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Announcement

Special Issue of 'University News'

A **Special Number of the University News** on the theme **'Realizing Sustainable Development Goals through Higher Education Institutions'** is being brought out in the Month of March**,** 2022.

The **Special Issue** will cover the articles of eminent educationists on the afore mentioned theme. Readers of the University News are also invited to contribute to the Special Number by submitting papers/articles on above theme by **March 01, 2022.** The papers will be published in the Issue subject to the approval of the Editorial Committee of the University News. The contributions are invited on the following Subthemes:

- *Realizing Sustainable Development Goals through Higher Education Institutions for Ensuring Equality and Sustainable Society or articles on SDGs* 5,10,11 and 12.
- *Realizing Sustainable Development Goals through Higher Education Institutions for Promoting Industrialization, Employment, Peace Partnership and Prosperity or articles based on SDGs* 8, 9, 16 and 17.
- *Realizing Sustainable Development Goals through Higher Education Institutions for Ensuring Clean Energy, Green Environment and Sustainable Ecosystem* or articles based on SDGs 7,13,14 and 15.
- *Realizing Sustainable Development Goals through Higher Education Institutions: Securing Basic Essentials of Well-being or articles on SDGs 1, 2, 3* and 6.
- *Realizing Sustainable Development Goals through Higher Education Institutions: Ensuring Inclusive and Equitable Quality Education or articles on SDGs* 4.

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Reaching the Unreached: An Experiment of Madhya Pradesh Bhoj (Open) University to Disseminate Higher Education via State-owned Television Channels

Jayant Sonwalkar* and Chandan Maheshkar**

Higher education should be responsible for developing knowledge-enabled citizens towards bringing socio-economic development, cooperation, and socially responsible conduct in society. For a developing nation like India, higher education is like an instrument to poverty alleviation and ensuring sustainable development for its residents. Globalization and ICT interventions are considerably influencing higher education and have expanded its reach to rural, remote, and backward regions. Being the second-largest population in the world, without an effective value-based education system, India's cultural diversity, regional variety, geographic attributes, and untapped human resources become unworthy. It was surprising that the number of graduates from an institution or a university is significantly less than the total population living in the country. Besides Gross Enrolment Ratio (GER), some fundamental challenges to the Indian higher education system include equal access to learning, educational technology, innovative practices, insufficiency of teaching personnel, infrastructural access, the adaptation of global standards, applied research, and quality management.

Madhya Pradesh and Higher Education via Open and Distance Learning

Madhya Pradesh is a state in central India. It holds the fifth largest population in the second largest geographic area. Bhopal, the city of lake, is the administrative headquarter of the state.

As per Census 2011, 72.21% of the population is residing in rural geography. Scheduled castes and scheduled tribes collectively made about 36% of the state's population, where scheduled tribes occupy a significant proportion (21.1%) and mostly dwell in rural and tribal regions. Because of linguistic, cultural, and geographical diversity, most tribes are disconnected from mainstream development in the state. Agriculture and its allied jobs are primary sources of earnings to a large part of the rural and tribal population. With this backdrop, providing equal access to education and adequate teaching aids has been a significant concern to policymakers, educational institutions, and educationists. In higher education, it becomes more challenging to offer the most relevant and need-based higher education with greater

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accessibility over resources and institutional support. In this sense, Open and Distance Learning (ODL), as an alternative way to make higher education accessible to the masses, is significant to transform the nation's vibrant population into a productive workforce with immense opportunities to learn and expanded career choices.

Madhya Pradesh Bhoj (Open) University and Challenges

Madhya Pradesh Bhoj (Open) University (MPBOU), commonly known as Bhoj University, is a state-level public university for distance education. The university was established in 1991 under state university regulation. The university is named after King Bhoj, a well-known Maharaja of high status in Indian history. The university promotes higher education to all sections of society, particularly the underprivileged and rural population. The university serves more than 80,000 students through 40 academic programs, 11 regional centres, and 296 study centres across Madhya Pradesh. Nearly 90% of these students are coming from rural regions. The university gives particular emphasis to empower students belonging to remote locations and with a disability. Thus it has opened its study centres in the reach of masses of remote rural localities. Delivering higher education in distance mode through ICT-enabled means and contributing to integrated human development are the university's primary objectives. The compliance of these responsibilities is significant to reach the unreached. Therefore, while thinking to make learning more accessible to students, the university has ascertained the following challenges mainly faced by students in rural, remote, and backward regions of the state:

