Faculty Development Program on Digital Skills and Competencies for Teachers: with Special Focus on MOOCs and E-Content Development

A two-week Online Refresher Course on 'Digital Skills and Competencies for Teachers: With Special Focus on MOOCs (Massive Open Online Courses) and E-Content Development' was jointly organised by the Association of Indian Universities, New Delhi and the Academic and Administrative Development Centre, Academic Staff College, Amity University Haryana during June 09-22, 2023. The course was attended by one hundred and forty-six (146) registered participants from forty-two various universities, colleges, and institutions from across the country.

In her remarks, Dr. Sanjna Vij, Deputy Director, Academic Staff College, Amity University Haryana and Chief Organiser of the event emphasized that in today's rapidly changing world, digital skills have become essential in our daily lives. As educators, it is crucial for teachers to stay updated and equipped with the necessary tools and competencies to effectively navigate digital landscapes. Highlighting the importance of embracing digital skills, Dr. Vij quoted, "Illiterates of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."

Prof Vikas Madhukar, Pro-Vice Chancellor, AUH, during his address, emphasized the need for modern educators to stay aligned with new technological advancements. Prof Madhukar mentioned the importance of incorporating the National Education Policy (NEP) into the academic curriculum. The NEP places particular emphasis on the SWAYAM MOOCs platform, which was created by the All India Council for Technical Education (AICTE) in 2016. Prof. Madhukar emphasized that by embracing these technologies and platforms, educators can create engaging learning experiences and cater to the diverse needs of students in the digital age.

Prof. P B Sharma, Vice Chancellor, Amity University Haryana delivered the Keynote Address and emphasized creating a new-age learning environment within Indian universities. Prof Sharma highlighted the significance of events like this and stressed the need for utmost seriousness. Prof Sharma stated that such gatherings signify the eagerness and determination of the teaching community to prepare for the challenges ahead, particularly in the digital age. In this new age, it is crucial to actively contribute to establishing an educational environment that maximizes the potential of digital tools and technologies in the realm of teaching and

learning. Prof. Sharma underlined the need for teachers to foster an environment that supports three key attributes: innovation, collaboration, and enterprising approach. Prof Sharma also stated the importance of generating new applied knowledge and expressed delight in having esteemed resource persons present during the course.

Dr. Amarendra Pani, Joint Director and Head, Research Division, Association of Indian Universities, Delhi during his address emphasized the importance of AIU's objective to modernize digital education through the introduction of online activities for teachers, such as teaching, learning, and integrating technology into the research and revolution process of teaching and learning. He also addressed the misconception that blended learning is synonymous with video learning. He highlighted the prevailing bias towards traditional learning among teachers, with only a few embracing alternative approaches. His intention is to transform this mindset by advocating for the digitalization of teacher education and the widespread integration of technology in the education sector. He concluded his speech by expressing his strong desire to make significant contributions toward enriching and strengthening our country's digital education.

 Dr. B Shadrach, Director, Commonwealth Educational Media Centre for Asia, Commonwealth of Learning, New Delhi emphasized the significance of understanding the learners and their individual learning styles for educators. During the presentation, Dr. Shadrach discussed the importance of teachers understanding the theoretical grounding of their teaching practices as well as their practical orientation. By having a strong theoretical foundation, teachers can design and deliver effective digital learning experiences for their students. Additionally, understanding the practical aspects of teaching allows teachers to align their digital skills and competencies with the needs of their students.

Dr. Briju Thankachan, Executive Director, Educational Technology Society of India and Ex-Visiting Faculty, Educational Technology, IIT Bombay touched upon the paradigm shift in the education system and introduced the concept of the information age paradigm, which highlights the changing role of teachers from being mere information providers to becoming facilitators of information. Dr. Thankachan also emphasized that in the information age, teachers are no longer the sole repositories of knowledge. Instead, they play a crucial role in guiding students in accessing and critically analysing information. The focus has shifted toward developing skills such as digital literacy, information evaluation, and problem-solving.

