# ICT-Based E-Resources and E-Learning Platforms in Higher Education

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## ABSTRACT

*The progress and advancement of nation is highly dependent on the merging and upgradation of modern based technology in the Higher education system. Higher education is considered as an industry, for ascertaining knowledge-based civilization. The 21st century has witnessed an extraordinary technological advancement in different areas of world, and the field of education is no exception in this context. The contemporary higher educational institution is placing utmost priority to the use of ICT in teaching learning process and access of online platforms for the learners. The entire teaching learning materials in this ICT dominated world is digitalized, and the students are exploring study materials from e resources available in different educational platforms. The effectiveness of e- learning system was witnessed during COVID-19 pandemic in all over the world. It was due to the effective uses of e-learning system the education was continuously provided to the learners even during pandemic period. The ICT-based e- learning and digital learning approaches are highly emphasize by the NEP 2020 in the field of higher education. This paper tried to explore the application of ICT- based teaching learning process and digital platforms with its importance in the field of education. The authors had gone through the various articles and studies conducted by many researchers in the field of ICT, e-learning platforms, and e-resources to draw descriptive analysis on the above-mentioned topic.*

*Keywords: E-Journals; E-Resources; ICT-based learning; Digital platforms; Self-paced Learning; Higher Education Policy.*

## Introduction

The education system is an ever changing phenomenon since from ancient time, as it is completely based on the social demand. In this digital era, amalgamation of Information and Communication Technology (ICT) in an apex educational institution has been a dependable feature of educational approach and frameworks. The ICT based education system reflects the employment of digital technology and

different online platforms (Davies, 2019). The contemporary higher education students give more emphasis on the ICT based education in comparison to the traditional education system. There is no iota of doubt that introduction of internet has brought drastic changes in the field of education and learners perception towards learning process. The working nature and functions of libraries in educational institutions changes drastically due to availability of different online resources in this digital era. There is a total facelift in the libraries of higher educational institutions as they are integration traditional textbook with e-journal and books from different online platforms for the learners. The students acquainted with online study materials are taking advantages of the high quality and diverse study materials which are available in online platforms.

The scenario of contemporary classroom is changing rapidly due to the changing nature of demand towards of approaches of teaching learning process. There is constant demand for the use of ICT-based teaching learning and access to e – resources materials among the students in higher education. The 21st century education gives priority to the students learning process by giving    student-centered curriculum. This give an opportunity to the students to learn from the diverse approaches of teaching learning platforms provided to them.

## Rationale of the study and Methodology

Huge changes are witnessed in the contemporary education system in terms of teaching learning process. There is a rapid paradigm shift in classroom setting in the higher education system. Dramatic changes in the technological advancement are gradually dominating the traditional classroom teaching. There is always a demand for student centered education due to which postmodern education is more incline towards students. Exploration of e-resources available online are widely search and used by the present day higher education students. The teacher serving in higher education needs to update themselves about the use of ICT, and exploration of e-platforms to survive the tag of obsolete person. This indicates the importance of ICT, e-learning, and e-platforms in the higher education system. As a result, the current review is both necessary and important, as it demonstrates the impact of ICT-based e-resources and e-learning platforms in higher education. The main objective of this article is to draw descriptive analysis of ICT-based e-learning platforms, and e-resources by exploring its benefits, and various platforms.

The present study primarily relies on the available secondary sources such as books, articles, journals, theses, and e-resources available in websites. The chosen methodology for analyzing the information collected from the various sources was Descriptive Analytic Method.

## Concept of E-Resources

The resources which are available and need electronic gadget for its accessibility of materials contents are called e-resources. This categorization includes contents in both physical and soft forms, including CD-ROMs. Whichever, substance presented by a library from a computer network end falls under the e-resources umbrella (Davies, 2019). Contained by the sphere of online information resources, are normally considered as an electronic materials, one encounters bibliographic databases, digital references, electronic books, and collections of digital data. These resources encompass content that is both "born

digital" and content generated directly for online platforms. Examples encompass e-journals, databases, and digitized versions of print materials (Digital Learning Network, 2019). There are different types of E – resources available online some are available at no cost or involve a free when accessed over the Internet on the other hand some e resources available online needs subscription from the users. The examples of e-resources are magazines, encyclopedias, newspapers, scholarly journals, and the articles contained within them (Ahmed, 2013). The users can access through theses resources by using electronic gadgets such as computer, iphone tablets, Smartphone which should be connected to the internet.

## Benefits of using E-Resources

Following are the benefits of using e-resources

1. It is very easy to access e- resources as it is available online and could be downloaded instantly by using internet and electronic gadgets. There are many e-learning platforms available in the internet world and users can choose any one platform or many platforms as per their requirements.

2. E-resources are available online worldwide for the users in different languages which could be access and used as per the learners convenient in terms of time and pace.

