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10-2021

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Veeranjanyulu, K and Rathinasabapathy, Ganesan, "Design and Development of a MOOC on Information Handling Skills in Teaching, Learning and Research: A Case study" (2021). *Library Philosophy and Practice (e-journal)*. 6471.

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# **Design and Development of a MOOC on Information Handling Skills in Teaching, Learning and Research: A Case study**

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## **1. Introduction**

The advent of Internet, other Information and Communication Technologies (ICTs) continue to create new opportunities and challenges in digital information creation, access, storage and dissemination. While, academic libraries play an important role in teaching, learning and research in higher education; there is a significant increase in the usage of the Internet by the academic community for searching and retrieving electronic information. Thus, it is all the more important for students and scholars to acquire the necessary digital information literacy skills either by formal education or via e-learning.

Further, there is a growing body of national and international evidence demonstrating the positive impact of information and communication technologies on higher education and research. Today, digital pedagogy is promoted in two major ways - enhancing the teaching and learning processes through digital solutions; and by facilitating access to online educational resources (1). Recent studies reveal that lack of information literacy skills in using the Internet can lead to poor learning abilities and research outcome among university students and scholars.

The significant changes brought by the usage of ICTs in the development and usage of Massive Open Online Courses (MOOCs), has also revolutionized distance education. Ever since they are first launched in 2008, MOOCs have gained popularity among students and also working professionals as they help them study at their convenience and time. In this context, MOOCs have gained importance and support among many universities across the globe. Today, there are thousands of MOOCs courses offered by institutes of higher education on various disciplines/subjects including various soft skills which are freely available over the World Wide Web.

This paper is a case study of the initiative taken by the central library, Professor Jayashankar Telengana State Agricultural University (PJTSAU), Hyderabad, India in developing a specialized online MOOC on 'Information handling skills in teaching, learning and research' for the students, scholars and faculty.

## **2. MOOCs and their Importance**

MOOCs are open source learning platforms enabled on the World Wide Web (Internet) mainly by academic institutions. Most of the courses available on MOOC's charge a fee for course certification. These courses are made available through the

internet and are delivered on any device that connects to the internet like a Desktop, a Tablet or a Smart Phone. MOOC's Applications or Apps are specifically developed for Smart Phones and Tablets to enable mobility.

The courses offered are generally standardized in their contents and learning delivery methods. Such courses are designed for mass appeal rather than catering to any specific organizational needs. Most MOOCs offer courses from reputed global universities, thus having standardized course contents, assessments and delivery structures. Some of the prominent MOOC developers are Coursera, edX, Udacity and Khan Academy. In India the Ministry of HRD has launched a MOOCs called as SWAYAM in 2017. SWAYAM caters to the needs of the student community using digital classrooms across India. The National Programme on Technology Enhanced Learning (NPTEL) is a joint initiative of seven Indian Institute of Technology (IITs) and Indian Institute of Science (IISc) for offering various courses on engineering & science disciplines for free.

## **2.1 Characteristics of MOOCs**

- Open to anyone with an Internet connection.
- Self-paced.
- Confluence of variety of students of different ages, nationalities, background, abilities, interests, and English-language literacy.
- Cross learning beyond instructor's teaching.
- Free and credit-less.
- Being offered by elite Universities through partnerships with MOOC provider (such as Coursera).
- Very large and often have a large student enrollment.
- Designed to give students automatic or peer-generated feedback.
- Common duration of MOOC is from 6 to 12 weeks with 24x7 accessibility.
- Most of the content is delivered asynchronously in a video format (meaning students can access it in their own time and at their own pace), with optional synchronous events like webinars/chats which require participants to join in at specific dates/times.
- A standard class becomes in a MOOC a set of videos of 10-15 minutes each.
- Students in a MOOC are usually assessed by multiple-choice questions or peer evaluated assignments.
- General component is the forum, where students can interact/ contribute/ respond others and even handhold fellow students.
- MOOC does not need prerequisites for participating in course.
- Unlike traditional learning, students need not buy any books for these courses, as most of the material is provided within the MOOC content or is linked to open access texts.

