

# Virtual Resources For Teaching Learning: Boon For Indian Education System

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## ABSTRACT

In 21<sup>st</sup> century era, at every level of education we can observe that web based education is becoming popular day by day. Web based education can be attained through various resources such as educational web portals, online websites. One can observe that there is rapid growth of internet technology, due to which universities around the world are investing heavily in e-learning systems so that they can support their traditional teaching and to improve their students' knowledge, comprehension, learning experience and performance. However, the success of an e-learning system depends on various factors that influence the students' acceptance and usage of such e-learning systems. Due to COVID-19 pandemic, our education system has been changed at all levels and in various ways. Institutions, colleges, learners and teacher educators had to quickly respond to an unexpected, 'forced' and dramatic transition from face-to-face to remote teaching. On one hand they also had to create learning environments for pupil teachers who are doing their preparation as per the requirements of teacher education programmes while on the other hand they have to improve conditions in which both universities and schools had to operate. The present study aims to provide a discussion of the current virtual resources for teaching learning including their characteristics, advantages and limitations.

**Keywords:** web based education, educational web portals, e-learning systems, virtual resources.

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## INTRODUCTION

In Indian education system, web-based education is emerging and is also making a positive impact at different levels of education such as pre-primary education, primary education, secondary education, distance education and adult education. Web-based education acts as a service for learners which is provided in their hand. Basically, a learner requires internet connectivity and a device to connect for acquiring quality education. Here, irrespective of time, age and place each learner can learn. In web-based education one can make use of different tools such as surveys, online discussion, self-assessment quizzes etc. which leads to creation of favourable environment for learner. In late 90s web-based education was initiated in India. Various agencies such as UGC, IGNOU and IITs played a major role in contributing web based learning in higher education. An educator can upload the learning material on the internet which can have access to the learners. Here, educator don't require to have knowledge of programming language. Due to COVID-19 pandemic various international bodies such as UNESCO is supporting countries in their efforts to nullify the effect of school closures on learners especially for vulnerable and disadvantaged communities. They are also trying to give their helping hand for continuity of education for all learners through remote learning.

The World Bank is also actively functioning with ministries of education in different countries in support of their initiatives to effectively utilize educational technologies so as to provide remote learning opportunities to learners while the educational institutions and colleges are closed due to Covid-19 pandemic. Due to pandemic, schools are closed and it has led to increase in dependency on technology while all learners don't have required skills, knowledge and resources for accessing content online. In this pandemic situation of Covid-19, one can observe that learning can now be realised online and knowledge can easily be transferred virtually by making use of multiple media. Hence, one can say that online learning is the best solution during the present crisis. Web based learning implies a learning environment that takes place over the Internet. It is also known as e-learning. Many countries in the world have gone through lockdown during COVID-19 pandemic. It has made country suffer a major crisis in various sectors such as education, because of which the exams have been cancelled for the purpose of final assessment. Due to internet connectivity issue, both teachers and learners are struggling in the teaching-learning process.