The Chief Guest, Prof. S N Sridhara, Vice Chancellor, Hindustan Institute of Technology and Science, Chennai in his presentation 'Revolutionising Education: The MOOCs' provided a comprehensive overview of MOOCs. He delved into the history of MOOCs, distinguishing

between cMOOCs and xMOOCs. Furthermore, he discussed the development of MOOC companies in the United States, such as Udacity, Coursera, and edX, as well as those in Asia, including SWAYAM, NPTEL, and JMOOC, and Europe's FutureLearn, EduOPen, and MOOC.fi. The speaker also highlighted the success story of SWAYAM MOOCs and elucidated the requirements for creating MOOCs. He elaborated on the four quadrants of LMS, which encompassed aspects such as synchronous and asynchronous engagement, E-content, AI-assisted assessment, and peer learning. Additionally, he addressed the issue of attrition in MOOCs and provided insights into the underlying reasons for it.

The Vote of Thanks was proposed by Maj Gen (Dr) J S Dhull, VSM (Retd), Director, Amity Institute of Defence Technology and Deputy Director, ASET, AUH where he expressed his gratitude to all the dignitaries and participants.

In the first Plenary Session, Dr. Sophia Sandeep Gaikwad, Head of the Symbiosis Teaching Learning Resource Centre, Symbiosis International spoke about 'Digital Advance Literacy and Tools for Learning and Teaching'. She explained how revolution took place in the 21st century and how we are moving towards digitalization. She highlighted the skills and their importance in the 21st century which include- Learning and Innovation Skills, Digital Literacy Skills, and Career and Life Skills. She also discussed how Pedagogy is different from Antagogy and what are its key principles. She also discussed the role of technology and how it has transformed the way we live, work, communicate, and interact with the world around us. She summarized that with the right tools at our disposal, we can unlock the full potential of education, inspire lifelong learning, and prepare students for success in the ever-evolving 21st century world.

Dr. Meera Iyer, Amity Institute of Behavioural and Allied Sciences, Amity University Haryana talked about the need for digital literacy of various ICT tools for employability, academic plagiarism, online etiquette, cyberbullying, etc. She also talked about how to make e-content interesting by showcasing it with the help of a demo created with Kreado AI. She also discussed multiple tools that can be used to create interesting e-content like Merge Cube, Nearpod VR, Prezi, Powtoon, Moodle, Miro, Edmodo, etc. She focused on the fact that online content needs to be engaging and must seem interesting to the participant as otherwise, the participant will lose interest in the course.

Ms. Subha Das Mollick, Independent Filmmaker, Visiting Faculty, Aliah University and Maulana Abul Kalam Azad University of Technology, West Bengal talked about the state of online courses being offered by various institutions and private organizations. As per research, not even 5% of the students enrolled for MOOC course, completes it. She shared that students lose interest with time in online courses and discussed the need to design interactive and

interesting course material in order to keep the students actively engaged during the sessions. During the session, she shared various types of templates for designing course material for the MOOC courses. She also pinpointed the need for memes, storyboards, videos, interviews, podcasts, etc. to be included as a part of the MOOC course.

Dr Md Shuhel Miah, Deputy Dean, Brittany University, Malaysia focused on the utilization of digital content creation in the context of communication disorders. He emphasized the need to consider various impairments, including visual, hearing, and cognitive disabilities when designing content. The speaker discussed the SCULPT framework for content creation. It provides a systematic approach to developing accessible content, promoting clarity, organization, and effectiveness. He also addressed the process of converting PDF files to Word documents. Also, issues related to editor, customization, and adaptability of the content. Finally, the speaker concluded by highlighting the latest updates on research.

Prof. A K Verma, Department of Computer Science and Engineering, Thapar Institute of Engineering and Technology, Patiala addressed the audience about Bloom's Taxonomy. It is one of the widely used tools in the field of education to guide curriculum development, instructional design, and assessment strategies. It is a hierarchical framework that categorizes educational objectives and cognitive skills necessary for effective learning and knowledge acquisition. Prof. Verma informed participants about the six levels of taxonomy which are Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation, arranged in ascending order of complexity, with each level building upon the previous one.

Dr Durgesh Tripathi, Associate Professor, University School of Mass Communication, Guru Gobind Singh Indraprastha University, Delhi gave an enriching talk on how education for all is possible and why teachers need to possess basic digital literacy skills, including proficiency in using computers, operating systems, and common software applications. He elaborated on the fact that teachers should be comfortable navigating the internet, conducting online research, and utilizing search engines effectively, as these skills form the foundation for teachers to explore more advanced digital competencies.