1. The delivery of Self Study Material (SLM) in remote regions, which is a troublesome and time-consuming affaire;
2. No easy access to print media (daily newspapers, magazines, etc.) and electronic media (FM Radio and TV Channels) due to various reasons (e.g., geographic barriers, socio-economic disparity, and service providers' interests);
3. Student awareness of ICT uses for teaching and learning activities in higher education;
4. Limited internet access in remote areas;
5. Economic constraints to afford the cost of higher education;
6. Linguistic barriers due to differences in regional culture and geographic disconnect;
7. Lack of ability to access e-learning facilities due to limited/missing computer and IT skills;
8. The limited technological infrastructure of the university;
9. Shortage of educators having exposure to ICT-enabled teaching and learning; and
10. Non-availability of educational software in regional languages. Most educational software developed in English and the proficiency level of rural students in the English language is not high, which is also a limitation to having educational benefits of ICT-enabled learning platforms.

Moving Forward with Doordarshan

It was challenging for the university to decide the most feasible options to reach the state-wide students through considering the mentioned issues. The brainstorming begins to find out the most viable way to deliver higher education to the students from rural, remote, and underprivileged regions. The reach of radio and state-owned television channels brought them into consideration for providing high-impact audio-based or/and audio-visual content to meet the learning needs of targeted students. The university authorities marked some issues with the radio, mainly its learning impact, which is significantly less, limited transmission range and thus multiple stations of different regions were needed to cover the entire state, and the high cost of FM radio hours. Dissemination of education via television is not new in India. It was initiated in 1975 with the Satellite Instructional Television Experiment (SITE) (ISRO, 2021). Special satellite-linked TV sets were installed in some villages and towns and started transmitting a range of TV programs on different categories, including education, agriculture, and the environment. Thus, the university decided to do an instructional experiment with a state-owned television channel for reaching the unreached. The potential reasons to opt this option were: 1) the reach of the state-owned television channel; 2) under various human development initiatives, the government provided at least one TV set to the community centre of all the villages where students can have access the lectures; 3) the state-owned television channel is accessible free of cost through 'free to air connection' or DTH, and 4) non-interest

of private channels in such a social initiative and their limited presence and the cost. But, it was not possible to produce video lectures for all the 40 academic programs of the university in one go. However, with different resource constraints, there was uncertainty about the success of this experiment. Now, the university decided to move forward with unified courses/subjects of UG programs Bachelor of Arts (BA) and Bachelor of Science (B. Sc.). It was because the highest number of students enrolled in these two academic programmes of the university.

Doordarshan is an independent public service broadcaster funded by the Government of India, with the most extensive transmission infrastructure and well-equipped studios. Doordarshan Madhya Pradesh, abbreviated DD Madhya Pradesh, is one of its regional satellite TV channels primarily serving the Indian state of Madhya Pradesh. DD Madhya Pradesh is the most obvious and competent option to impart higher education throughout the state in terms of reach and access. The university contacted the director of DD Madhya Pradesh with the proposal to telecast the lectures on assorted unified courses/ subjects of BA and B.Sc. programs in a classroom ambience. Surprisingly, the director of DD Madhya Pradesh had the idea of delivering education through television similarly to MPBOU proposed when he was in the initial years of his career. He approached his higher officials with the idea, but he failed to convince them to produce and broadcast such programs. Now, nearly 23 years later, getting a proposal on his long-standing wish from MPBOU was like a dream come true to him. He expressed his consent with great enthusiasm, but he needed approval from headquarters in New Delhi before moving forward. Finally, he got permission to move forward with the university's proposal.