## **3. PJTSAU's MOOCs Initiative**

Professor Jayashankar Telangana State Agricultural University (PJTSAU) is the only farm university in Telangana State of India which provides quality agriculture education, location specific research and farmer outreach programs to address the needs of the farming community of the state. PJTSAU envisions itself as a Centre of Excellence, a one

stop destination for agricultural innovation encompassing education, research and extension through all its faculties to empower farmers and rural communities ensuring evergreen prosperity.

PJTSAU has a state-of-the-art central library which caters to the library and information needs of its faculty, students, scholars and policy makers. It has a very rich collection of print and non-print documents such as books, journals, e-books, e-journals, theses and dissertations, bibliographic and full-text databases. The central library is part of a national consortium of electronic resources viz., Consortium for e-Resources in Agriculture (CeRA), KrishiPrabha and KrishiKosh. Almost all the library resources are accessible online over the campus network as well as remotely.

The central library also offers a non-credit compulsory course on "Library and Information Services" to all the PG and Ph.D. research scholars. The main objective of this course is to educate the users on how to access library's e-resources, how to search the databases, and retrieve online educational resources, etc more effectively. Taking cue from this, the PJTSAU library has embarked on developing a unique MOOC on "Digital Information Handling Skills in Teaching, Learning and Research".

### **3.1 The need for a MOOC course**

Digital Information technologies and online access to information resources have created high expectations from library and information services. For researchers, timely and fast access to existing scientific outputs and archived scholarly information on their topic of research is as crucial as current scientific knowledge. To meet these challenges, academic libraries have undergone major transformation over last two decades by adopting new information and communication technologies to deliver the information to the present library users.

Digital resources, digital services and information access technologies continue to create new opportunities, new challenges and new expectations. Union catalogue, digital repository and digital libraries are the new paradigms which have been taken up under E-Granth initiative, taken during the implementation of National Agricultural Innovation Project funded by the ICAR with World Bank support, to facilitate researchers, teachers, students, extension professionals for a limited number of universities. The National Agricultural Research and Education System (NARES) in India has a huge repository of knowledge and information on crop sciences, horticulture, resource management, animal sciences, agricultural engineering, fisheries, agricultural extension and agricultural education.

For strengthening the digital platform for NARES repository by linking various libraries and ensure effective and efficient dissemination of knowledge to the stakeholders, PJTSAU, Hyderabad has submitted a research project entitled "**National Knowledge Management Centre for Agricultural Education and Research (NKMC4AER)**" to the Indian Council for Agricultural Research (ICAR) for consideration under National Agricultural Higher Education Project (NAHEP) funded by the World Bank during November 2017 and the same was approved by the PMC. PJTSAU, Hyderabad was designated as the lead centre, and the following institutes as other Consortium Partners.

1. ICAR – Indian Agricultural Research Institute, New Delhi
2. Tamil Nadu Veterinary and Animal Sciences University, Chennai
3. ICAR – Indian Veterinary Research Institute, Izatnagar

#### **4. Objectives of the Project**

- To act as a Digital Scholarship Centre to specialize on new technologies and tools such as data acquisition, visualization, and digital asset management, digital preservation, training and consultations as a part of the suite of services and resources.
- To Automate Agricultural University libraries using Koha ILMs to facilitate sharing of digital library resources with a unified 'Online Union Catalogue'.
- To strengthen the Krishikosh platform- a digital repository for dissemination of agricultural knowledge generated under NARES to the users.
- To sensitize the stakeholders through capacity building programmes / workshops knowledge management in the networked digital environment and introduce new knowledge delivery models like MOOCs.
- To work on Altmetrics which are complementary metrics to traditional and citation-based metrics and sensitize the stakeholders through capacity building workshops.

