

EDUCATIONAL TECHNOLOGY AND ICT

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Week-05

Lecture-25

Module-25: OER (Open Educational Resources)

Hello dear learners, welcome to SWAYAM-NPTEL course on Educational Technology and ICT. I am Dr. Sarita Anand from Department of Education, Vinaya Bhavana, Visva-Bharati, Santiniketan, West Bengal, India. I am the course coordinator for this course and today the module 25 on OER, Open Educational Resources will be dealing here and this is the lecture 25. The concept covered earlier in the previous lecture e-learning concepts, characteristics of e-learning, principles of e-learning, e-learning tools, 5E model of e-learning and also the need, advantages and limitations of e-learning were discussed.

Now, the introduction about the OER. In today's world where education needs to be accessible, affordable, and sustainable, open educational resources are revolutionizing how we can learn and teach. OER provides treasure to draw free and customizable learning, maintaining, making education fairer and more innovative for both students and the teachers. These openly licensed resources can be freely used, modified and shared by anyone for educational purposes. As important tools for teaching and learning, OER empowers educators to create engaging classrooms and foster active student learning.

This is the right one is the logo of Open Educational Resources by UNESCO and the OER is focusing on the 5 Rs which we will be dealing in next slides. Before exploring about the concept of OER, it is important to understand their evolution. Initially, teachers relied on the audio-visual aids to enhance the teaching learning process while audio visual aids are still widely used in classroom today. They eventually came to known as learning objects.

These led to the development of concept of reusable learning object or the materials which refers to the educational resources that can be reused. For example, if a history teacher creates a PowerPoint presentation on a specific topic, it can be shared online for the use of other history teachers. Reusable Learning Objects or the materials are therefore teaching

and learning materials that can be adapted and reused. However, since RLO are copyrighted, permission from the original authors is required before using them.

Five Rs of OER- the basic concept behind the five Rs of the OER refers to the fundamental rights that users have when engaging with open educational resources. These rights highlight the potential for creative reuse, modifications and distribution of educational contents. These five Rs are Retain, Reuse, Revise, Remix and Redistribute. The Retain, the right to make own and controlled copies of the OER, this includes- downloading, storing and managing the material.

Reuse, the right to use the OER in a variety of ways such as in classroom setting, online classes or in the educational context without restriction. The right to adapt, adjust or modify the available OER to suit your needs, your own requirement of the class. This may include translating to the materials, recognizing it or editing it, fit a particular context or environment or the level of the class. The Remix, the right to combine the OER with the other materials to create something new. This allows creators to mix different resources to create comprehensive lessons or curricula made to their learners.

Redistribute, the right to share the original OER along with any modification or new creation with others. This includes sharing via websites, platforms, social networking sites, allowing the materials to reach a wider audience. So, together these five rights empower educators, students, and creators to not only access high-quality educational materials but also to contribute to and enhance the global knowledge base. Now, we will talk about the historical background of OER.

Without understanding the evolution or the development of OERs, we cannot proceed further. So, the concept of openly sharing educational resources has existed for centuries, with educators collaborating and exchanging materials informally. However, the term 'open educational resources' emerged in the early 21st century. marking a more formal and widespread movement towards open access in education. Here are some historical developments regarding OER.

Since the 1990s, in the early influences, in 1994, the term 'learning object' was coined by Hodgins, laying the groundwork for the development of reusable digital educational materials. From 1993 to 2001, the open-access movement gained momentum. Advocating for free access to research and scholarly publications. People called for open-access resources.

This movement paved the way for similar ideas to be applied to the educational materials. The birth of OERs in 2002 to 2004 in a meeting or the forum of UNESCO where on open courseware defined OERs for the first time establishing a common understanding of these resources. UNESCO given in 2002. In 2001 to 2005 there was William and Flora Hewlett Foundation plays an important role in supporting early OERs initiatives including MIT, Open Course Ware which made course materials freely available on light and Hewitt Foundation worked a lot in this area. OER gaining traction between the 2005 to 2010 where in 2005 the open courseware consortium is founded aiming to expand the reach and impact of open courses materials open courseware consortium.

