

EDUCATIONAL TECHNOLOGY AND ICT

Dr. Sarita Anand

Department of Education, Vinaya Bhavana

Visva-Bharati, Santiniketan

Week-11

Lecture-52

Module-52: MOOCs-mooKIT and SWAYAM

Hello dear learners, welcome to the SWAYAM-NPTEL course on Educational Technology and ICT. I am your course coordinator, Dr. Sarita Anand, from the Department of Education, Vinaya Bhavana, Visva-Bharati, Santiniketan, West Bengal, India. Today, we will talk about Module 52 on MOOCs, and while discussing, we will also cover mooKIT and SWAYAM. This is Lecture 52, and before going into the topic, we will review the concepts covered. We have already covered digital infrastructure and discussed DIKSHA, digital infrastructure in schools, and digital infrastructure in higher education institutions. We have also elaborated on and discussed DIKSHA and visited the DIKSHA platform. We have seen the future possibilities of digital education in India.

Now, we will talk about the concept of MOOCs. You already know that the rapid advancement of digital technology has changed and influenced the entire education system, leading to the emergence of online learning platforms. Among these, Massive Open Online Courses (MOOCs) are reforming the educational scenario by offering face-to-face or online virtual learning. They provide free and accessible learning opportunities to a global audience. Before MOOCs, we only had face-to-face teaching and learning facilities. MOOCs have provided education for the masses on open online platforms and introduced web-based learning designed to accommodate an unlimited number of participants with open access to educational content.

Right now, if you are pursuing this course, you are following India's MOOCs. Beyond conventional learning materials like recorded lectures, reading materials, and problem sets, many MOOCs incorporate interactive elements, including discussion forums and social media interactions, fostering engagement. This engagement occurs between learners, instructors, and teaching assistants (TAs) in a collaborative manner. When discussing

MOOCs, there is also a provision for feedback, quizzes, and assignments. MOOCs represent a significant advancement in distance education, initially introduced in 2008 and gaining widespread recognition in 2012, often referred to as the 'Year of the MOOC.' Early MOOCs, known as cMOOCs (connectivist MOOCs), emphasized openness by allowing content reuse and remixing through open licensing. In contrast, later xMOOCs (eXtended MOOCs) maintained free access for learners.

restricted content use through closed licensing models. So, we know that the MOOCs are providing structured courses online, often facilitated by the universities, organizations and experts incorporating diverse pedagogical elements such as video lectures, reading materials, interactive discussions, assessments and all. So, since their inception MOOCs have undergone significant transformation changes shaping modern education in unprecedented way. And when we are talking about the MOOCs definitely, we should see the history of MOOC and it the concept of online learning dates back to the early 2000. But the term Massive Open Online Course was first coined in 2008.

by Dave Carmier and Bryan Alexander during an experimental online course called Connectivism and Connective Knowledge. CCK08, this is very famous course by George Siemens and Stephen Downes. Siemens 2012 used this Connectivism. This course enrolled thousands of participants worldwide and was based on the Connectivist learning principles emphasizing social learning and networked knowledge so the real big breakthrough in MOOCs came in 2012 which was labeled as the year of MOOC which I have also mentioned and it was said by the Pappana of 2012.

During this time major MOOC platforms such as Coursera edX and Udacity emerged offering courses from prestigious universities such as Harvard, Stanford and MIT. We know that MIT has also worked a lot in the field of MOOCs. These platforms gained immense popularity due to their ability to provide high quality education at little or no cost. So, the development of MOOCs has evolved significantly from the past decade and initially they focused on the free open courses, we call it cMOOCs, but their models have diversified over the time and incorporating structured curricula, certification was involved and the monetization strategies definitely when monetization comes the situation changed.

So, the the highlight of their development was year wise I have mentioned that early connectivist MOOCs were cMOOCs since 2008 to 2011 focused on collaborative learning, social networking and knowledge sharing and in next few years expansion of xMOOCs 2012 to 2015 the platform such as Coursera, edX and Udacity popularized instruction-led

video based courses with structured syllabus and syllabi and the third one is monetization and micro-credentials in 2015 and till present the introduction of verified certification professional degrees and corporate partnership are there and MOOCs are working in this area.