#### **4.1 Expected Output**

- State-of-the-Art Digital Scholarship Centre at Lead Centre and Consortium Centres
- Automated libraries with Koha Integrated Library Management System across the NARES
- User-friendly digital repository platform to submit, manage and access institutional repository including theses produced by NARES researchers, faculty and research scholars in compliance with open access policy of ICAR.
- At Krishikosh, researcher can have a unified access to content on all media types thereby making information retrieval much easier and faster.
- Application of bibliometric and scientometric analysis for technology forecasting. This will help in strategic planning of Science and Technology in Agriculture.
- Tools for disseminations of information through mobile app as push notification.
- Advanced AgriCat with more bibliographical records to serve the purpose of a national level Online Union Catalogue accessible 24x7x365 basis which will provide semantic search and retrieval facilities to share library resources across the country

#### **4.2 Deliverables**

- Information Discovery (searching in several modes and using several methods, indexing in a variety of ways)
- Preservation and archiving of valuable knowledge assets of NARES.
- Connecting libraries of the Agricultural Universities & ICAR institutes on a single platform.
- Delivery of data, images in jpg format and texts in usable modes including media streaming;
- Single window to access and share the intellectual scholarly outputs of NARES.

- Improvement in quality of research and academic standards of the intellectual outputs of NARES. It will provide unified, easy, anytime/anywhere access to huge knowledge resources of NARES which is spread all over SAUs.
- Availability of National Level Online Union Catalogue of Major Agricultural Libraries of India in public domain
- Text-mining, Knowledge extraction and analysis;
- Combining digital objects and data to form new views, analyses, and expressions (e.g. overlay of data in geospatial information systems approaches);
- Well trained and confident library manpower to manage NARES libraries.

One of the objectives of the project is to sensitize the stakeholders through capacity building programmes/workshops knowledge management in the networked digital environment and introduce new knowledge delivery models like MOOCs.

## **5. Design and Development of the MOOC**

Under the **National Knowledge Management Centre for Agricultural Education and Research project**, a MOOC entitled “**Information Handling Skills for Teaching, Learning and Research**” has been developed. The aim of this course is to impart practical knowledge and skills to identify, search, retrieve and utilize scholarly information by PG students and Research scholars including Faculty, Scientists and Extension workers of all Agriculture Universities.

### **5.1 Objectives of the Course:**

1. To appraise the students, scholars and faculty about various information resources in agriculture and their organization – classification and indexing including metadata
2. To train students, scholars and faculty to identify, locate, search, retrieve and utilize agricultural information using latest ICTs
3. To equip the students, faculty and scientists to formulate search strategies to effectively retrieve literature for study or research
4. To train students, faculty and scientists to use modern tools such as Internet technologies, OPACs, Search engines, Digital libraries, Citation databases, etc
5. To enhance the research productivity and impact of the university through quality publications and citations.

**Target audience:** This course is aimed at the state agricultural university students, research scholars. Scientists, faculties and extension workers are also eligible to take the course.

**Pre-requisites:** Post-graduate students and PhD scholars; faculty and scientists, with basic knowledge of how to use the Internet and search engines like Google scholar, yahoo, etc.

**Learning outcome:** Upon completion of this course, the participants are able to understand the basic concepts and acquire sufficient knowledge and skills in handling academic information

**Evaluation:** At the end of the course, the participants are evaluated based on their performance in the online examination and an assignment. Those who qualify the test will be given a Certificate of proficiency.

**Course content:** 15 lessons/units under 6 modules each consisting of 60 minutes

**Duration:** 5 weeks each of one hour duration consisting of 15 Video Lectures each 15 - 20 minutes (This is equivalent to 15 Hrs of classroom instruction)

## **Course Content**

The syllabus for this course has been carefully prepared by Library & Information Science & computer science experts based on the current library user needs and challenges faced by them while using the Internet / databases for the required information. Utmost care has been taken to ensure that all the relevant topics are covered, which are grouped under six modules.