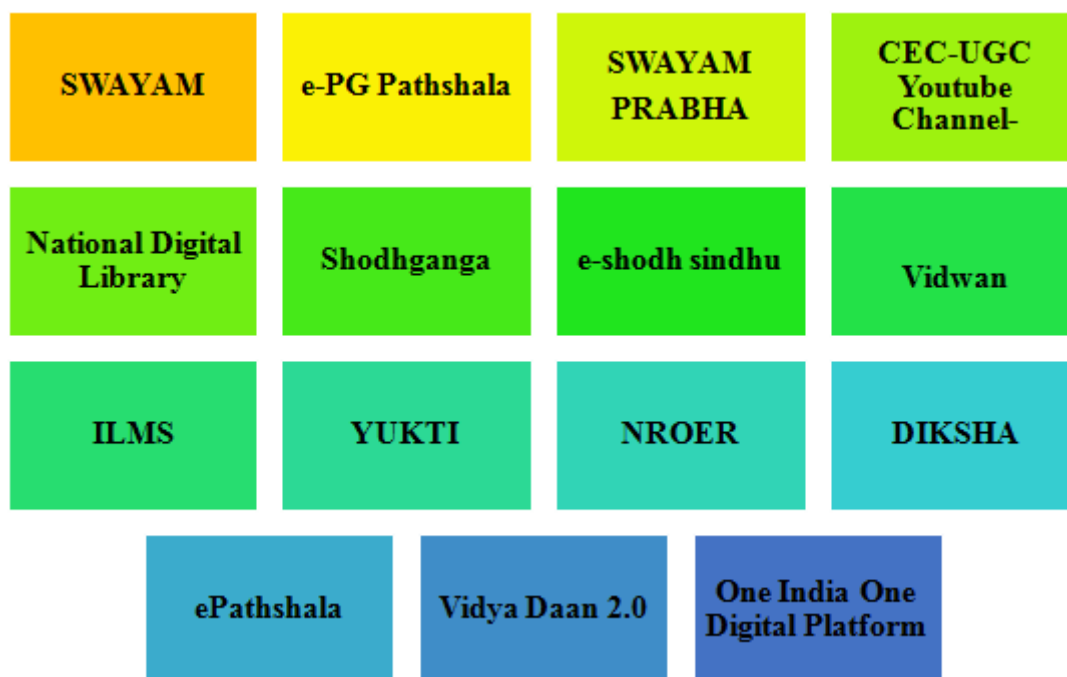
It has also led to degrade the learner's performance. Therefore, educational institutions must take certain steps to overcome the crisis. In context to India, state government is looking at online learning platform for accessing online educational resources which can be accessed by learners easily at home. It can be said that models of teaching are

designed and adopted due to the pandemic. The resources, which are available on digital platforms, can be accessed by various stakeholders such as teachers, students and researchers in Universities and Educational Institutions for expansion of their knowledge. The objective of virtual resources is to ensure that there is no break in the education and students get full-access to classes, therefore, MHRD advises students to carry on with their studies by making use of the virtual learning platforms. The purpose of virtual learning platforms is to help the students to get full access to the study material and allow them to engage in online classes and interact with the teachers like they used to do in physical classroom setting. The system of dissemination of information has been revolutionized by Open Educational Resources (OER). There is emergence of creative participation in the development of digital content in the education system (Thomas, 2017). In recent years, interactive media has been introduced in new world of technology that is difficult to execute all over the world especially in developing countries like Pakistan(Shahzad,2010).

Mishra (2020), concluded in his study that a student from non-English background found it challenging to search for relevant content or information in his native language. Therefore, it is the need of hour to have new Global Educational Web Portals and virtual platforms, which specifically resolve problems of such students. While making use of blended mode of teaching it would assist the teachers and learners to have access to large number of quality educational resources and it will also provide various opportunity to access the education from eminent teachers along with affordability (Matliwala,2017).Virtual Learning Environment is highly effective and it also facilitates the comprehensions and assimilation of various concepts in Physics (Baig, 2016).When inclusive set up is adopted in providing virtual resources to learners it will lead to increasing equality of educational opportunities and will also help in overcoming the barriers that restrict access, continuity and successful completion by all students, regardless of their individual learning needs (González, 2019).

The plethora of interests in the developmental and application aspect of technology so as to enhance qualitative teaching-learning process has gathered momentum this year (Ali, 2020; CoSN, 2020; Smith & Judd, 2020; UNESCO, 2020; World Bank, 2020). World Bank has noted that most education systems are not well equipped to offer digital education and transition to a blended education system due to technological deficiencies (World Bank, 2020). For the transition to virtual education to work effectively, support is required for the provision of infrastructural tools which includes hardware and soft ware support systems (Ali,2020). In present time, the transition from face to face environment to an online learning environment does require training (Geng, Law, & Niu, 2019) and the teaching faculty are motivated to have the right attitude in embracing the new paradigm shift (Mirzajani, Mahmud, Fauzi Mohd Ayub, & Wong, 2016). The change from face to face to virtual education should not be seen as a temporary shift of traditional instructional delivery to alternative virtual delivery model due to the crisis of present circumstances (AlLily, Ismail, Abunasser, & Alhajhoj Alqahtani, 2000; Hodges, Moore, Lockee, Trust, & Bond, 2020).