So integration with higher education and lifelong learning now in the our present education system and maybe in future also the universities and businesses are increasingly using MOOCs for degree programs, upskilling programs and professional development programs, so this is the image I have taken it from Wikipedia and this is very famous picture to elaborate about the massive open online courses and whenever our initial classes are there we are teaching and talking about the MOOCs we utilize this picture and you can see that this is providing the whole characteristics and scenario of MOOCs that how they are being utilized like open registration is there, open content is there, free of charge affordable real-time and sales page and all these are mentioned here in this image.

So, this is also telling about the if the courses are massive hundred people, thousand, lakhs and maybe ten lakh people can be accommodated on a particular course these can be xMOOCs or cMOOCs which have mentioned that cMOOCs is focusing on the community and connections and the xMOOCs is about the scalability and they are more focused on the monetization. So, as MOOCs have evolved different interpretations of the platform have emerged primarily leading to two distinct types.

Grounded in connectivist learning principles and those following a more conventional courses and differentiate these early adapters and cMOOCs and xMOOCs but definitely there are some other MOOCs are also there which we will see in latter stages and I have mentioned that cMOOCs versus xMOOCs which I have already elaborated that credit goes to the Downes and George and whenever we will talk about MOOC, anybody will discuss about the MOOC, then definitely they will take the name of cMOOCs and xMOOCs and if cMOOCs align with the connectivist pedagogy, emphasizing on the content should be aggregated rather than pre-selected.

Adaptable for remixing and repurposing and designed to evolve for future learning and the other side, the xMOOCs is talking about the structured courses and syllabus and providing the certification and having some source and motivation for the monetization also. Then comes the your xMOOCs in 2011, Stanford University launched MOOCs on artificial intelligence and more than 16,000 students worldwide utilized those MOOCs and this was

a huge success. They rapidly used the lectures, the quizzes and automatic assessment system and minimize the direction, direct interaction between the learner and instructors.

This xMOOCs was also having the work of MIT, began this work and also the Coursera, Audacity and FutureLearn type of platforms were used. working in the field of MOOCs and now the University of British Columbia of Faculty of Education also entered in this field and the digital education platform evolved in large scale massive open online courses.

Now the cMOOCs not only the type of MOOCs is there with the cMOOCs or xMOOCs but also, I have mentioned the address of this page which is showing that the MOOCs is not only two types that is xMOOCs and cMOOCs but also there is DOCC and BOCC it means the distance or the distributed and big open online courses. So, they have defined according to their own way that mentioning that type of MOOCs is basically two types, but also there are four other types of MOOCs are there and you can go through this link and further you can study about these types of MOOCs.

Now, the advantages of MOOC, we all know the advantages of MOOC, but we should try to understand the concept of MOOC that basically that is for the benefit of the learners and teachers and for the academic fraternity. So, there are many advantages we can take it one by one, but we know that this is meant only for the benefit of the academia, like global accessibility, MOOCs break geographical barriers allowing anyone with the internet access to learn from top universities anytime anywhere and good courses are offered there on this MOOCs platform.

Cost effectiveness: most MOOCs are free with optional paid certification for career advancement like in India we are also having the certification we can utilize the SWAYAM courses for our cash promotions the flexibility and self-paced learning definitely we these courses are flexible according to the learners ease their convenience they can go through the courses and the course content the diverse course offering they are huge list of course content related with the different subject stream, STEM fields and other social sciences and humanity fields and just we have to go through the content list of the courses and we can choose our own favorite courses or the liking according to our likings.

So, skill development and career advancement which I have mentioned that we can utilize it for the certification also and if you are not going for the certification, you are not going for the exam registration, then definitely you can learn at least you can study by only registering in the course. The collaborative learning, discussion forums and the peer

evaluation also foster the engagement in this MOOCs platform. So, every digital initiative is having their own limitation.

This MOOCs is also having like high dropout rates. This is very discouraging actually. Many learners enroll but do not complete the course. And in the study of Jordan, it was mentioned that the high dropout rate is very disappointing because the lots of money hard work is spent on the course development, but the large number of students and the learners are enrolling, but they are not going for the certification. The lack of personalized learning many time MOOCs cannot offer individualized feedback like traditional education in face to face and classroom situation.