The director of DD Madhya Pradesh had informed the university about this progress and had a series of discussions with the Vice-chancellor and authorized people on various issues like broadcasting schedule and university's preparedness for recording lectures. At this stage, the university had some serious issues that had to be fixed before moving forward, such as cost of video production and broadcasting, availability of competent faculty members, adequate content, and viability of telecast schedule. As everything was feasible, the university and DD Madhya Pradesh produced more than 250 lectures by concerned subject experts for BA and B. Sc. Programs with DD Madhya Pradesh. After all the preparation was done, these lectures were telecasted daily on DD Madhya Pradesh from March 2019 to June 2019 between evening 08:00 to 10:00 PM, and the TRP has been recorded as 80000 viewers every day.

From the educational perspective, the university derived the benefits of teaching through television to its student were:

1. Expanded and enriched classroom learning experiences to its students created a genuine interest in the subjects being taught,
2. More accessible learning with audio-visual aids, and
3. Better engagement students with learning more than other means of education delivery.

It will not be out of context to mention that the syllabi of the unified courses/subjects of BA and B. Sc. Programs of all the state's eight universities are almost similar. These lectures were benefited not only the students of Bhoj University but also the students of other universities of the state. This experiment of the university sets a milestone in the area ODL system. However, this is not two-way communication and thus, clarifying the student doubts is a significant limitation. On this ground, the university provided students with an email to clarify their doubts and queries from the related experts.

Best in the Worst

On January 30, 2020, the World Health Organization (WHO) declared the global emergency of the COVID-19 outbreak and then on March, 11, 2020, it was said global pandemic. Coronavirus disease was first identified in the Wuhan City of China. Covid-19 changed the socio-economic fabric, pace, and nature of lives throughout the world. Measures to protect people and balance the spread of COVID-19 and economic sustainability were significant concerns to every country. The most effective strategies were Lockdown before the spread, strict enforcement of released guidelines, and committed appropriate pandemic behaviour. Consequently, India faced multiple lockdowns in different phases; however, the second wave of pandemics severely affected human lives in the country.

This pandemic situation has affected the academic life of students and their psychosomatic

order in myriad ways. It was a severe concern to take some necessary measures. Authorities in the higher education department of Madhya Pradesh were thinking of engaging students in the educational process through non-personal interaction during the pandemic. Limited internet access was also an issue for students of Madhya Pradesh. State-owned TV channels came into the minds of authorities. After a lengthy discussion, it was decided to replicate the experiment of the MPBOU for the benefit of over a million students. DD Madhya Pradesh was asked to re-telecast all 250 lectures which MPBOU had on air. Arrangements were made between November-December 2020 to reduce the impact of the pandemic on students and keep them on track. The repeat telecast was done for UG level programs of academic session 2020-2021. The office of higher education commissioner of Madhya Pradesh had communicated the principals of all higher education institutions to inform the students about telecasting of lecture on DD Madhya Pradesh and make necessary arrangements to attend classes in the community centres for those who have no TV sets.

Conclusion

The setting-up and use of television as a medium to provide distance education are not easy to any institution of higher education. It poses an array of challenges—availability of educational content, content production in a short time with quantity and quality, partnership for designing and broadcasting the educational content, the collaboration between HEIs and the professionals for the production of educational programs, and monitoring and evaluation of learning. The efforts of Madhya Pradesh Bhoj (Open) University established teaching through television as a best practice to reach the unreached and promote higher education in the ODL system.

The COVID-19 pandemic has been one of the most significant disruptions to education, which affected more than 90% of the world student's population (UNESCO, 2020). Internet-based learning revealed significant divides between and within countries. The condition is exceptionally inferior to low- and middle-income categories with Internet access rates typically less than 50% and a large number of students without devices to enable online learning at home (Zacharia & Twinomugisha, 2020). The decision of the higher education department of Madhya Pradesh to re-telecast all 250 lectures on DD Madhya Pradesh, which MPBOU had on-air for their students, was a very thoughtful and appreciating step to engage students in the educational process through non-personal interaction during the pandemic. It has established that disseminating higher education through television as a best practice. Moreover, it was recognition for the efforts of MPBOU to make higher education accessible throughout the state, particularly to the students residing in remote and rural regions of the state.