**VIRTUAL RESOURCES FOR TEACHING LEARNING**



**Figure 1- Virtual Resources for Teaching Learning**

### SWAYAM

Study Webs of Active-Learning for Young Aspiring Minds is a platform which provides Massive Open Online Courses for each level whether it is school or higher education level. A list of SWAYAM courses categorized by subject are as follow:

| S. No. | Subject              | No. of Courses |
|--------|----------------------|----------------|
| 1      | Humanities           | 52             |
| 2      | Mathematics          | 55             |
| 3      | Programming          | 18             |
| 4      | Computer Science     | 54             |
| 5      | Health & Medicine    | 11             |
| 6      | Social Sciences      | 72             |
| 7      | Data Science         | 12             |
| 8      | Education & Teaching | 27             |
| 9      | Personal Development | 10             |
| 10     | Science              | 153            |
| 11     | Engineering          | 194            |
| 12     | Business             | 96             |
| 13     | Art & Design         | 16             |

**Source:** <https://www.classcentral.com/report/swayam-moocs-course-list/>

SWAYAM is coordinated at national level by nine coordinators that are as follow:

- a) **NCERT:** National Council of Educational Research and Training is for school education from 9<sup>th</sup> to 12<sup>th</sup>.
- b) **NIOS:** National Institute of Open Schooling is for out of school children from 9<sup>th</sup> to 12<sup>th</sup>.
- c) **CEC:** Consortium for Educational Communication (CEC), New Delhi, is an inter university center of UGC which is for non-technology UG and PG programmes.
- d) **NPTEL:** National Programme on Technology Enhanced Learning is an Indian virtual learning platform for university-level that are science, technology, engineering, and mathematics subjects.
- e) **IIM Bangalore:** Indian Institute of Management, Bangalore is for management programmes.
- f) **AICTE:** All India council for Technical education acts as a National Coordinator for National Resource Centres identified by MHRD under PMMMNMTT so as to prepare Annual Refresher Programme in Teaching for faculty of the Engineering, University and Institutions for Massive Open Online Courses(MOOCs) Development under SWAYAM.
- g) **NITTR, Chennai:** National Institute of Technical Teachers Training and Research is for teacher training programmes various stakeholders gets the benefit of high quality content such as teachers, students and researchers etc. to acquire skills by making use of multimedia resources.
- h) **IGNOU:** Indira Gandhi National Open University (IGNOU) is established by an Act of Parliament in 1985. The aim of this university is to continuously strive for building an inclusive knowledge society through inclusive education. It offers quality teaching through the Open and Distance Learning (ODL) mode.
- i) **UGC:** It was established in 1956 as a statutory body of the Government of India through an Act of Parliament. The purpose of its establishment is to bring coordination, determination and maintenance of standards of higher education in India.
  1. **e-PG Pathshala-** Interactive e-content is provided in the form of module which comprises of e-text and video. The e-content is provided in 67 post graduate programmes that belongs from different disciplines such as arts, social sciences, natural sciences. It also provides access in two modes and that are offline and online.
    - a) **e-Pathya-**It is a software driven course package that provides offline access to learners who are pursuing post-graduation either from distance learning or in campus learning mode.
    - b) **e-Adhyayan-** It provides us e-books for post graduate courses and we can have access of it from e-PG Pathshala content.
  2. **SWAYAMPARBHA-**It comprises of 32 DTH channels in which high quality content is provided which is based on curriculum of courses of diverse disciplines such as arts, science, commerce, social science, humanities, engineering, medicine, law, technology. These channels are free to air and one can access them through cable operator. The archived videos can be accessed through SWAYAMPARBHA portal.
  3. **CEC-UGC Youtube Channel-** It provides access to educational resources in the form of free lectures.
  4. **National Digital Library-** It is a platform which provides vast amount of academic content which is in different format. It provides support to Indian languages for all academic levels which includes learners, different disciplines, and differently abled children/learners.
  5. **Shodhganga-** It is digital repository platform which comprises of huge data of Indian electronic theses and dissertations. It is available to entire scholarly community.
  6. **e-shodh sindhu-** It provides access to current and archive journals, factual database, citation from various publishers.