The digital divide is there, which I have already elaborated. Credential recognition issues: employers or institutions may not always value MOOC certificates equally to traditional degrees. Many times, they ask for practical courses, how you will have the equal distribution of practical subjects and all. These kinds of limitations are there, including limited social interaction. From the learners' perspective, in-person learning face-to-face learning is engaging. Whenever they have a query, they can ask. Here, you can also ask, but whenever your coordinator or the TAs find the time, they will answer. However, getting an immediate answer is not possible, so this is the limited social interaction. Additionally, there are assessment and academic integrity concerns.

Online exams may have issues with cheating and plagiarism. But since NTA is involved here in India, the chances of cheating are very low. Now, we will talk about mooKIT. This is a massive open online course through IIT Kanpur. Actually, mooKIT is for teaching anything to anyone from anywhere. It is not only providing courses but also the platform for offering online courses. So, mooKIT is an open-source platform developed by IIT Kanpur to support massive open online courses. It provides a robust and customizable framework for online learning, designed to facilitate large-scale interactive education. The platform has been widely used in India and internationally, particularly for delivering courses in science, engineering, management, and social sciences.

IIT Kanpur entered the MOOCs space quite early, way back in 2012, with a course on software architecture for the cloud. Since then, there has been a lot of work in this space and not only are they delivering MOOCs, but they are also providing the tools and technologies for delivering MOOCs. One such effort is mooKIT, and this mooKIT provides facilities for teachers and academic people who want to offer their courses. So, the first requirement to deliver a MOOC effectively is a powerful platform. Existing

software in this space is complex to host and manage, complex to change and adapt to local needs, and expects high internet maturity from end users.

So, mooKIT is built to address all these issues. mooKIT is a lightweight MOOC management system Convinced and designed and developed at IIT Kanpur targeting towards developing nations. It has been used in more than 2000 courses so far in India and abroad. And Commonwealth of Learning I have seen many courses they have offered with the using the platform of mooKIT, then what are the features of mooKIT?

This also all the information I have mentioned here these are taken from the website of mooKIT. So, there should not be any plagiarism issue because all these informations are available at the mooKIT platform and I have used this to inform you about the mooKIT. So, it is AI support for video and discussion forum is there, assessment like quizzes and assignment for the evaluation, provides certification, monitor and gain interesting insights as the course progress, it provides the analytics, customizable, adapt to local needs, addition of new features is easy and cost effective. for handling high traffic and lower internet problems and saving its hosting cost, they are the cost-effective platform.

So, if you are interested to offer your course, you can also go through the mooKIT. Other features of mooKIT are that lightweight and scalability which I have mentioned and whatever I have shown there, I have elaborated this in this slide and development and philosophy on what philosophy they are working mooKIT was initiated for the quality education accessible to all unlike other platforms which are the private platforms like Coursera or Adef mooKIT is focusing on the flexibility and openness making it easy for the institution and educators to create and deliver MOOCs without complex infrastructure. So, it follows an open-source approach and institutions to allow them to modify and host their own courses.

So, mooKIT provides an alternative to proprietary MOOC platform by offering greater flexibility to educators and institution. We have seen that edX is also providing the few of the free versions to offer our courses, we can offer our courses on that platform also and how we can use this mooKIT. mooKIT is used by the educational institutions to offer their online courses by the universities and colleges, government initiative platform is used by the government for the large-scale training programs and skill development. Various professional and technical courses are hosted by the, further skill enhancement.

So, mooKIT has contributed significantly in digital education in India, especially in rural and remote areas where internet connectivity is challenged. So, its scalability, mobile

friendliness and interactive features make it strong alternative for commercial MOOC platform like Coursera and edX. So, providing free hosting, real-time analytics, support for offline learning, mookIT has empowered educational institutions, government initiatives and skill development. So, this was all about the mookIT and now we will talk about SWAYAM.

Whenever we talk, illustrate about the MOOC, we cannot complete it without talking about the SWAYAM because SWAYAM is the abbreviation word SWAYAM but the Study Wave of Active Learning for Young Aspiring Minds and you all are aware of this that this is the Government of India initiative and it is having its principles of access, equity and quality. So, education policy is mentioning that equal opportunity for access, equity and quality and this was the goal, objective of the SWAYAM for the teaching, learning, resources to all. Including the most disadvantaged group of the country, they should be benefited with the help of SWAYAM.