Then in 2007 OER commons is launched. and as a digital library and platform for the educators to discover and share OERs as per the OER common. Then in, during 2002 to 2010 continued support from foundations and educational institutions fuels the growth and development of OER resources and different initiatives. Beyond early stages At present, OER remains a dynamic field continuously evolving with the evolving needs of the educators and the learners.

Growing awareness of the potential benefit of the OERs leads to increased adoption and integration in the various educational settings including teacher education. Technological advancements and platforms like OER continue OER commons continues to facilitate the discovery creation and sharing of OERs. So, what about the development of OERs in the in India? India's journey with the OERs reflect a growing recognition of the need for affordable and adaptable educational resources.

There are some key stages of OER development in India. The early recognition and pioneering initiatives during 2005 to the 2020s. In 2005, the National Knowledge Commission acknowledged the potential of OERs in addressing the challenges of access and quality in higher education. So, they recommended exploring opportunities with OERs to expand the availability of educational resources. Then, in the mid-2000s, this period saw the launch of influential OER initiatives in India like NPTEL, a consortium offering videos and web courses from the prestigious Indian Institutes of Technology.

This program was called the National Program on Technology Enhanced Learning, and the Indian Institutes of Science demonstrated the potential of OERs in higher education. The INFLIBNET, the Information and Library Network, provides access to scholarly electronic resources, including e-journals and e-theses, promoting open access to research materials for scholars. Focus on sustainability and expansion from the late 2000s to the present. The

discourse surrounding OERs in India shifted towards ensuring sustainability and effectiveness.

Issues like quality control, faculty training, and infrastructure development for wider adoption received growing attention for OER-related issues. The multilingual and multimodal OERs- the concept of multimodal recognition in India's diverse linguistic landscape. Initiatives for promoting OERs in regional languages emerged. Additionally, the focus expanded beyond textual resources to include multimedia formats like video lectures and simulations.

With the increasing use of digital technologies, a large number of educational resources, like learning objects are now accessible online through digital devices like computers, laptops or tablets. These resources are available in public domain as referred as open educational resources. After these developmental phases, now the definition of the OER. any type of educational materials that are in the public domain or introduced with an open license.

The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation. This is the definition given by UNESCO regarding OER. Another definition of OER from the William and Flora Hewlett Foundation, they defined OER as these OERs are teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others.

Open Educational Resources includes full course, course material, modules, textbooks, streaming videos, tests, software and any other tool or material or the technique used to support access to the knowledge. Common wealth of learning also define the open educational resources like they describe that any educational resource including curriculum, maps, course materials, textbooks, streaming videos, multimedia applications, podcast, and any other material that have designed for the use in teaching learning that are openly available for use by the educators and the students without an accompanying need to pay penalties or royalties or license free.

These may be called as OER. Then open commons also define the OER that these are the teaching learning materials that are freely available online for anyone to use whether you are an instructor, student of self-learner. OER can exist as smaller standalone resources that can be mixed and combined to form larger piece of content. or as longer course

modules or full course that can be called as OER. So, thus we can say that the OERs are learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license that permits no cost, access to free, reuse, repurpose, adaptation and redistribution by the others. So open license refers to a license that respects the intellectual property rights of the copyright owner and provides the permission granting the public the rights to access, reuse, repurpose, adapt and redistribute the educational materials. The definition above indicate that the open educational resources are any type of teaching material available in the public domain with an open license. Typically, OERs are online resources that can be adapted, reused, shared and even used for commercial purpose also. In essence of OERs are reusable educational materials.

These resources can range from small items like text audios text audios videos image files larger resources such as textbook or entire course when OER are organized in a logical sequential manner to achieve the specific objective they are referred to as learning object similarly OERs that are developed as a comprehensive course are known as massive open online course which you are availing right now. This SWAYAM course placed in the NPTEL platform is also a kind of OER where only via joining this course you can access the course material freely. There is no cost and you are allowed to study those materials. So, this is also the example of OER.

Types of OER. There are several types of which I have already mentioned that open educational resources include a variety of materials including complete course, course content, module, learning objects, open textbooks, openly licensed videos, some streamed videos, test software, other tools, techniques or resources designed to facilitate access to knowledge are the types of OERs. So, that least is so long I have prepared this list for your reference so that you can identify or call any content as OER by sorting this list.