Prof. Uma Kanjilal, Pro-Vice Chancellor, Indira Gandhi National Open University, Maidan Garhi, New Delhi started the session with discussions on NEP−2020, Education 4.0, and Education 5.0. The discussion was aimed at identifying the transformations in the present education system. To present the technological trends affecting the education system, Prof. Kanjilal referred to the Artificial Intelligence bucket and explained the role and use of each of

those technologies in the present-day education system. Later, the speaker discussed the 8-instructional design tips for developing e-contents. The participants were told about the digital tools that have evolved to meet the requirements of engaged learning, Storyboard for content development and graphic organizer, eXe-tool for multimedia content development, QR-code-based e-content tools for the social web and Hot Potatoes as testing and quizzing tools to name a few.

Dr Sonam Bansal, Rao Lal Singh College, Sidhrawali, Gurugram, Haryana started her session with the opinion poll about the techno-pedagogical skills in one's day-to-day life. The presentation was focused on the utility of technological tools to enhance teaching-learning pedagogy. The speaker talked about several techno-pedagogical models during her presentation. She further highlighted the pedagogical skills required for effecting the teaching-learning process and outlined the reflection between pedagogy and technology. Later in her presentation, the speaker discussed about several pedagogical models like, the TPack model, SAMR model, RAT model, PIC-RAT model, ASSURE Model, and ADDIE model.

The next Plenary Session was on 'MOOCs Development and Their Relevance in Higher Education'. Prof Manas Ranjan Panigrahi, Director, Symbiosis Centre for Online Learning (SCOL), Symbiosis Skills and Professional University, Pune explained the use of technology to facilitate better learning and training that has been extended to online learning. For lab and experiments, Prof. Panigrahi spoke about VLabs and OLabs available through the internet that can be utilized for laboratory practices in remote locations also. He discussed the challenges in retaining students in online platforms despite several advantages associated with it. Prof. Panigrahi explained briefly all the stages of BASIC MOOC development, the aspects associated with the selection of topics for MOOCs, and covered all parts of intermediary stages of development.

Dr Parveen Sharma, Department of International Foundation Studies, Amity University, Tashkent talked about the changing landscape of education. He persuaded the participants to work more on their skill development rather than obtaining degrees. His mesmerizing talk on the role of technology in meeting the changes in the education scenario was praiseworthy. He talked about ChatGPT, and other GPT language models that are now being used to generate documents of choice automatically. Prof. Sharma introduced Audio MOOCs as the fifth vertical of the MOOC development approach. He deliberated on the importance and usability of audio MOOCs and explained how to make your audio e-content interesting and available to the mass. During the description of PodMoocs, Prof. Sharma mentioned a few essentials to be

included with the podcasts like adding descriptions with the podcasts, adding a link to PDF, etc. Later in his deliberation, Prof Sharma mentioned platforms like Spotify, HubHopper to host the podcasts.

Mr. Jatin Ambasana, United World School of Computational Intelligence (USCI), Karnavati University, Gandhinagar, Gujarat spoke on 'Development and Relevance of MOOCs in Higher Education'. The speaker initiated the session with the introduction of MOOCs and explained the various platforms, challenges, and solutions related to MOOCs. Platforms like Coursera, edx, Swayam, NPTEL, etc. were the highlight during the session. Later, he talked about the challenges such as one-way communication, evaluation of assignments, acceptance of course credits, completion rate, and course quality. He also suggested a few solutions which can improve the effectiveness of MOOCs like QM rubrics and evaluation of MOOCs pedagogy.

Ms Daisy Wadhwa, Head, Department of Computer Science and Applications, Guru Nanak Khalsa College for Women, Ludhiana, Punjab explained the framework and design of MOOCs. She talked about Learner Centric MOOC Model (LCM) which focuses on conceptualizing, creating, and conducting the courses. She also described the components of LCM which are learning dialogs, learning by doing, learning extension trajectories, and learner experiences interaction. She elaborated learning dialogs component in detail and carried out activities to provide better understanding.