7. **Vidwan**-It is a database in which information regarding the experts are provided to different stakeholders that are peers, policy makers, funding agencies and research scholars.
8. **INFLIBNET Learning Management System (ILMS)** -It provides learning content to higher education institutions on the basis of their request.
9. **YUKTI (Young India Combating COVID with Knowledge, Technology and Innovation)** -It is a portal which comprises of initiatives of Ministry of Education and it also covers various dimensions of COVID19 challenges in a holistic way. The objective of this portal is to ensure that stakeholders in higher education institution will get the support which is required for the up gradation of technologies.
10. **National Repository of Open Educational Resources (NROER)** -It is a digital repository which comprises of resources for school and teacher education. It provides access to different sources such as e-courses, e-libraries and also helps us in participation in various online events.
11. **DIKSHA (Digital Infrastructure for Knowledge Sharing)**-It provides assistance to teachers so that they can learn and train themselves. This initiative is vital to improve the quality e-content for teachers.
12. **ePathshala**-It has been developed by NCERT for providing e-resources such as books, audio, video and other print and non-print materials.
13. **Vidya Daan 2.0**-It is a contribution by Ministry of Education in which different types of content are there such as lesson plans, videos, practice questions etc. For classes I to XII in different subjects.
14. **One India One Digital Platform**-It is a platform which provides content and multimedia for classes I to PG level which can be accessed.

### SOME FREE EXTERNAL REPOSITORIES OF DISTANCE LEARNING SOLUTIONS

Various educational applications and resources has been suggested by UNESCO which will help various stakeholders such as learners, parents, schools and teachers so as to facilitate students learning. The resources are free in nature and are also available in multiple languages. The resources are as follow (Kumar, 2020):

- **Brookings** – It is a catalogue of nearly 3,000 learning innovations. Out of these learning solutions some of them are for distance learning while other offers digital education content.
- **Common Sense Education** – This platform provides tips and tools to support school closures and in transitions to online and at-home learning.
- **Commonwealth of Learning** –These acts as a resource for stakeholders like teachers, parents, learners, policymakers, school and college administrators where assistance is provided in student learning during the pandemic.
- **Ed Surge** – It is said as Community-driven edtech products, which comprises of distance learning resources for students and teachers, and covering primary to post- secondary education levels.
- **Global Business Coalition for Education** – It is list of virtual learning platforms, information dissemination platform and communication platforms.
- **Keep Learning Going** – This platform is extensive collection of free tools, strategies and tips for teaching through online mode from a coalition of USA-based education organizations.

### NATIONAL EDUCATION POLICY, 2020 AND ITS EMPHASIS ON VIRTUAL RESOURCES

In National Education Policy, 2020 the efforts are being made on availability of e-resources. The need of technology has been acknowledged, as it has been mentioned in NEP, 2020 that education plays a vital role in transformation while on the other hand technology is important for improvement of educational processes, therefore both education and technology have bidirectional relation with each other (Ministry of Education, 2020). It has also been recommended that National Educational Technology Forum (NETF) must be set up, where free exchange of ideas about use of technology will be there for the purpose of enhancing learning, planning and administration, for all the levels of education that is from school education to higher education. Virtual labs will be developed and e-courses in different regional languages will be developed.

### GLOBAL INITIATIVES: IN CONTEXT OF E-RESOURCES

In order to support student's learning, different e-resources are provided such as educational televisions, worksheets, textbooks and online instructional materials. According to Reimers & Schleicher (2020), the tools used by Organisation for Economic Co-operation and Development (OECD) and other countries during school closures were virtual platform. Commonwealth of Learning (COL) has the feature to share its resources with stakeholders so that the doors are open for learning. During the closure of educational institutions, list of resources has been provided to various stakeholders such as teachers, students, parents, school and college administrators which provides assistance to students in their learning (Commonwealth of Learning, 2020). Different virtual learning platform such as BYJU's provide free access to their services (World Economic Forum, 2020).



## DISCUSSION AND CONCLUSION

In 21<sup>st</sup> century era, online mode of teaching is said as the prominent method of distance learning. Online mode of teaching is adopted for keeping students and learners engaged during the lockdown and also helps them in maintaining social distancing. Different learning platforms are initiated by Govt. of India which are also been recognized by UNESCO and World Bank. As pointed out by Organisation for Economic Co-operation and Development (OECD), 2020, the learning platform are needed to be relevant so that it is able complement student and teacher relationships (Schleicher, 2020). As per India Report-Digital Education (2020), ICT plays a vital role in enhancing the effectiveness of virtual resources which are used during the COVID-19 lockdown. As per Press Information Bureau Report (2020), the list of e-learning resources comprises of best practices which are adopted by centre and states and it also identifies challenges which are to be dealt and innovative virtual learning resources are developed for the learner's benefit.

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