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OPEN EDUCATION: EDUCATIONAL RESOURCES AND INFRASTRUCTURE IN INDIA

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ABSTRACT:

Education is fundamental right of every human being. Quality and affordable education is required for the upliftment of the society. The education should be accessible to all and should get equal opportunity to grow. Therefore open education and open educational resources plays important role in reaching to masses. Indian government and national institutes are continuously trying to create OER and infrastructure. SWAYAM, NPTEL, ePGPathshala, epathshala, NDLI are some projects undertaken by the IITs, IFLIBNET, NCERT etc. These resources are helpful learners across the country in getting access to quality content developed by the experts.

INDEX WORDS: Open Education, Open Educational Resources, OER

INTRODUCTION:

Education is fundamental right of every citizen. Education helps in the mental, moral, economic and social upliftment of the society and also helps in the developing responsible citizen. The growth of any country mostly depends of the education infrastructure developed by that country.

According to UNESCO 'Education is a basic human right that works to raise men and women out of poverty, level inequalities and ensure sustainable development (UNESCO)'. So every human being should get quality and affordable education and opportunity for lifelong learning. Education is the powerful weapon that helps human being to fight against poverty, illiteracy and injustice.

According to Dr. A. P. J. Abdul Kalam, "Mission of Education is the foundation to ensure the creation of enlightened citizen who will make prosperous, happy and strong nation (Sparc)".

There is need to develop a strong education system, quality educational resources and infrastructure across the country to provide education to each and every individual of the country. Open education ecosystem can be developed to provide quality education without any barriers. Scenario of education system is changing gradually. Government of India, IITs, IIMs, and many institutions of national importance are developing the infrastructure to provide open educations in India.

WHAT IS OPEN EDUCATION?

Open Education encompasses resources, tools, and practices that are free of legal, financial, and technical barriers and can be fully used, shared and adapted in the digital environment (Inamorato dos Santos, Punie, & Castaño , 2016)..

The European Commission defines open education as "a way of carrying out education, often using digital technologies. Its aim is to widen access and participation to everyone by removing barriers and making learning accessible, abundant, and customisable for all. It offers multiple ways of teaching and learning, building and sharing knowledge. It also provides a variety of access routes to formal and non-formal education, and connects (Cronin, 2019)."

Thus the term open education is umbrella term. It involves the creation of high quality educational resources, education and guidance from experts, opportunities to learn together without the legal, economic, physical and social barriers.

Common features of open education (University Grants Commission Distance Education Bureau)

- **access** education, open educational resources, open textbooks, and open scholarship
- **collaborate** with others, across the boundaries of institutions, institutional systems, and geographic locations
- **create** and **co-create** knowledge openly
- **integrate** formal and informal learning practices, networks, and identities

OPEN EDUCATIONAL RESOURCES (OER):

Open Educational Resources (OER) are free or open content that are available online and can be accessible without any restrictions.

According to David Wiley (Wiley), the terms "open content" and "open educational resources" describe any copyrightable work (traditionally excluding software, which is described by other terms like "open source") that is either (1) in the public domain or (2) licensed in a manner that provides everyone with free and perpetual permission to engage in the 5R activities:

- Retain – make, own, and control a copy of the resource (e.g., download and keep your own copy)
- Revise – edit, adapt, and modify your copy of the resource (e.g., translate into another language)
- Remix – combine your original or revised copy of the resource with other existing material to create something new (e.g., make a mashup)
- Reuse – use your original, revised, or remixed copy of the resource publicly (e.g., on a website, in a presentation, in a class)
- Redistribute – share copies of your original, revised, or remixed copy of the resource with others (e.g., post a copy online or give one to a friend).

Open educational resources (OER) are teaching, learning, and research materials intentionally created and licensed to be free for the end user to own, share, and in most cases, modify. The term "OER" describes publicly accessible materials and resources for any user to use, re-mix, improve, and redistribute under some licenses. These are designed to reduce accessibility barriers by implementing best practices in teaching and to be adapted for local unique contexts (Wikipedia)..

According to Butcher, OER includes educational resources like textbooks, curriculum maps, course materials, streaming videos, multimedia applications, podcasts, and other learning & teaching materials that are openly available for the use of students and teachers without the need to pay royalties or license fees (Butcher, 2015).

OPEN EDUCATION AND OPEN EDUCATIONAL RESOURCES (OER) INITIATIVES IN INDIA:

The role Open education and Open Educational Resources in the overall development of the country is widely acknowledged. Considering the importance of OER many developing nations including India have taking initiative in creating a strong system for developing quality OER. National Knowledge Commission, University Grants Commissions, National Association of Software and Services Companies and many other advocacies, advisory and policymaking bodies in India are supporting the cause and bridging knowledge and skill gaps (Das, 2008) and (Ghosh & Das, 2007). The Government of India has recently introduced National Education Policy 2020. The policy has also emphasized the necessity of creating online teaching and e-learning platforms such as DIKSHA, SWAYAM, SWAYAMPRABHA etc (Ministry of Human Resource Development, Govt. of India). Since last decade many universities, IITs, IIMs and other national institutions are engaged in developing and providing wide access to OER.