### **Module-1: Library & Information Systems & Services**

- 1.** Introduction to Information Sources
  - a) Types of information sources – Primary, secondary & tertiary
  - b) Information medium – print, audio, movie & digital
  - c) Document Types – books, journals, newspapers, reports, ETDs,
  - d) Classification, Cataloging, Indexing & Metadata
  - e) How to use Library OPAC and Library Webpage

### **Module-2: Electronic Information Sources**

- 2.** Online Books, journals and Databases
  - a) Library Subscribed e-Books, e-journals,
  - b) Reference works- Handbooks, Yearbooks, Wikipedia
  - c) Statistical Databases – Indiastat
  - d) CeRA, CABI, Agricat, J-Gate, etc
  - e) Electronic Theses & Dissertations
- 3.** Institutional Repositories
  - a) University Open Access policy
  - b) Introduction to Institutional Repository
  - c) Self-archiving / uploading of documents
  - d) Digital Libraries - Krishikosh

4. Open Educational Resources
  - a) e-Learning portals and courses – NPTEL, etc
  - b) Introduction to Swayam-MOOCs
  - c) ICAR – e-Krishiiksha, PGDTMA, IGNOU

### **Module-3: Information Search & Retrieval Skills**

5. Conducting Literature Survey
  - a) How to Create a Search strategy
  - b) Controlled Vocabulary - subject headings
  - c) Precision and Recall in information retrieval
  - d) How to evaluate information obtained from the Internet?
6. Different Types of Search Techniques
  - a) Basic and Advanced Search
  - b) Using Boolean operators – AND, NOT & OR
  - c) Field-level searches – author, title, keywords
  - d) Limiting search by – language, date of publication & publication type
  - e) Use of Truncation & Wildcards
  - f) Use of Phrases or words within quotations

### **Module-4: Digital Information Literacy Skills**

7. Navigating the Internet (WWW)
  - a) Search Engines – Google Scholar, CiteSeer, etc.
  - b) Federated searching
  - c) Meta Search engines – AltaVista, Dogpile, Lycos, Alltheweb, etc
  - d) Remote Access, Mobile/Wireless Technologies
8. Digital document formats – Conversion & Storage
  - a) Doc, RTF, TIFF, CSV, XLS, PPT, PDF, JPEG, MPEG, MP3.....
  - b) Document conversion tools – Word-to-Pdf, / Pdf-to-Word, etc.
  - c) File compression techniques – RAR, ZIP, etc
  - d) Online Document Storage - Google docs, Dropbox, SkyDrive, Evernote, etc.
9. Information & Communications Technologies
  - a) Use of Social media - Facebook, Twitter, LinkedIn, Google+,
  - b) Use of Internet tools – Blogs, Podcasts, Slideshare, YouTube, Webinar, etc
  - c) Use of Research Networks – Google scholar, ResearchGate, Mendeley,
  - d) How to increase research visibility over the Internet

### **Module-5: Research Communication & Publishing Skills**

10. Academic Publishing
  - a) Academic writing skills - The Art of writing reports/papers
  - b) Publishing in Open Access journals
  - c) Bibliographic Citation Standards – Chicago, APA, MLA, etc
  - d) Reference Management Software – Endnote, Procite, Refworks,
11. Scholarly communication system

- a) Selection of Journal for publication
  - b) Journal Impact Factors
  - c) Highly-cited journals
  - d) OA Journal Publishing Software - OJS
- 12.** Research Databases & Research Metrics
- a) Google Scholar, Web of Science & SCOPUS
  - b) Research metrics – Citation tools & Techniques
  - c) Impact factor, h-index, author productivity, highly-cited journals
  - d) Ranking of Universities based on research quality
- 13.** Ethical Issues in Research & Publishing:
- a) Ethics in Scientific Research
  - b) Intellectual Property and Copyright laws
  - c) Plagiarism and How to avoid it?
  - d) Plagiarism detecting software and their usage

### **Module-6: Open Access and Global Research Networks**

- 14.** Introduction to Open Access
- a) OA Journals and DOAJ
  - b) OA Standards – OAI-PMH,
  - c) OA Routes – Green, Blue, Yellow & Gold
  - d) OA Policies & Registries – ROAR, SHERPA- RoMEO
- 15.** Use of Social Networking Sites
- a) Introduction to Research Networks
  - b) Google scholar, Research-Gate, Academia.edu, Mandelley,
  - c) Unique Author Identifier – ORCID, Researcher-ID, OpenID
  - d) How to Increase the visibility of your research

## **6. Implementation of the MOOC Course**

Successful MOOC needs through planning for which many factors have to be considered in the implementation of MOOC as a platform.

