new technology suggests that higher education systems must adapt to improvements in knowledge and abilities. Universities must ensure that their students have the information, abilities, and skills necessary to compete in an increasingly global and cutthroat industry [24]. The goal of the ICT policy in higher education is to "prepare young for creative participation in the establishment, sustaining, and expansion of a knowledge society contributing to overall socioeconomic development of the nation and worldwide competitiveness"[25]. ICT is used for management and administration tasks in addition to delivering lectures and course materials. It is obvious that the usage of ICT has helped administrative processes such student registration, grades, course scheduling, and even staffing evaluation [26]. Higher education will inevitably incorporate ICT, and the emphasis will be on using it to improve the system for open and distance learning. The unique function of ICT in strengthening research capabilities should be identified in institution- and sector-wide higher education ICT policy and planning, and sufficient infrastructure should be supported by capacity building. Digital libraries, access to online databases, networking etc .can be enhanced through inter institutional collaboration to ensure optimal usage of ICT expertise and resources[24].

Benefits and Implications of applying ICT in Higher Education

ICT application in higher education can serve the following:

- Speed and automatic functions: the feature of ICT which enables routine tasks to be completed and repeated quickly, enabling teachers to demonstrate, explore or explain aspects of their subject, and allowing students to concentrate on thinking and on tasks such as analyzing and looking for patterns within data, asking questions and looking for answers, and explaining and presenting results.
- Capacity and range: the ability of ICT to access and to handle large amounts of information; change timescales, or remove barriers of distance; give teachers and pupils access to historical, recent and immediate information and control over situations which would normally be outside their everyday experience.
- Provisionality: the feature of ICT which allows information to be changed easily and enables alternatives to be explored readily.
- Interactivity: the function of ICT which enables rapid and dynamic feedback and response
- Furthermore, applying ICT in education has the following advantages:
- A sense of presence, possibly even community, in online interaction;
- Improved learner support;
- Unlimited practice of difficult concepts, skills, etc.;
- Unlimited access to resources via the Internet;
- Improved delivery of learner preferences;
- Global access to resources and teaching; and
- Learning anywhere, anytime [21].
- There are some implications of ICT in higher education:
- Time, space and socio-economic factors are no longer major barriers to learning.
- Decentralized nature of the new technology frees the learner from the technology provider.
- Learners have access to variety of learning resources.
- Up-to-date knowledge from any part of the world.
- New media allows interactive, learner need not be a passive recipient of knowledge.
- New technology allows the learner to receive information in a variety of formats [22].

Challenges of ICT in Higher Education:

The high expense of purchasing, setting up, using, maintaining, and replacing ICTs comes first. The use of ICTs into teaching is still in its infancy, although having a lot of potential. Since implementing ICT systems is frequently more expensive in absolute terms than in industrialised countries, and other investments (such buildings) are generally less expensive, introducing them for teaching in poor countries has a particularly high opportunity cost. In particular, if the pirated software varies in common formats, using unlicensed software can be exceedingly challenging both legally and financially. Even while well-made educational materials can be of great value to students, teaching online poses some special difficulties because not all professors are ICT-literate and capable of using ICT tools.

The four most common mistakes in introducing ICTs into teaching are:

- Installing learning technology without reviewing student needs and content availability;
- Imposing technological systems from the top down without involving faculty and students;
- Using inappropriate content from other regions of the world without customizing it appropriately;

- Producing low quality content that has poor instructional design and is not adapted to the technology in use.
- Lack of support from management;
- Unclear division of function and power;
- Uncoordinated planning and implementation;
- Question of ownership;
- Shortage of trained staff to cope with the diversity of responsibilities and tasks;
- Resistance from staff and reluctance to be retrained;
- Insufficient funds for developing, purchasing and implementing ICT [20].
- Overcoming negative perceptions from early unsatisfactory experiences;
- Educational design and publishing standards;
- Timescale and workload;
- Getting take-up of the quality assurance processes;
- Maintaining momentum [24].

II. CONCLUSION

The findings for the Effectiveness of ICT in Higher Education Model make it clear that all the free components, including ICT availability, usage, knowledge, and cost, are very enormous and have a strong positive impact on ICT viability. It is also clear from the research that cost is the aspect that has the most influence on how well ICT is used in advanced education, with accessibility and learning coming in second. It is commonly assumed that ICT in education can support a few processes related to educating and learning through data transfer and information assistance. ICT facilitates learning and teaching since it is thorough and well-organized, and as a result, basic skills may be developed to further benefit from the process. In this way, it should be considered that changes in learning outcomes are typically related to the use of creative mechanical techniques in instruction. It is typical for teachers and administrators to create clear and appropriate rules in schools, businesses, and institutions in order to increase the use of ICT.

III.REFERENCES

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