The next Plenary Session was on 'Developing E-Content: Creation, Editing and Uploading'. Prof Gaurav Singh, Central University of Haryana, Mahendergarh shared his experience of recording videos and animations for e-content via ppts, images, or videos. He referred to various SWAYAM videos to show the participants the way of placing various kinds of content while creating e-content, discussed the minute details like text colour, background colour, font type, font size, effect of image, etc. to be used in presentations and advised to always use copyright free images only, background sound reduction for audios and videos in e-content. He also talked about gestures, body language, type of clothing for recording videos. For publicising the content and reaching the right audience, he suggested using facebook pages and youtube channels for sharing the e-content.

Prof B S Balaji, School of Biotechnology, Jawaharlal Nehru University, New Delhi described various kinds of e-contents which can be used for MOOCs and also talked about the process one should follow for its creation. He stated that one should first identify the topic to be taught and then gather the information. He also suggested the use of scripts and storyboards while creating videos for MOOCs and advised practicing tele-scripting to excel in creating MOOC videos. Various transcription tools can also be used to enhance the videos. One can opt for

scripted content or an extempore way of creating MOOC videos. Both work for the teachers while creating videos depending on the fact that the teacher is a beginner or expert in the selected topic. Prof. Balaji's presentation intended to explore the most recent trends, strategies, and best practices in e-content development and curriculum design. It covered a wide range of topics, including instructional design principles, digital tools and technologies, learner engagement strategies, and assessment methods.

Overall, the session on the Creation and editing of E-Content provided valuable insights into the evolving landscape of digital education. The participants gained a deeper understanding of instructional design principles, learner engagement strategies, assessment methods, and the integration of multimedia elements. The case studies and demonstrations further illustrated practical applications of these concepts.

The session on 'Open Educational Resources (OER) for Access and Success' conducted by Dr. Fawzi Baroud, Chairholder, UNESCO Chair and Assistant Vice President for Information Technology, Notre Dame University, Louaize (NDU) in Lebanon was aimed to shed light on the role of open educational resources in promoting innovation in digital education and how they can be effectively integrated into MOOC design. The discussions covered various aspects, including the benefits of OER, strategies for identifying and selecting appropriate resources, approaches to designing engaging MOOCs, and examples of successful implementations.

The session concluded with an interactive question and answer session, where participants had the opportunity to seek clarification, share their experiences, and discuss specific challenges and strategies related to integrating OER in MOOC design. The Q &A session further enriched the knowledge sharing and provided valuable insights for the attendees.

Further, the session on 'Interactive Video Making Tools and Interactive Lesson Plan Creation Tools' was

taken up by Dr Ganesh Lokhande, Adjunct Professor (Instructional Design), Symbiosis International University, Pune where he discussed the elements of video components, how teachers can connect to online learners even through the pre-recorded video. He emphasized the rationale of objectives before going to the main content for any given video. He also well explained how Bloom's Taxonomy can relate to the objectives of MOOCs components. In the second part of the lectures, he showed how to create the video by using a video-script writing tool, which was a come up with hands-on practical session.

Dr. Ajith Kumar. C, Professor, SOE, IGNOU talked about the need to create video-enriched e-content. He explained the virtual role of teachers versus offline mode, the pedagogy for digital content for online courses, and how one can divide digital content into different quadrants. He

emphasized the use of LMS and how video lectures can be created in a more effective way to connect with students. Dr. Ajith also explained about Video studios and video-creating software which can help the teachers to create their content. While giving a demo session on developing video content, he mentioned that videos are not only to be created for a tutorial session, but it is a method to get connected with online learners. He explained the different formats of tutorials and how each one can be used for various purposes.

Dr. Sheetal Sharma, Centre for European Studies, School of International Studies, Jawaharlal Nehru University covered the elements of video creation for online mediums. She demonstrated the four-quadrant approach with the help of a dummy module creation. She showed how to prepare oneself physically and mentally for content development. She talked about gaze fixing while content delivery in the online mode and explained the creation of a complete video channel by highlighting the contents in different colors and dividing them into sub-modules or sub-channels, further merging them together.