### **6.1 Factors considered for MOOC implementation**

#### 1) Platform Selection

It is a major decision as to which platform should be used to run a MOOC.

- ✓ Identify requirements: Check whether large volume of courses to run on MOOC platform and decide the technology capability to run the same on own or outsourced facilities.
- ✓ Compare available solutions: Decision is to be made whether to join the global players like Coursera, Udacity and host the courses there or join

national platform like SWAYAM to launch your course or decide a platform on your own like edX even MOODLE to run the MOOC.

## 2) Quality attributes to be seen in a MOOC platform.

- ✓ Scalability: It is the ability to increase capacity using a cost-efficient strategy. However, it depends on how many users can the platform handle. One must have an idea of how many students will opt for course and how it changes over time. Previous run studies like number of registered users vs. logged-in users will give an indication of the student population size. Other factor is to estimate number of activities involved in each course like discussion for a live sessions and exams.
- ✓ Usability: The MOOC shall be easy to use, and efficient to use with good navigation, accessibility on multi-devices like mobiles/tablets. Teachers shall find it comfortable to create, manage the content, and initiate and participate in the course.
- ✓ Availability: Credibility of a MOOC depends on its availability across different parts of the world having varied time zones. Software related issues, quick fault detection, strong back-up plan with continuous technical support, and strong infrastructural support.
- ✓ Performance: A good MOOC shall be quickly accessible even during peak traffic and even with users having low bandwidth connections.
- ✓ Interoperability: Browser compatibility, ability to access across different operating systems is also desirable for good MOOC.

## 6.2 The Panning Process

There are four stages in developing a MOOC course: Pre-production, Production, Post-production and Maintenance or Web-hosting. High priority is given to course content and video presentation compared to other factors such as - video format, choice of platform, software tools, evaluation methods, certification, etc.

### Content Creation

It mainly involves recording video lectures. Decide where to record whether in a fully equipped Professional studio or simply in a home studio. Besides, prepare on collect and share any Auxiliary content like video/their links, documents etc. It is important to have Transcript of the planned talk before delivering the lecture to maintain time limits.

Desirable features of lecture video in a MOOC

- ✓ Focus on one topic.
- ✓ Video duration is preferably within 10 minutes.

- ✓ If technology permits, produce video in HD format, but consider file size.
- ✓ Preferably should be in talking head style. And embed the same in the course.
- ✓ Show the speaker face every now and then.
- ✓ Save the final file in a format such as MP4, which can be streamed.
- ✓ If size of file is an issue, explore the options of opening a YouTube channel and publish there

### Technology requirements for MOOC course development

Some of the desirable hardware and software requirements are given below, which are suggestive only. Ensure that the required hardware and software are available for the type of content to be generated and the platform on which it has to be hosted/shared.

#### Hardware:

- ✓ A Moderately good multimedia PC or Tablet-PC with Minimum 8 GB RAM, multi core i7 processor, 2 GB video dedicated RAM, wireless key board, mouse, and microphones.
- ✓ Camera capable of HD recording.
- ✓ Good microphone preferably collar/wireless mike.
- ✓ Tablet for screen annotation, e.g. Wacom Bamboo tablet or similar one.

#### Software:

- ✓ Operating System: Windows
- ✓ Presentation Slides: MS Office suite.
- ✓ Video recording and editing.
- ✓ Camtasia studio works best (Window/Mac)
- ✓ Shooting from a Cell phone-selfie
- ✓ Content capturing software like windows Media encoder, Camstudio, etc.

#### Home Studio:

- ✓ Needs practice to produce good videos as to manage recording by you.
- ✓ Requires more editing time.

#### Typical Problems in using MOOCs

- ✓ Limited scope for live instantaneous discussions and conversations.
- ✓ Poor/no Internet connection at receiver side.
- ✓ Bandwidth and speed sometimes problematic in downloading.
- ✓ Very short period of time (duration).
- ✓ Video content is not of rich quality.
- ✓ Lack of knowledge in using ICT.