From this case, it can be learned that collaboration, pragmatism and learner-centric approach are core elements for the success of this kind of initiative (UNESCO, 2020). Collaboration between education authorities, educators, production agencies, and broadcasters is primary to implementing television-based educational programs. Time is a critical element in such initiatives that limit the collaboration to produce video content using adequate teaching aids within the available time frame so that programs can be broadcast on time.

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❑

Understanding Various Levels of Bloom's Taxonomy

Meenal Malik* and Mahabir Singh**

Studies have revealed that in the 21st century, employers around the world are attaching more importance to professional skills than the knowledge of discipline. Higher order skills like critical thinking, problem solving and ability to communicate well are crucial for the graduates in the emerging world. In Bloom's Taxonomy three skills viz : Analysing, Evaluating and Creating are higher order abilities which are important than the memorisation of domain knowledge. In the present system, the main challenge is that these higher order skills cannot be assessed by conventional examination system. Most of the traditional universities and institutions attach more weightage to End Semester Examinations; the thought behind this is the weakness of assessment procedures to evaluate higher order skills. Therefore, certain well-defined instructions are needed to fairly evaluate the projects, professional training, communication skills and internship experiences. However, in the present paper each Bloom's Level, relevant to written examinations of fixed duration, is discussed with examples of subjective and objective questions. This article is also for the purpose of quality improvement in setting questions and shall help as guide for the examiners.

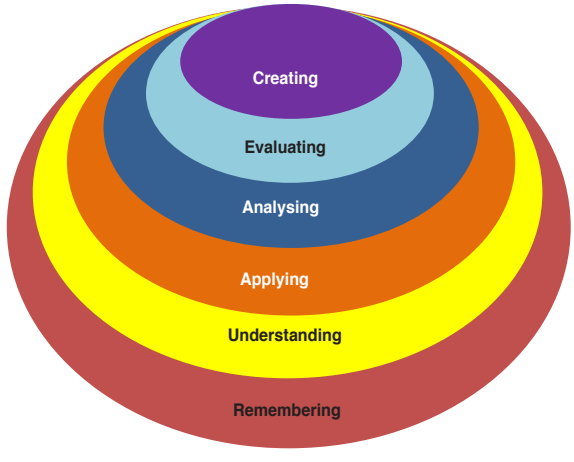
In the education system, written examinations, internal or external, play an important role in assessing the learning abilities of the students. The quality of any examination mainly depends upon the quality of questions asked for the purpose of assessment. The questions in the examinations should be set in such a manner which covers the entire syllabus and should be able to test whether the candidate has truly an understanding of the course matter or not.

The present assessment process of students in higher education in India is dominated by End Semester Examinations which means memorisation of facts occupies the dominant place. Today's recruiters ask for those graduates who are able to communicate in an impressive way and must have professional skills in addition to the knowledge of subject matter. Therefore, to produce more employable graduates the evaluation of higher order skills i.e. analysis, synthesis, design, communication, application of knowledge and ability to work in a team becomes more important. Presently, in almost all traditional universities and colleges in India, the evaluation of projects, dissertations, internships and professional training is not done in an objective manner except some institutions of eminence. It is need of the hour to focus on the evaluation of higher order abilities without any bias and for this purpose a more scientific and modern approach should be followed.

Bloom's Taxonomy

Bloom's Taxonomy of educational objectives was developed in 1956 by Benjamin Bloom (1956). Later, Anderson and Krathwohl (2001) modified the Taxonomy to make it more relevant and realistic. Revised Bloom's Taxonomy identifies six levels of competencies which are appropriate for the purpose of educators shown in Figure 1. The end semester written examinations can assess only very limited course outcomes and program outcomes. It means written examinations of time bound duration are not sufficient to make valid judgement about student learning. Therefore, some alternative assessment methods like problem solving assignments, projects

Fig 1. Revised Bloom's Taxonomy (It is Hierarchical in Nature that means learning at Higher Level Requires Skills Attained at Lower Level)



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portfolios etc. are required to assess the higher order skills at level 4, 5 and 6.

Planning of Assessment

While planning the assessment of student learning, following are some points which need to be considered: First three learning levels namely Remembering, Understanding, and Applying and to some extent fourth level Analysing can be assessed through:

(a) Continuous Internal Evaluation (CIE) using assignments, quizzes and surprise tests etc.