So, there are learning objects like quizzes, crosswords, puzzle, flash card, animation all can be counted as OER. Audio lectures, audio visual lectures, images, sounds, music, complete course content, open courseware, compilation of educational materials, learning objects, different sound and music, sound effect, background music, complete course content, open courseware, open textbook, open access articles, journals, interactive tools like virtual lab or any LMS having the content. Educational software, database and repositories, these resources are designed freely to access the modified and educational purpose. The database repositories are MARLOT and OER Commons and OpenStax.

Audio lectures, audio visual lectures and images which I have already mentioned may be repeated. For example, of the OERs from abroad, we can enlist many names like DOAJ. In our research classes, we always tell our students at the time of review, please use the DOAJ and DOAB. This directory of open access journals and open access books are very useful for the researchers. So, as the different other mentioned here, like the journal storage, JSTOR, the open access thesis and dissertation, open access knowledge repository by the World Bank, PubMed Central, Project Gutenberg, high wire and list is endless.

So, we can say that Flickr or Pixabay if you are creating the content, YouTube videos and lectures, TeacherTube, SlideShare and other repositories are there which are providing the educational contents freely or partially free which we are having some copyright materials. OERs from India. There are several platforms which are providing the OER in India like I have already mentioned that SWAYAM, NPTEL, NDL, National Digital Library, National Repository of OER, e-PG Pathshala and this list is also long which we had already discussed in the lecture of PM e-Vidya and your NME-ICT project when we had completed that lecture.

In that lecture also I had mentioned that the concept and the resources provided by the government of India can be utilized as a open educational resource. Especially the thesis available in Sodhganga, the spoken tutorial material and other platforms which are providing the e-content like eGyanKosh or one thing I had mentioned forgot to mention that IGNOU e-content there is a app for IGNOU e-content you can avail that content also as an OER. So, identification and use of OER, how to identify any content that this can be utilized as OER. Technology offers both the teachers and the student's opportunity to access the variety of open educational resources available online, no doubt.

But the teachers can use OERs for the instruction while students can utilize them as a supplementary material to deepen their subject knowledge. But question comes, however, the main challenge behind this that how to find out the OERs which are suitable for teaching and learning. It is important to exercise caution when identifying the right OERs. OERs can be generally found on any website. So, one can use common search engine like Google, Bing or Yahoo to locate them or you can also find OERs by using special Google search or Google Scholar.

So, to refine your research, click on the advanced search in Google. And select the desired usage rights from the available options. This will filter your results to include only those resources that are legally permissible for you to use. Once you have made your selection,

save your preferences and proceed with the Google search for OERs. However, because the worldwide web contains an overwhelming number of educational resources, it can sometimes be challenging to pinpoint the relevant OER for you.

So, we always suggest to our students during their research work to use Google Scholar or the BASE search engine, which is the Bielefeld Academic Search Engine. These platforms provide OERs. Specifically in your field. Another widely used method for finding OERs is by searching through OER repositories. These repositories are websites that store digital materials, including e-texts, audio and video files, multimedia content, and more.

Essentially, OER repositories are platforms where various types of educational resources are kept. There are numerous OER repositories available on the internet, such as NROER from India, MERLOT, Wikipedia, TeacherTube, and YouTube, among others. To make the search process easier, specialized search engines can be used. These search engines are designed to locate educational materials more accurately by filtering the vast content available and providing only OERs. Below are some examples of specialized search engines for OERs.

If you are searching for the OERs, go for these search engines like OER Commons. A large and well-known repository specially designed for the OERs is the OER Commons. Includes a wide variety of resources like textbooks, lesson plans, images, videos etc. It allows for filtering of by the subject, by the grade level or by the license. You can go through the oercommons.org and you will find the suitable OER for your use.

Either you are teacher for the content creation or the student for your remedial learning. Marlotte, Marlotte is also focusing on the quality assurance OERs, particularly those reviewed by the educators. Strong in higher education and professional development resources are available here on the platform of Marlowe. OpenStax is also a very important search engine for the OER. It is world's largest publisher of open educational resources and a provider of interactive learning technologies and education search for high school to college level.