### 6.3 Video Formats Identification

An investigation was conducted into identifying suitable video formats for different output devices ranging from mobile phones to desktops. A video of one-minute duration created using video cameras in Digital Video (DV) format was converted into different formats (Using Adobe premiere). The details are as given in Table 2.1.

Testing Environment: Parent Video Format =DV, Windows 7, 4 GB RAM and Quad Core 2.5 GHZ, Display memory: 256 MB

#### Video Conversion Processing Assessment

S. No	Viewable image size in inches	File format	Display resolution (in pixels)	Size (MB)	Rendering Time for 1 min video (in secs.)
1.	3.0315	Web flv	256X144	2.29	25
2.	3.0315	Mobile flv	256X144	2.29	26
3.	6.06	Mpeg 4	352X288	2.38	16
4.	6.14	Flv	512X288	4.52	149
5.	7.12	Mobile flv	768X432	6.75	243
6.	7.12	Wmv	720X576	11.8	122
7.	7.16	Avi	1024X 576	223	50
8.	9.33	Web Flv	1920X1080	55.7	1170
9.	9.33	Flv high quality	1920X1080	77.5	360
10	> 80	HD	1080i	148	109

For 2-D display devices like computer monitors and TVs, the display size (Or Viewable size) is the physical size of the area where pictures and videos are displayed whereas the size of the screen is usually described by its diagonal length. Output devices considered for the study are mobiles in the size range of 3-7 inches, Tablets (6-12 inches), Desktops (14- 20 inches), LCD Screens (40-100 inches). For any Learning Management System like MOODLE, a best video format shall have less rendering time, file size and best display resolution. It may be inferred from the table that:

1. The MPEG 4 format is the one with least rendering time, but its resolution support is very low as the screen size increases. Its supports critically to a range of 3- 6 inches screens, i.e., good for portable devices.
2. AVI format, with 50 seconds of rendering time gave best results for supporting display resolution from 3 inches mobiles to 100 inches LCD screens. But its file size is large i.e. 223mb/min, which makes a file of 13 Gb for an hour classroom.
3. Formats like FLV, Mobile FLV, Web FLV take longer time for rendering even though they are small in size.
4. Considering the optimums for rendering time and file size to support larger resolutions, windows media of 720x 516 resolutions appeared to be a better format for file conversion of raw videos into display format.
5. HD format with 1080i resolution is very good for high quality works but rendering time is very high.

These findings play an important role in identifying the suitable file format for different delivery modes of digital video content- both offline and online.

### **Embedding of Videos**

Since the base format of the project output is in video format, suitable means of accessing the same through web medium need to be identified.

### **Technical specifications**

#### **Moodle Pre-requisites:**

- ✓ Operating System: Windows10 / Linux / Ubuntu
- ✓ Database: MySQL/ Maria DB
- ✓ Platform: Moodle 3.7
- ✓ Customized the moodle website using HTML, CSS, JavaScript, PHP

### **Video Recording Guidelines:**

In order to have a uniform and standard look and feel of all the video including the background power point presentations of the lessons, the following guidelines were adopted and circulated to all the experts:

- 1) All presenters/experts shall plan their lecture in smaller subsections/topics within each lesson of not more than 15-20 minutes on the chosen topic/unit.
- 2) Each presentation shall include
  - A Title
  - Overview
  - Introduction
  - Body / content

- Conclusion
  - Speaker's contact information
- 3) While delivering the lecture, the experts may include animated pictures, charts, photographs, video clips etc., which will support the presentation so as to provide better clarity. The presenter may bring live models if it is convenient. They may bring such material when they arrival at the video recording studio- TELAgE lab of NAARM, Rajendranagar, Hyderabad.
- 4) The following are some suggestions to be followed by the experts while preparing their power point presentations:
- Enclosed two templates which should be used for presentation.
  - First slide is Title Slide, Second Slide onwards subject/content slides.
  - Please use the standard PPT templates sent by PJTSAU.
  - Do not place more than six single lines of text on each slide of the PPT.
  - Use at least 36-point font for headings, 30 point for Sub-headings and 24 for text of body wherever feasible.
  - Do not use punctuation at the end of bullets.
  - Use no more than two levels of bullets per slide.
  - Left-justify all bullets.
  - Animations with noise or other audio should be used sparingly.
  - Use bar graphs and pie charts instead of tables of data, wherever possible.