3. The resources are available online are user friendly and could assist differently able person through assistive devices while accessing e-resources.

4. Acquiring of e-resources is quite easy and cost effective in comparison to the traditional materials. It reduces the physical barriers and cost of the materials which is available in every corners of the world without physical barriers.

5. There are many provisions offered in e- resources to make the users more engaged such as interactive session and self paced learning. It draws the attention of the learners by using animations, music's etc. which enhances the understanding level of the learners in the contents provided.

6. The materials downloaded from the e-resources platforms could be kept in various electronic devices, such as laptops, smartphones, and cloud storage platforms, minimizing the risk of misplacement.

7. The materials are available in e-resources 24/7 which make it easy to access any time which offers convenience for research scholars' and students for studying, or preparing assignments.

8. E-resources is user friendly as it require no physical storage or maintenance, making them user-friendly and efficient and it's accessibility requires only internet connection.

## Features of the E-Resources

Some features of e-resources are discussed below:

❖ Diversity of Contents: E- resources are available in different types and contents which include articles, books, multimedia, and databases, providing users with a comprehensive knowledge base (Park & Son, 2016). This feature of e-resources fulfilled the diversified need of the users which is quite satisfactory.

❖ Worldwide Accessibility: Any one can access the e-resources without any physical barriers, fostering a global learning and research community (Lewandowski, 2019). This features of e-resources makes

it easy accessible in the any parts of the world where internet is available.

❖ Interactive Features: This feature of the e-resources makes it very attractive and interesting for the learners. Some e- resources integrate interactive elements, quizzes, simulations, and multimedia, enhancing engagement and understanding (Hew, & Brush, 2007).

❖ Easy to search: It is very easy to search specific content and information as desired by the users increase the efficiency of the e-resources. it is due to this features it contributes a lots in assisting the users in the early completion and quality enhancement of their works.

❖ Annotation and Note-taking: E- resources frequently assist learners to interpret and take notes directly within the digital content, which encourage constant reading and organization of the information (Hsieh, 2015). This feature of e-resource enhance the users to diversify their information collected and explore the work of others for better understanding of the areas under consideration.

❖ Instant Updated Information: It is quite easy to update e-resources materials in real-time which guaranteed the users have explored to the updated information and research findings (Willinsky, 2006). This instant updating of contents feature is not available in traditional platform which makes e-resources more advantageous in comparison to traditional platform in this particular context.

❖ Facilitates Users Preferences: E- resources facilitates user's preferences, and gives notifications when new preferable materials are available online, and save searches (Koohang, & Harman, 2005). This feature customizes users' preferences of the e-resources information which is highly beneficial.

❖ Integration of Multimedia: The multimedia elements of e-resources may be considered as one of it's backbone feature. Normally e-resources contain multimedia elements like videos, audio clips, and images, which enhance the learning experience of the users (DaCosta, & Kinsell, 2019).

❖ Remote Accessibility and Collaborative Features: Irrespective of diverse geographical features e-resources could be access anytime anywhere where internet if available. It also encourage collaborative learning, sharing annotations, group discussion, sharing of ideas, and research ( Shneiderman, 2019).

The above given features largely add flexibility and efficiency of e-learning in context of educational purposes. In addition to the above given features some more existing features of e-resources make its cost effective and user friendly in higher education stages. Some available diverse resources are:

➢ **Electronic-Journals:** E-journals could be access through internet in digital forms which are published periodically such as weekly, monthly, half yearly annually etc. just like traditional print journals. In terms of accessibility e-journal could be easier to access in comparison to the traditional one. Gradually with the advent of internet era e-journal are getting utmost popularity. Particularly, D-lib magazine exclusively disseminate materials in the form of electronic materials is an example of inclining towards e-formats in trending. This changeover toward e-resources may direct to the less popularity of traditional forms of education system. The journals provided through e-format could be available free of cost or may need subscriptions to access it online. There are lots of advantages link with the e-journal such as easily available, accessible and retrieval

E- Journals can be categorized according to their access modes provided as given below:

1. **Open Access:** Open access journal could be access freely without any restriction all over the world. It contributes in spreading knowledge based information among the researchers and students of higher education. In this journal basically authors retain copyright of the article. The financial support may be borne by the concerned institution; agencies or fees bear by the concern author.

2. **Subscription-based:** Subscription based journals are not available free of cost rather it take subscription fee based on the frequency of the journal publication such as weekly, monthly for individual subscriptions or institutional. The publisher of the journal gets revenue through the subscription fee from the readers but the accessibility of the article in this journal is limited in comparison to the open access journals.

3. **Hybrid Journals:** These types of journal could be access openly or subscribed by some who is interested, it has quality of both. The authors have the opportunity to opt to pay fee to make their articles openly accessible while still providing subscription-based access to non-open content.