This is a non-profit initiative for Rice University. Openstatx.org you can go through and search it. Project Gutenberg, I have earlier mentioned at the time of overview. A vast collection of free e-books primarily in the public domain and a good source of classic literature and other older texts are available in the Project Gutenberg. Creative Commons Search.

This search engine also allows you to find openly licensed content across various platforms including Flickr, Pixabay, YouTube and SoundCloud. This Flickr and Pixabay provides the free pictures, images, graphs to help us in our content creation. These contents are freely available; we can download easily and also, we can contribute our content on these platforms like Flickr and Pixabay helpful for finding images, audio, video for your OER projects which you are going to create. The creative commons org is the website address you can go through it. Then comes the doer directory of open educational resources. This is the repository for open educational resources. from commonwealth universities and educational institutions.

This oasisi.col.org is the website you can go through it and search for the OERs. Then another search engine is DiscoverEd; it is a search engine prototype developed by the creative commons to explore metadata enhance search engine especially for OER. So, you can go through this also. Now, if we want to create the OER, so what we have to do for the OER creation? As teachers, we often create lesson plans and teaching aids for instructional purposes.

With the advent of the concept of OERs and knowledge sharing, teachers now have the opportunity to share their teaching resources with the public. This allows others to benefit from the materials created by someone else anywhere. Sharing resources enables others to make use of your teaching aids. However, it is important to note that the creator retains the right to decide how their resources are used by others.

So, there may be some copyright or patent issues. Issues can arise, but definitely, if OERs are available and we can produce our content as OERs, that will be beneficial for society. This is where the license becomes crucial. When sharing teaching materials, the creator attaches a license to specify how the material can be used. The most commonly used license is the Creative Commons license when you create a resource and apply an open license, it becomes an OER, allowing the public to use, distribute, remix, and create new material based on the license terms attached. So, what is CC licensing?

Creative Commons licensing: These Creative Commons licenses give everyone, from individual creators to large institutions, a standardized way to grant the public permission to use their creative work under copyright laws. From the re-user's perspective, the presence of a Creative Commons license on a copyrighted work answers the question: What can I do with this work? This provides information on how I can utilize any OER available in the public domain.

So, the CC license options are there for to use the OERs. There are 6 different license types listed from the most to least permissive here. The first one is attribution by other may be distribute, reuse, remix and built upon the material in any medium for or format so long as distribution is given to creator. share alike basically if you remix adapt built upon material you must license the modify material under the identical terms. Non-commercial this is another term only non-commercial uses of the work are permitted that is called NC and another term we use that ND no derivative or adaptations of the work are permitted. These are the four terms we use in the CC licensing. The most open license is CC BY which allows the most freedom for others to use your work as they want. The most restricted license is CC BY NCND which allows others to only copy and distribute the work in its original form for non-commercial purposes only.

So, if we want to understand the CC licensing these are those six types. The first one is attribution CC BY we can use it as it is as we want, then the CC by SA share alike, then attribution by non-derivative CC by ND, then CC by NC that the it allows with no commercial non-commercial distributions and CC by NC SA. Non-commercial share alike licensing and the last one is the most restricted one is the non-commercial and CC by non-commercial and non-commercial non-derivative license where you have to only copy and share, but you cannot change anything in this kind of license. So, when you are going to use search it properly and use as per the instruction.

Now, in conclusion, we can say that OERs represent a transformative shift in the landscape of education by providing free, openly licensed materials that can be used, shared, adapted, and redistributed. The growing availability of OER supports a more equitable and accessible education system. Enabling both teachers and students to engage with high-quality content without financial barriers.

Through OERs, educators have the flexibility to tailor resources to their specific teaching context, while students can access supplementary materials that enhance their learning experiences. However, the successful use and creation of OERs require careful attention to licensing, ensuring that creators retain control over how their work is used while allowing others to benefit from it under specific terms. Here are some references for your further reading. You can go through the links I have given on the slide, and happy learning.

Thank you.