It sees, it tries to bridge the digital divide for the students who have here through remained untouched by the digital revolution and have not been able to join the mainstream education of the country. This SWAYAM platform is hosting the all kind of courses starting from class 9 to till post graduation also earlier they have provided. But anyhow they are providing the teacher education program also like FDPs are provided, diploma courses are provided and anyone anywhere can utilize anytime they can utilize these courses. All these courses are interactive prepared by the best teachers in the country and are available free of cost to any learner. More than 1000 specially chosen faculty and the teachers from across country have participated in preparing these courses.

So, this SWAYAM course is working on the basis of four quadrant of the SWAYAM that those four quadrants are video lectures, specially prepared learning materials and self-assessment test and lastly your discussion forum. So, I think you all are well aware of these four quadrants. And if we want to offer any course, definitely we have to be prepared with these three must and discussion forums are maybe live forum we can discuss and we have to be prepared with our answer. So, video lectures, reading materials and self-assessment test should be prepared for the SWAYAM courses. Following these Four-Quadrant completing with the discussion forum, we can go through the courses offered on the SWAYAM.

So, there are the national coordinators to offer these courses, there are at present there are 10 national coordinators. This information is also I should mention that all the information

which I am sharing with you except those graphics which I have made. These informations are very basic information already available at SWAYAM platform. So, these are the 10 national coordinator AICTE, NPTEL, UGC, CEC, NCERT, NIOS, IGNOU, IIM Bangalore and NITTTR and INI.

This INI is the latest one and newest one and you all are aware of NPTEL, which we are following. This is our national coordinator, the National Program on Technology Enhanced Learning for Engineering. It was initially for engineering, as mentioned on the website, but now NPTEL is very flexible and offers courses for social sciences and humanities. That's why I am here with the NPTEL course.

So, these are the categories of courses available on SWAYAM: school education, out-of-school education, undergraduate education, postgraduate education. And non-technical and technical education, which comes under INI. You can see that the national coordinators have a large number of courses and certifications. All this information is also available on the website, and these are free of cost. Courses are provided to the learners.

However, if you are interested in certification, you all know that you have to pay ₹1000. I have seen that UGC charges ₹750 for examination and certification, but normally it is ₹1000, and credit transfer is available. There is a provision for credit transfer, where extra credits can be added. UGC has also mentioned in their Credit Framework for Online Learning Courses through SWAYAM and Regulation 2016, advising universities to identify courses where credits can be transferred to the academic records of students for courses completed on SWAYAM.

AICTE has also issued a gazette notification in 2016 and subsequently for the adoption of these courses for credit transfer. The current SWAYAM platform is developed and maintained by the Ministry of Education and NPTEL IIT Madras, with the help of Google Inc. and Persistent Systems Limited. This is common information also available on the website. So, the advantages of SWAYAM. We know the advantages of SWAYAM: it democratizes the education system, provides free access to high-quality education resources, and reduces disparities. Anyone with internet access can register for SWAYAM courses. Even if they are illiterate, they can still register, as there is no educational barrier.

If they are interested to learn anything, they can register. Bridging the skill gap, this is aligned with the industry requirement also helping the student to enhance the employability by their technical courses completions and affordability and accessibility is also the big advantage because the courses offered at Coursera and edX you should, you must check it

that they are taking so much money after one week they will ask for the payment before that at the time of registration they will take your card number and they will deduct the money but this is not done in the SWAYAM course and they are offering the free content and the information and the learning and only they are asking for the fee for the certification that is the optional. So, the flexibility and self-based learning is there in any MOOC integration with the higher education.

The credit transfer system allows students to count SWAYAM courses towards their university degree. So, there are challenges also if we are talking about the advantages, there are definitely challenges that digital divide, every time I am mentioning we have to go parallelly that digital divide will be their difficulties will be there but we have to solve, try to solve those problems and go ahead.

