Madhav Institute of Technology and Science, Gwalior

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Computer Science & Engineering and Information Technology

Report

of

ONE DAY IN-HOUSE WORKSHOP

ON

"INNOVATIVE & INTERACTIVE TEACHING LEARNING PRACTICES"

Dated: 15st February, 2020

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With reference to the above mentioned title and order (Ref. No. 09 dated 22.01.2020) from the Director, MITS, the internal workshop was conducted by the CSE&IT department from 11:00 AM onwards according to the proposed schedule. Below is the point by point detail of the workshop:

1. The workshop was initiated by the introductory speech of **Dr. Akhilesh Tiwari** (Head of the Department, CSE&IT). He explained the purpose and objective of the workshop. He mentioned that when we think of innovation nowadays, we usually think of technology. However, in a field such as education, it's just as important to focus on innovations in areas such as psychology, learning theories, and teaching methods. There are many areas where innovations in education will help to improve the system for everyone.

2. After Dr. Akhilesh Tiwari, **Mr. Rahul Anand** (from the department of Biotechnology) highlighted various practices followed at institute level on MOODLE for enhancing the quality of teaching. Besides discussing various practices like providing study material, taking attendance, Assignments and Quizzes on MOODLE, he also shared new ideas like "calculated MCQs" for improving the quality of quizzes and other assessment techniques implemented over MOODLE. He demonstrated all these ideas practically, which further clarified the concepts of participants regarding MOODLE.

3. After him, **Mr. Rajni Ranjan Singh Makwana** (from the department of CSE&IT) highlighted the importance of SWAYAM for enriching the knowledge content of students. In his speech, he mentioned that the realm of education has been engulfed in the effervescence generated by the latest technological upheavals. This has brought about an exalted transformation in the way knowledge is being disseminated to the legions of young minds with an insightful yearning towards learning. The online courses available on SWAYAM facilitates open access and interactive participation by harnessing the prowess of the internet. It confers students with myriad courses of high standards embedded with pioneering technology and industry-driven approach free of cost. He also discussed various practices the institute is following to promote learning through SWAYAM.

4. **Dr. Sunita Sharma** (from the department of Biotechnology) continued the discussion by describing the main features of Flexible Curriculum Scheme, which is currently being followed in the institute. She explained the detailed implementation of the scheme and also described how this scheme is going to help the students to boost their knowledge and grab more career opportunities by choosing industry oriented subjects.

5. Then, **Dr. Sanjiv Sharma** (from the department of CSE&IT) reviewed various practices pertaining to Outcome Based Education. He mentioned that Outcome based education (OBE) is a student-centered instruction model that focuses on measuring student performance through outcomes. Outcomes include knowledge, skills and attitudes. Its focus remains on evaluation of outcomes of the program by stating the

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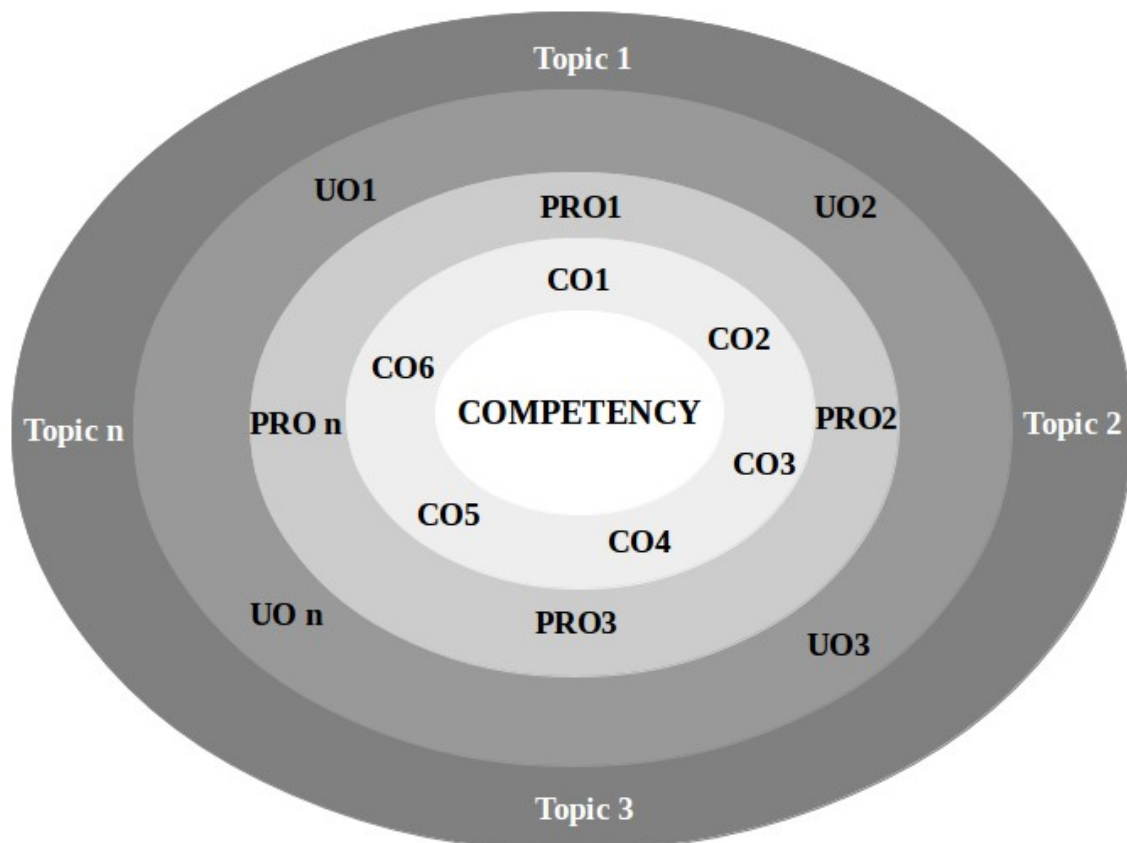## Department of Computer Science & Engineering and Information Technology