It is quite clear from the above discussion that different types of e-journals are available based on their nature of conditions. These journals are available online and some of them could be access at any time by using internet connection. It helps the higher education students and researchers to access information or publishes their research works.

➢ **E-books** – These books are published digitally and available online containing text and images, designed for reading on digital devices (Davies, 2019). The e-books are exactly the digital lookalike of hard textbook with all features of the traditional textbook available for downloading. There are various types of e-book some of them could be downloaded and read offline but some require specific softwares like Adobe Acrobat Reader to read the digital (Sachdeva &Bhasin, 2020). These books could be access on electronic devices such as computers, Kindles, Android, iPads, and iPhones. E-book platforms like My library, EBSCO, etc.

➢ **E-databases**: These are well maintained compilation of various records with numeric, textual, or image-based data, accessible online or through CD-ROMs (Arshad & Ameen, 2018). E-databases include the database of bibliographies of the information about literatures published and e-textbooks, including entire documents like journal articles and conference papers. Examples include Science Direct, JSTOR, and PROQUEST.

➢ **E-reports**: E-reports are available in the form of digital documents having descriptions, graphic, or tabular formats, created periodically or as needed (Sachdeva & Bhasin, 2020). These reports could be created in electronic format and available either in written or spoken for uploading in digital platforms. Normally e-reports are published annually, events, or whenever felt necessary by Educational institutions and organizations.

➢ **E-theses**: E-theses and dissertations are submitted in digital format by the scholars through various educational institutions to claimed academic degrees or the institutions digitizes the hard copies of the research works submitted by the scholars of those institutions after completion of their research

works. Many universities are contributing the digized form of theses in repositories like Shodhganga @INFLIBNET and Vidyanidhi. The repositories from the educational institutions Institutional provide as podium to systematize and present intellectual contributions from higher education teachers (Fisk, 2017).

Above mentioned e-resources and platforms could be used effectively by the higher education students for their academic benefits. Some of these mentioned platform needs subscriptions by institutions to get its benefits. The higher education institutions also need to show interest in these online platforms and should subscribe it for the maximum benefits of the students.

Descriptive analysis of the ICT-Based E-Resources and E-Learning Platforms in Higher Education

ICT – based e-resources are the resources, which need electronic gadget for its accessibility of contents. It is available in different formats and e-learning platforms which could be access through internet. Higher education students need diverse exploration and knowledge accumulation from various resources available. Numerous benefits are attached with exploration of e-resources in higher education due to its wide circulation through internet worldwide. E-resources are usually user friendly which include provisions of different options and platforms available as per the need. The basic features of e-resources are diversity of contents, easy accessibility and searching, availability of latest information, multimedia integration and many more. Diverse e–resources platforms are available in India and abroad for the higher education students for the exploration of information available in internet. Here, it is worth mentioning that the government of India has taken numerous initiatives for the digitalization of study materials for different stages of education. The recent education policy, i.e., NEP-2020 also emphasize on the digitalization of education system for the maximum benefits of the teachers and learners.

In the context of above discussion on e-learning platforms it can be additionally viewed and explore that the government of India have gradually taken various digital initiatives such as SWAYAM, contributing MOOCs from class-ix to post-graduation level to educate the students could attain the courses conveniently at his or her rapidity and capacity. SWAYAM Prabha is also another digital platform providing educational programming via DTH channels for the learners. The National Digital Library of India and the National Mission on Higher Education through ICT have further advanced online learning in India (Davies, 2019). These initiatives reflects the willingness of the government to digitalize the educational system for higher education students and to make educational available for all by using ICT-based learning platforms. The future of higher education is expected to be fully ICT-based teaching and learning. Though it has some challenges but till date ICT-based e-learning has shown more benefits and seems promising for the future education system.

# Conclusion

The world has witnessed a paradigm shift in higher education system after the introduction of online education and creation of digital platform for education. The present decade has brought many challenges and opportunities for the higher education. In terms of challenges COVID-19 pandemic totally halt the entire education system for time being, at the same time it creates an opportunity to look for alternative

system of providing education to the learners. The exploration of ICT- based education system give an opportunity to both the learners and teachers of the higher education to explore different digital learning platforms and e-resources. In India elevating higher education system, electronic resources have emerged as dynamic catalysts. The helm of policy and planning rests with the Ministry of Human Resource Development (MHRD), steering the development of the foundational higher education landscape (Davies, 2019). The initiatives taken by the government of India before and after pandemic has creates a digitally congenial atmosphere for the ICT-based higher education system. The government has created various digital learning platforms, repository, e-resources for the learners which is appreciable. There are some challenges like internet issues, lack of manpower, electricity problems etc. which should be sort out in the upcoming days. The most promising document supporting for the online education system comes from NEP 2020 which also echoes fuse seamlessly with the grand orchestrations of the "Digital India" and "Skill India" missions.

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