Dr Aerum Khan, Department of TT and NFE (IASE) Faculty of Education, Jamia Millia Islamia, New Delhi talked about Open Education Resources (OER) and freeware software. She emphasized the use of easy-to-use software and hardware that can be utilized to develop high-definition video content with ease. Dr. Khan gave a demonstration of two easily available freeware tools for video lecture creation. She showed from scratch how PowerPoint 16 can be used to create a PPT that can be further recorded easily and converted into a video lecture. During her demonstration, she also exhibited different aspects of editing and how the existing recordings can be edited to incorporate changes required in the future. The other tool she demonstrated was the LOOM extension available with Chrome. She explained the difference between the two tools in their performance and demonstrated the usage of LOOM by creating a dummy video.

The session on 'Intellectual Property and Copyright Issues Related to E-content' was taken up by Dr. Ilavenil Karunakaran, Assistant Professor, Department of Anatomy, Karpagam, Faculty of Medical Sciences and Research, Coimbatore. The session started with some brainstorming activities for participants, she asked about what can be included in IPR, what can and can't be patentable, and explained the difference between copyright and patent. She guided me well on what things are copyrightable or non-copyrightable and the process of submitting copyright. She also discussed the infringement of copyright, legal binding, and its implementation. She nicely explained the factors in fair use/fair dealing of copyright. She also talked about the ways

of avoiding copyright infringement from the e-content. Participants had the opportunity to learn how to adopt and create open education resource content.

Dr Aerum Khan, Associate Professor, Department of Teacher Training and Non-formal Education, Faculty of Education, Jamia Milia Islamia, New Delhi took the session where she discussed creating open educational resource content (OERC). She showed how to create OERC, which was a come up with hands-on practical session. Participants learned many key points of creating an effective OERC. She also emphasizes creative commons copyright licenses and types of licenses. She explained the tools give everyone from individual creators to large companies and institutions a simple, standardized way to grant copyright permissions to their creative work. After her lecture, there was an interactive discussion session, where participants got the opportunity to clear their doubts and discussed their queries.

Dr Briju Thankachan, Visiting Faculty, Educational Technology, IIT Bombay and Executive Director, Educational Technology Society of India started his session with participants understanding what 'Effective communication' means for learners and what is Ed Tab society. He discussed the fair guidelines for identifying the content online for teaching, conducted an amazing interactive session with multiple-choice questions, and spoke about the Indian Copyright Act, of 1957. Toward the end of the session, some practical activity was carried out with respect to how to find resources online. After his lectures, there was an interactive chat session, where participants got the opportunity to clear their doubts by writing up questions that were answered during the session.

Dr Sarika Chouhan, Chief Academic Officer, Vidyalankar School of Information Technology, Mumbai started her session with the use of copyright in free material in creating online digital content. The use of copyright in free material is a complex issue, especially when it comes to creating online digital content. She emphasized the use of Google Advanced Search as a tool for finding free content that is licensed for reuse. Creative Commons licenses allow users to share and adapt creative content under a variety of terms, including attribution, non-commercial, and share alike. She also mentioned that it is crucial to understand the underlying concepts of attribution and non-commercial when using Creative Commons licensed content. The next session was on 'Pedagogy and Course Delivery: Effective Communication, Use of Multimedia and Interaction Strategies to Facilitate Learning'. Dr. Ajita Deshmukh, Programme Leader, M Sc. E-learning Programme, MIT-ADT University, Pune started her session with what 'Effective Communication' means for learners. She explained content coherent relevance

and how using of social media over video and video over audio and audio over text is more effective. She also familiarized the audience with the usage and importance of emerging technology like AI simulation and AR/VR.

The Plenary Session on 'Enhancing MOOC with Artificial Intelligence, Gamification, Virtual and Augmented Reality' was conducted. Dr Ramesh C Sharma, Associate Professor, School of Global Affairs, Director, Human Resource Development Centre, Dr B.R. Ambedkar University, Delhi started the session by defining MOOCS and shed light on how MOOCs are different from internet resources. He introduced the participants to the origin and platforms of MOOCs. He talked about various AI tools available for classroom teaching language learning, research purposes, and referencing. To name a few are word tune, tome.app, elicit.org. pictory, smart sparrow, etc, humata, looker studio, etc. He engaged the participants by demonstrating the tools like humata and pictory.org.