knowledge, skill and behavior a graduate is expected to attain upon completion of a program and after 4 – 5 years of graduation. In the OBE model, the required knowledge and skill sets for a particular engineering degree is predetermined and the students are evaluated for all the required parameters (Outcomes) during the course of the program.

6. After him, **Mrs. Neha Bhardwaj** (from the department of CSE&IT) described the student feedback process followed at the institute level. She also explained the importance of feedback for improving the techniques and approach of teaching.

7. By discussing all these practices which are already followed in the institute, a context setting for the workshop was created, also the participants got more insight into these practices, and this also made the guest speaker (Dr. M. A. Rizvi) to understand what we are following and what new needs to be discussed, so as to make the workshop more fruitful.

8. Now our guest speaker, **Dr. Murtaza Abbas Rizvi** (Associate Professor & Head, NITTTR, Bhopal) took the workshop on the next level. In the forenoon session, he explained in detail why we are moving from *"Competency Based Curriculum"* to *"Outcome Based Curriculum"*. He explained in detail the meaning of competency and mentioned that the Competency Based Curriculum had no life-long learning attribute in it, that is why we are shifting towards Outcome based curriculum. He mentioned that an optimal mix of *I.Q. (Intelligent Quotient), E.Q. (Emotional Quotient)* and *H.Q. (Happiness Quotient)* needs to be inculcated in the graduated student for his/her successful career, and this leads to the development of *OBE* (Outcome Based Education), which helps us to achieve the same. He clearly said that now-a-days the outcome of a student depicts the outcome of the teacher who has taught him/her, i.e., the performance of the student is directly proportional to the performance of the teacher. Further in his speech, he highlighted various concepts related to OBE, like *vision* (where institute wants to be), *mission* (strategies to achieve vision), *PO* (graduate qualities of a student), *PEO* (student qualities after 3 – 5 years of graduation), *PSO* (professional qualities of graduates) and *CO* (which describe the competency/course). He also mentioned that for the achievement of PSOs one needs to analyze the jobs available in the market for the students and then decide what skills are required for these jobs, which can then be inculcated in students by defining the various competencies (i.e., subjects) and the competencies can then be achieved using COs. Here, sir gave some suggestions regarding Cos:

● Use one CO for each unit in the course.

● Avoid redundancy in COs.

● COs should not be theoretical-oriented, but should be industry-oriented.

● CO should not be domain – specific.

● All COs should be in the application domain.