### **General Guidelines for Experts**

- The writing boards may be used for drawings, calculations, mathematical equations etc. Choose any of the following lecture methods as per your comfort.
- Sit before the computer and face the camera while delivering the lecture
- Stand and use the interactive whiteboard for presentation as writing on ordinary whiteboards
- Completely avoid all the computer aids and use only ordinary whiteboard
- Optimum speed of delivery helps the students to grasp the contents easily.
- Experts may devote as little time as possible for introduction and sum up.
- During the delivery of a class, emphasis should be more on core content of the unit and difficult concepts with simple words (free from technical jargon).
- Avoid any resources downloaded from the Internet if they are copyrighted.
- Bring your/organization's own field videos related to your lecture if required.

### **Dos and Don'ts for Video Recording**

#### **Dos**

1. **Wear dark plain colour clothes (eg., blue, brown, pink, orange)**
2. Use wrinkle free clothing
3. Rehearse your lecture before coming to the studio
4. Have a clear idea on your presentation
5. Use simple words/language if your audience is farmers/rural youth

6. Pronounce properly
7. Concentrate only on camera
8. Stay unmoved and silent for at least 5 seconds before and after the presentation.

### **DON'Ts**

1. Avoid striped dresses
2. Avoid shining/white dresses
3. Avoid multi-coloured dresses
4. Avoid green colour / shade dresses

## **7. Creation and Hosting the MOOC**

In order to develop the above MOOC course, PJTSAU library has identified a select group of experts in library & information science and Information Technology disciplines and held a brainstorming meeting to chalk out the plan of action. During this meeting, the draft syllabus was prepared and later it was revised and circulated to all the experts to choose the lessons they intend to take up for recording. All the experts were given some guidelines on how to prepare the power point presentation using the standard template; and how to appear before the camera for recording the videos, etc.

The experts were also asked to provide a few bibliographic references on each topic/lesson, and at least 10 questions of multiple-choice for students to take the online examination. All the lessons were then scrutinized and reviewed by the course editor and checked for uniformity and consistency of the textual content and presentation. Sufficient care has been taken to avoid copyright issues with regard to the textual matter and images. While recording the videos, it was decided to restrict the duration between 15 to 20 minutes; however, some lessons have exceeded this time limit for obvious reasons.

PJTSAU has taken technical help of the National Academy of Agricultural Research Management (NAARM) for recording the videos in their most advanced, state-of-the-art **TELAge** studio. Although there are many ways of recording the MOOC lessons, PJTSAU has selected a simple presentation format very much closer to the SWAYAM format, which can be played in any standard video player.

The MOOC course has a common introductory video of 2 minutes duration in the beginning, and credentials of people associated with the programme at the end of each lesson. Each lesson has a Title, Overview, Introduction, Body / content, Conclusion, and the contact information of the expert. References and questions are given separately under each lesson.

All the MOOCs lessons are hosted on a Moodle platform in a library web server at the **National Knowledge Management Centre for Agricultural Education and Research, PJTSAU, Hyderabad**

## Conclusion

Massive Open Online Courses are aimed at unlimited participation and open access via the Internet. Free access to large number of MOOCs on various subjects/topics has revolutionized the field of higher education by giving a new learning opportunity for aspiring students, scholars and faculty in universities all over the world. 'Digital information literacy' has acquired greater significance because information in digital form is available in abundance over the World Wide Web; and we need these skills to 'navigate' the web effectively to search & retrieve the required information. Lack of digital information literacy skills among university students and scholars can lead to poor performance and low-quality research. Therefore, applying MOOC to digital information literacy training is considered very useful to colleges and universities in enhancing learning outcome and research quality.