Dr Yash Paul Sharma, Central University of Kerala began his session with concepts of licensing and copyrights. He described the importance of copyrights in MOOCs and the need for policy direction in MOOCs. Further, he talked about the augmentative and virtual reality of content. The session became more interesting and interactive when he demonstrated the difference between augmentative and virtual reality. He also explained the troubleshooting methods for content reality. Dr. Paul clarified AR core devices and NCERT augmented reality applications.

Mr. Abhishek Kadiyala, Published Author, Researcher, Department of International Relations, Peace and Public Policy, St. Joseph's University Bangalore started with a discussion about Artificial Intelligence and the different types of AI tools that are available with examples. He also talked about the Dos and Don'ts of AI and discussed how can AI be used in open education. Participants learned about the three Cs (Content, Coordination, and Communication) of AI for making effective open resources.

Prof. V P Joshith, Professor, Department of Education, Central University of Kerala began his session with demo classes for participants, discussion on gamification, and how to engage with the content. He showed how to use Blooket and Quizzes, gamified learning tools for the assessment purpose to make exciting learning which was a come up with hands-on practical session.

The session on 'Assessment for Self-directed Learning' was conducted by Dr. Sonam Bansal, Rao Lal Singh College of Education, Sidhrawali, Gurugram. She highlighted the importance of feedback-based e-assessment in digital pedagogy and its impact on enhancing student learning outcomes. Her lecture covered various aspects, including the benefits of e-assessment,

strategies for effective feedback delivery, and the role of technology in supporting assessment practices. The speaker also emphasized fostering student engagement and autonomy. Participants learned how providing meaningful feedback can empower students to take ownership of their learning, set goals, and make progress. Strategies for involving students in the assessment process and encouraging self-reflection were shared. Dr. Bansal also introduced Technology Tools for e-assessment by showcasing a range of technology tools like Rebus Create Club, AI in Education, wisconline, Genially, etc. that can facilitate e-assessment and feedback delivery. Participants gained insights into the features and capabilities of learning management systems, online assessment platforms, and digital tools specifically designed for providing feedback.

Dr. Prerna Mandhyan, Department of Education, D S College, Katihar started her session with a briefing about self-directed learning, its significance in promoting student-centric learning, and its key principles such as Autonomy, Ownership, self-motivation, Flexibility, and Reflectiveness. Then the session moved ahead with how online learning can be incorporated as self-directed learning. Dr Mandhyan suggested tools that support self-assessment and progress tracking such as Rubrics, Self-Reflection Worksheets, learning Portfolios, Self-Reflection Journals, Self-assessment questionnaires, Strengths and Weaknesses Analysis, Goal Setting and progress tracking, Exit Tickets, Student-led Conferences. The speaker emphasized the significance of performance-based assessments, such as presentations, debates, exhibitions laboratory experiments, problem-based learning, and simulations.

 Prof. Kushal Sen, Indian Institute of Technology Department of Textile Technology, Hauz Khas, during his lecture, discussed in detail the impact of NPTEL e-courses in educating learners. He highlighted that before designing an e-course, the teacher must define the learning objectives properly as it defines the focus areas for a student and helps teachers plan and finally evaluate. The speaker gave examples of various courses and discussed different ways of assessing individual learners as well as group learners. Prof. Sen also advised using different types of evaluations: proctored assessments, continuous evaluations, quizzes, tests, open-book exams, seminars, presentations, etc.

Dr Jako Olivier, Adviser, Higher Education at the Commonwealth of Learning, Burnaby, Canada started the session by explaining self-directed learning in detail and its need in today's scenario. He said an environment needs to be provided to the learners to encourage self-learning in them so that they stay motivated, manage themselves, and self-monitor themselves. He also shared various resources for further reading on the 'Self-Directed Learning Series'. He then talked about various approaches to assessments in e-courses from his book 'Learning

through Assessment: An Approach towards Self-directed Learning'. He discussed different types of assessments: summative assessments, formative assessments, self-assessments, peer assessments, tests, examinations, worksheets, portfolios, etc.