Thus, a particular programme can be seen as a collection of various

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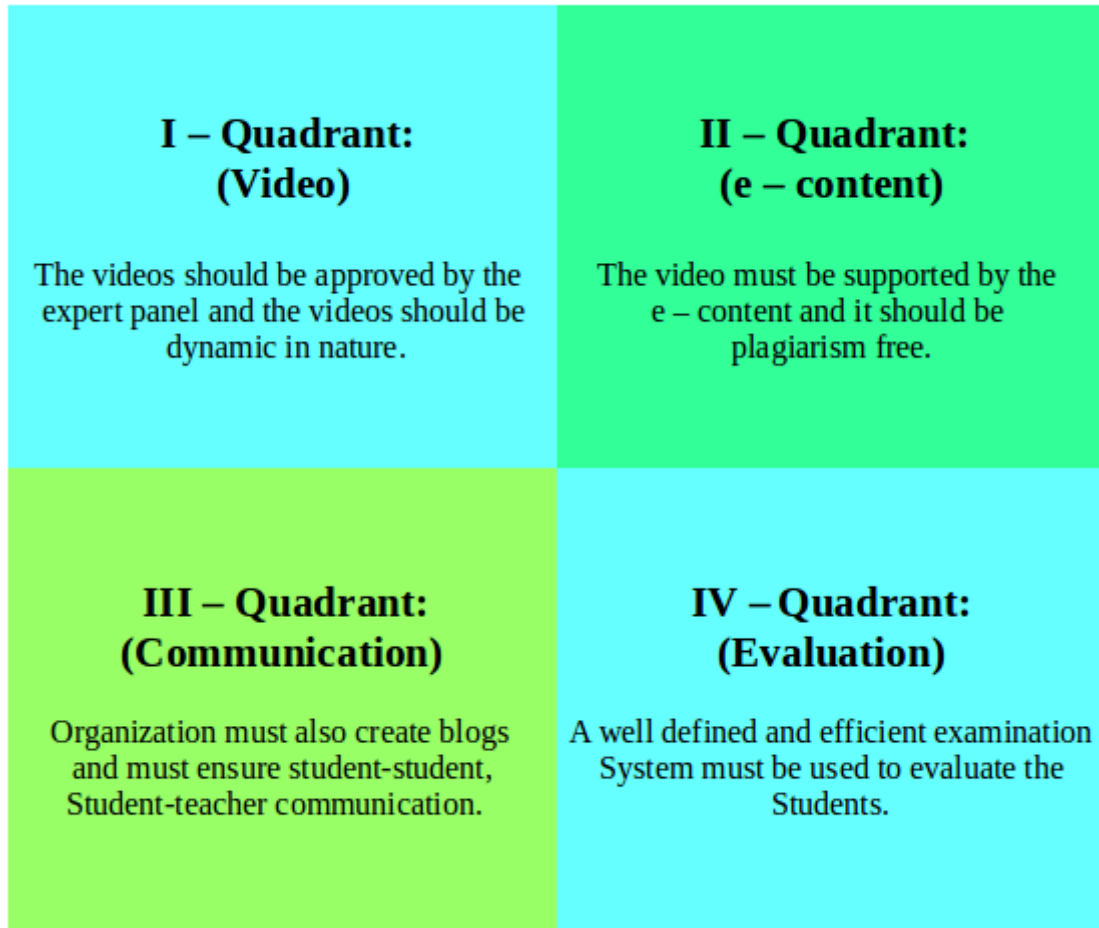### Department of Computer Science & Engineering and Information Technology

competencies. The competencies can be achieved using Cos, here sir introduced new terms like **PRO** (Practical Outcome) and **UO** (Unit Outcome), and said that UOs are in the form of question and belong to a particular unit in a competency, they help to achieve PROs. The complete process can be depicted in figure – 1.

Figure – 1: Process of achieving competency

In the afternoon session, Dr. M. A. Rizvi described various innovative and interactive teaching methods. He mentioned that teaching method is an arrangement of teaching events designed by the teacher to facilitate internal processes of learning in a student, and learning is the change in the behaviour (performance) of the student and is a result of reinforced practice. He also mentioned that students differ from classroom to classroom, which depend on intelligence, temperament, aptitude, physique, cultural background, communication skills and various other factors, and in view of this the teacher must select and use a combination of various suitable teaching methods. Then he also described various teaching methods like: *Deductive method, Inductive Method, Socratic method, Didactic method, Facilitative method, Demonstration method, Roleplaying & Discussion method, Case study & Discussion method, Team Teaching method, Brainstorming, Seminars, practical training* and many more. He also discussed a detailed process of selecting a particular teaching method which can enhance cognitive, affective and psychomotor outcomes in students. At the end he also highlighted SWAYAM for enhancing the knowledge of students. He also described the "*4 – **Quadrant Approach for SWAYAM development**", which attracts more students and makes the offered courses successful. Since MITS is also going to launch its own MOOCs, we suggest using this model for

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its effectiveness. The "*4 – Quadrant Approach for SWAYAM development*" as described by Dr. M. A. Rizvi is shown in figure – 2.

I – Quadrant: (Video) The videos should be approved by the expert panel and the videos should be dynamic in nature.	II – Quadrant: (e – content) The video must be supported by the e – content and it should be plagiarism free.
III – Quadrant: (Communication) Organization must also create blogs and must ensure student-student, Student-teacher communication.	IV – Quadrant: (Evaluation) A well defined and efficient examination System must be used to evaluate the Students.

Figure – 2: 4 – Quadrant Approach for SWAYAM development

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Some Glimpses of the one day in-house workshop on "INNOVATIVE & INTERACTIVE TEACHING LEARNING PRACTICES":

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