The present case study demonstrates that academic libraries can also successfully design and develop MOOC courses for the benefit of university students and scholars. Such online training modules can also lead to internal skill development and capacity building among academic staff. Availability of open educational resources (OERs) is believed to promote non-formal education which helps in building a knowledge society.

Further research regarding curriculum design, content delivery models, assessment methods, etc., in developing MOOC courses are to be explored to develop a universal model or standard. The author hopes that this case study can be useful for the future development of MOOCs in the field of Library and Information Science.

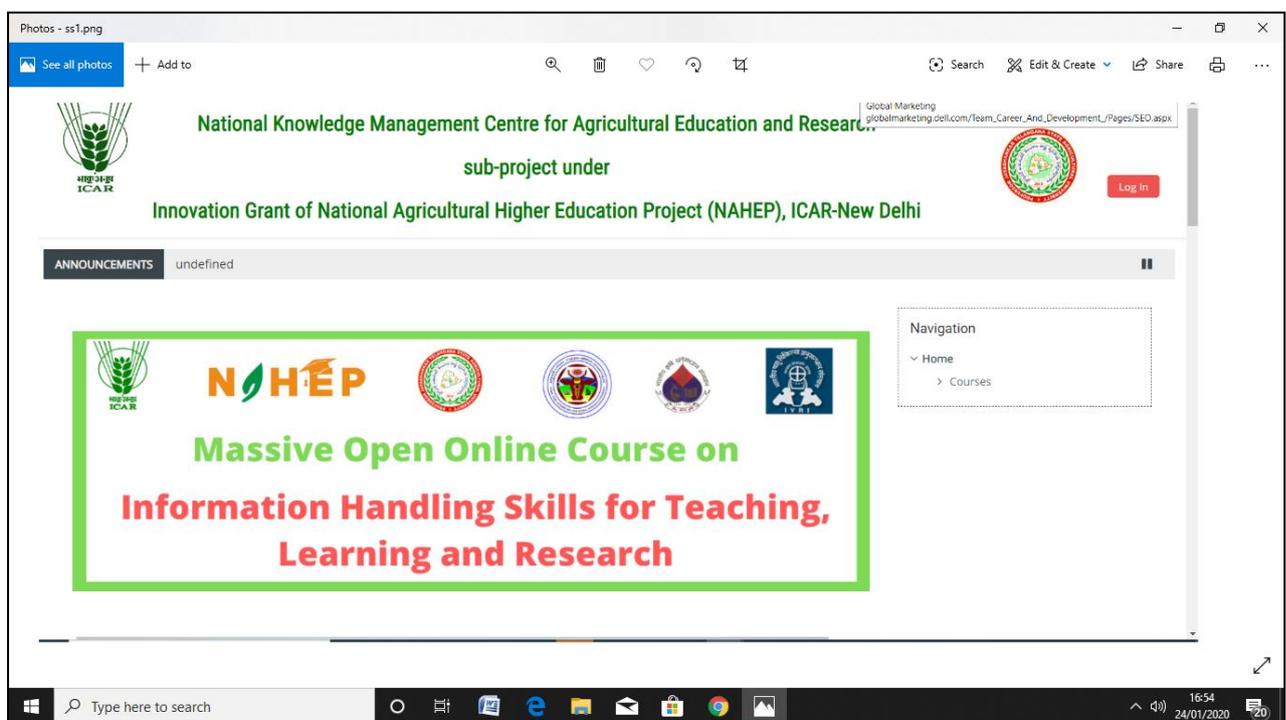


Fig.1 The Homepage of the MOOC on Information Handling Skills for Teaching, Learning and Research

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## Acknowledgements

The authors would like to express sincere thanks to the Director-General, ICAR, New Delhi; the National Director, NAHEP, ICAR; the National Co-Ordinator, NAHEP (IG), ICAR, New Delhi, the Vice Chancellor, PJTSAU, Hyderabad; the Director, NAARM, Hyderabad; Mr Murthy, NAARM, Hyderabad; Dr. M K Rao; and all library staff and officers of PJTSAU for their cooperation and support in executing the project.