Low awareness and engagement, definitely this is the biggest issue in our country that there is less awareness or less or no active engagement in the students and many students and the teachers are not showing interest or maybe unaware and they are having the less interest on the courses, so this is the big challenge to motivate them create awareness regarding SWAYAM courses limited industry recognition. Yes many time they do not accept the courses offered here, but now these days they are getting awareness and somehow they are accepting a little bit and the language barrier yes, I have mentioned that the All the courses are good courses on SWAYAM, but having the limitation of language.

Not all the courses are available in regional languages and limiting the outreach of the SWAYAM platform. Like our courses, I am working in Visva-Bhartai, Santiniketan. Most of the students are from Bengali language and they face difficulty regarding the understanding or in the offering course in the English language but anyhow they accepted and they are studying and going through this course and whenever we are talking about the SWAYAM, how we can leave our NPTEL because NPTEL is working towards the MOOC since long and this is our national coordinator.

This NPTEL is a project of MHRD initially, now MoE initiated by the 7 Indian Institutes of Technology, Bombay, Delhi, Kanpur, Kharagpur, Madras, Guwahati and Roorkee along with the Indian Institute of Sciences, Bangalore in 2003, and you can see that this NPTEL is working since long back before the SWAYAM to provide quality education to anyone interested in learning from the IITs. The main goal was to create the web and video courses in all major branches of engineering and physical sciences at the undergraduate and postgraduate level and management courses at the postgraduate level.

Initially this was the aim, but now scenario has been changed and they are becoming more liberal and providing the facility for the social science and humanities and I am the example for that and our course is example for that the highlight of the NPTEL is the largest online repository of the world of courses in engineering, basic sciences and also the selected humanities and social science subjects. Online web portal is there NPTEL and the 471 million views are there. This was till when I have prepared this PPT, maybe this number will be increase in coming days. and most subscribed educational channel of the NPTEL is there and more than 54,000 hours of video content transcribed with the subtitles are available. So, this is the huge repository provided by the NPTEL and whenever I am talking about some topic, I am elaborating the connected or related links.

So, how we can forget our course. Offered at SWAYAM-NPTEL platform and you are following this course and this is the example of MOOCs on educational technology and ICT. Now, we will go through the SWAYAM website. I think it is opening, it will take few second, ok. because you all are the learner of SWAYAM course.

So, I do not think that I need to elaborate anything left, but only one thing I will show you, like you know everything regarding this SWAYAM course, but the newcomer is the INI. So, this is the left over. So, I can discuss about this INI, Institute of National Importance and They are especially focusing on the non-technical courses. So, we can go through the catalogue and we can see that how and what kind of courses they are offering.

Rest of the things you are aware that how to register, how to enrol, now I can, okay. You can see that, what institution is offering. There are two institutions are offering like BHU and Aligarh Muslim University. Earlier I had gone through. that only two institutions are offering their courses.

Most of the courses are from Aligarh Muslim University and now two three other institutions like DAV-PG College, this is also I think under BHU and BHU in Aligarh. So, if you are wanted to or interested to go about the information which I already I have mentioned that these whatever information I had talked about those were taken from this website so there is, there should not be any plagiarism issue and these are the courses you can go filter your courses like course mode, duration, exam date and credits, so many times I suggest my students that go for the courses offered at NPTEL and UGC and you will fulfill your requirement So, this was all about the SWAYAM. I will not take so much time because you all are aware about the SWAYAM.

So, now we can conclude how SWAYAM or MOOCs are contributing. They have played a transformative role in democratizing education, providing opportunities for learners worldwide from their origins in connectivist learning to the structured and monetized model of today's MOOCs, and have continuously evolved despite challenges regarding dropout rates, the digital divide, and credential recognition. With its focus on flexibility, ease of use, and accessibility, mooKIT has significantly contributed to digital education in India and beyond. Whereas, SWAYAM represents a significant milestone in India's digital education revolution by providing free, high-quality courses across disciplines, empowering millions of students, professionals, and lifelong learners.

However, addressing infrastructure challenges, industry collaboration, and language barriers will be crucial for its continued success. As an online learning platform, the new normal is to use provisions like SWAYAM, which plays an important role in shaping the educational future of India. So, I have provided a few references for your further reading. I hope you will go through them.

Keep learning. Thank you.