The next session was on 'Methods of Evaluating MOOC Effectiveness and Quality Assurance Process'. Dr. Ajita Deshmukh, Program Leader, M.Sc. E-Learning Program, MIT-ADT University, Pune talked about how to choose a topic, what the factors they have to keep in mind, including several factors like selection of platform for uploading materials, targeted participants, permissions of content sharing, and most importantly the budget for developing of MOOCs.

Prof. Anurag Jain, Coordinator (AICTE Coordination Team), University School of ICT, Guru Gobind Singh Indraprastha University, Delhi conducted a session on cyber security and content security including security analysis. He gave guidance on spam, cyber security while choosing online platforms, and ways to get rid of hackers while opting for courses online. He also mentioned that the purpose of MOOCs is quite relatable to the current scenario and what kind of threat we can expect while developing the MOOCs course and how to solve those problems with ease.

Dr. Ajita Deshmukh, Programme Leader, M.Sc. E-Learning Programme, MIT-ADT University, Pune continued the session post-break where she started with the importance of evaluation in MOOCs. She talked about how a single object or task can reflect different objectives and predict various perspectives. Further, she discussed the steps involved in evaluation such as autonomy and outcome perspective. She also explained the impact of digital fatigue on individuals attending MOOCs. She concluded the session by describing the role of quality online course initiative (QOCI) (de1988) and rubrics Google sheet in the evaluation of MOOCs. Challenges in the evaluation of MOOCs were also part of the discussion.

Dr. Kiran Lata Dangwal, Department of Education, University of Lucknow started the session by reflecting on the significance of evaluation in MOOCs and elaborated on the need for learner-engagement metrics, pre-post course assessment, survey feedback, peer review, expert review, and comparative analysis. She also added various procedures to make a standard MOOC. For example, quality assurance standards, social network analysis, learning support mechanisms, scalability, and cost-effectiveness. The need for team members in development was also highlighted during the discussion.

The session on 'Implementation of Technology-Driven Skills for Sustainable Development' was conducted where Dr. Sonam Bansal, Rao Lal Singh College of Education, Sidhrawali, Gurugram started with a poll on Mentimeter to get an idea if the participants are interested in

the creation of MOOCs or not. Dr. Sonam Bansal motivated the participants to create online content and shared with them several details of the free platforms that can be used for creation and publishing. She highlighted the usage of Canvas, mooKIT, and Edmodo tools. In the later part of the lecture, the speaker demonstrated the Canvas tool for the development of MOOCs. The second lecture of the 12th day morning session was given by Prof. V Vijaya Rama Raju, Professor, Department of Electrical and Electronics Engineering, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, Telangana, where he talked about evolution in the education system and moved on the future of education system and the technology that will be driving it. He emphasized the benefits of technology in education and the ease of learning due to it. In the later part of his deliberation, Prof Raju talked about sustainability with a focus on SDG-4 which focuses on quality education. He talked about key technologies like IoT, Data Analytics, Artificial Intelligence, Augmented Reality, Virtual reality, and blockchain Technology. The speaker discussed different aspects of these technologies that can be utilized in education and can make the system more sustainable. He made the session interactive by putting on Poll questions using Mentimeter to capture participants' attention.

During the Valedictory Session, Dr. Parijat Bhattacherjee, Assistant Professor, Amity School of Languages presented the report of the event which was followed by feedback on the mentimeter where participants shared their experiences and gave feedback about the two-week online refresher course. Dr Ramesh C Sharma, Associate Professor, School of Global Affairs, Director, Human Resource Development Centre, Dr. B R Ambedkar University, Delhi in his lecture mentioned the various AI tools like *chartify.ai, gnu.org, graphy.app, avatarify.art, orcid, mapdeduce.com, hemingwayapp.com, noplag.com,* etc. which can be helpful for the teachers to create e-content. Prof Sameer Sahasrabudhe, Professor, Practice (Design), IIT Gandhinagar spoke about MOOCs: Challenges and Opportunities and elaborated on the role of communities of practice in e-content creation. Prof. Sahasrabudhe also expressed the need to create a sense of community and build a community of practice. He also mentioned the open-source resource called Blender and elaborated on how it functions. Dr. Sanjna Vij expressed gratitude to all the attendees and also thanked various committee members who ensured the smooth conduct of the refresher course.