Major initiatives of Open Education and OER platforms are as follows:

1. NPTEL (National Programme on Technology Enhanced Learning):

NPTEL (National Programme on Technology Enhanced Learning), is a joint venture of the IITs and IISc, funded by the Ministry of Education (MoE) Government of India, and was launched in 2003. NPTEL currently offers more than 600 courses in about 22 disciplines. It provides more 56000 hours content, out which 12000 hours content is translated in regional language. More than 1 crore 60 lakh students have enrolled for the courses since 2014.

2. SWAYAM

SWAYAM is a programme introduced by Govt. of India and designed to achieve three fundamental principles of education policy viz. access, equity and quality. The courses are designed for the students of class 9 to PG programmes. The courses hosted on SWAYAM are in four quadrants- video lectures, specially prepared reading material, self-assessment test and quizzes and discussion forum. The content are developed by nine National co-ordinators like NPTEL, UGC, NCERT, AICTE, IGNOU etc.

3. DIKSHA (DIGITAL INFRASTRUCTURE FOR KNOWLEDGE SHARING)-

DIKSHA is the 'One nation: One digital platform' for school education in India developed by NCERT in 2017. The portal gives access to engaging material developed for students, teachers and parent. It has content available in 18 languages including English.

4. SWAYAMPRABHA-

The SWAYAM PRABHA is a group of 40 DTH channels devoted to telecasting of high-quality educational programmes on 24X7 basis using the GSAT-15 satellite. The content for these channels is developed by NPTEL, UGC, AICTE, CEC, IGNOU, IIT Mumbai, Delhi, Kanpur etc. The web portal is maintained by INFLIBNET centre. These channels are developed to cater the needs of school and higher education. These channels also help in study and preparation of college entrance exams and job oriented competitive exams.

5. National Digital Library of India (NDLI)-

NDLI is a virtual repository of learning resources sponsored and mentored by Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT). Filtered and federated searching is employed to facilitate focused searching so that learners can find the right resource with least effort and in minimum time. NDLI provides user group-specific services such as Examination Preparatory for School and College students and job aspirants. Services for Researchers and general learners are also provided. NDLI provides contents in 10 most widely used Indian languages. It is developed, operated and maintained from Indian Institute of Technology Kharagpur. Educational materials available from primary to post graduate level. The content is available for all subject areas like technology, social science, law literature, medical etc. The material is available in different formats such as books, audio books, notes, simulations, question papers, solutions etc.

6. e-Pathshala-

e-Pathshala is an initiative of the Ministry of Education, GoI. It is developed for the dissemination of Digital Books and e Contents. Students, teachers, teacher educators and parents can access more than 506 digital books and total 3886 e-resources. These resources are available in multiple languages including Hindi, English, Sanskrit and Urdu. Resources can be accessed through laptop, desktop, tablets and smart phones etc.

7. e-PG Pathshala-

e-PG Pathshala is an initiative of the MHRD under its National Mission on Education through ICT (NME-ICT) being executed by the UGC. It is a gateway to all Post Graduate Courses. The portal gives access to the high quality content in 70 subjects across all disciplines of social sciences, arts, fine arts and humanities, natural & mathematical sciences, linguistics and languages. Each subject has 16 papers and 550+ e-modules. Each module has content in four quadrants- e-text, self-learn, self-assessment and learn more. The content is developed by 5500+ subject experts from central universities, state universities, IIT etc. The portal is being developed and maintained by INFLIBNET Centre.

8. e-Adhyayan-

It is repository of books for under graduate and post- graduate courses. The e-books are being derived from e-textbooks of e-PG Pathshala and SWAYAM.

9. NIScPR Online Periodical Repository

This repository gives access to full text articles from research journals published by CSIR-NIScPR. Full text facility is provided for all nineteen research journals published by CSIR-NIScPR. NOPR also hosts three Popular Science Magazines viz. Science Reporter (SR), Vigyan Pragati (VP) & Science Ki Duniya (SKD) and a Natural Products Repository (NPARR).

10. Virtual Labs-

Virtual Labs project is an initiative of Ministry of Education (MoE), Government of India under the aegis of National Mission on Education through Information and Communication Technology (NMEICT). This project is a consortium activity of twelve participating institutes and IIT Delhi is coordinating institute. Under Virtual Labs project, over 100 Virtual Labs consisting of approximately 700+ web-enabled experiments were designed for remote-operation and viewing. Virtual Labs do not require any additional infrastructural setup for conducting experiments at user premises. The simulations-based experiments can be accessed remotely via internet.

11. Shodhganga-

Shodhganga is a reservoir of Indian theses. It is platform created by INFLIBNET Centre for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access.

12. Shodhgangotri-

Shodhgangotri is a repository of research in progress, Synopses, minor research projects, PG dissertations. Under this initiatives research scholars or research supervisors in universities are requested to deposit an electronic version of the approved synopsis submitted by research scholars to the universities for registering themselves for the Ph.D. programme now it is expanded to MRPs/PDFs/Emeritus Fellowship, etc. The repository on one hand, helps in finding the trends and directions of research being conducted in Indian universities, on the other hand, it would avoid duplication of research.

CONCLUSION:

There is rapid and constant growth in the development and availability of open education platforms and Open Educational Resources since last decade. The Indian government and national educational institutes are trying hard for providing quality education. India is marching steadily towards a developed economy and the education system will definitely play an important role in achieving the goal. Indian government with help of universities, IITs, IIMs and other national institutes is trying to make the use of technology in education. These institutes are trying to provide quality content right from the primary to PG courses.

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