(b) End Semester Examinations (ESE) which are written examinations conducted after completing the semester.

In these types of examination, students are given limited amount of time to attempt the questions. Following Figure-2 illustrates about assessment methods and Bloom's Levels.

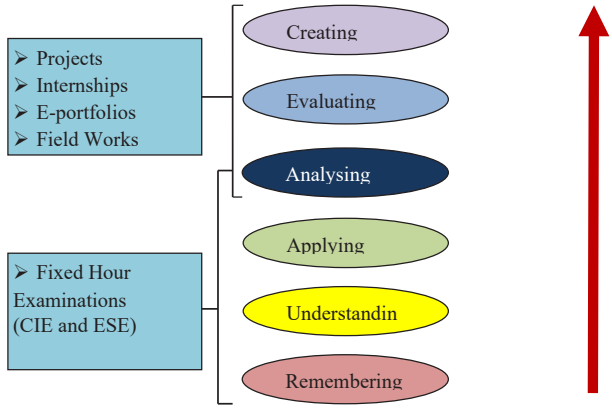
Top three levels i.e., Creating, Evaluating and up to some extent Analysing are to be assessed by extended course works like projects, internship experiences and e-portfolios of students. Adoption of Bloom's Level framework should be implemented at university level for the sake of uniformity and to provide same playing field to all students regarding:

(a) Mapping of questions in the written examinations with Course Outcomes and then with Program Outcomes.

(b) Weightage of Bloom's Level attached to each question in the question paper.

(c) Criteria of assessment with mapping of questions in the viva-voce with Course Outcomes and then with Program Outcomes.

Fig 2. Assessment Tools for Different Bloom's Levels



(d) Characteristics which are to be assessed.

(e) A rating scale which defines student's ability with in each criteria.

(f) Mapping of scale with Course outcomes and hence Program outcomes.

Explanation of Bloom's Levels

Remembering

Suppose a question of following kind is put before the students:-

Who was the Author of book My Experiments with Truth?

(a) Jawaharlal Nehru
(b) Mahatma Gandhi
(c) Abraham Lincoln
(d) Nelson Mandela

The answer to above question is obviously (b) To answer above question, one need knowledge

Table -1: Assessment Tools for Different Bloom's Levels

Bloom's Level	Description	Attainment of Skill
1.	Remembering	Memorisation of facts or knowledge attained in class or by reading the subject material
2.	Understanding	Explanation of previously learned material, ideas or concepts
3.	Applying	Use of knowledge attained for the application in another similar situation
4.	Analysing	Split the information in to parts and to find relationships between them and able to analyse
5.	Evaluating	Based on the work done and knowledge to justify the decision taken
6.	Creating	Develop and design a new concept or to generate a new idea while solving a problem

and he/she should be able to recall that from his/her memory. Therefore above question is of Bloom's Level 1 i.e Remembering. Other questions of this level can be set using the action verbs who, tell, define, recall, identify, name, when, where, list etc. The first level therefore is to test the ability of student to recall the information/knowledge he/she has gained during the course of study. Another example of first level may be "Who is Secretary General of United Nation Organisation?"

Understanding

Let us examine the following question now:

Which of the following is not true about COVID-19 pandemic?

(a) It happened due to high level of pollution.

(b) It occurred in non-vegetarians only.

(c) It happened due to a virus from animal.

(d) It happened due to bacteria.

We know that the answer to above question is (c) but our purpose is to know how the candidate shall reach at the correct option. It is not a pure knowledge question because it requires the understanding of the concept as well. The candidate who has the understanding of viruses, bacteria etc. shall be able to answer above question, it means it tests the skill of understanding of the candidate. Therefore, it is a question of Bloom's Level 2. Another question of Level 2 can be like; "Explain the concept by which plants are able to generate oxygen during day time." Action verbs to set the questions of Level 2 can be describe, explain, summarise, interpret, discuss etc. which test the ability of student to translate knowledge to new context and understand the information.

Applying

Let us check the following question:

The Length of one side of a rectangular table is 3.0m and it's diagonal is 5.0m long. Applying Pythagoras theorem to find the area of table?

(a) 15 meter square

(b) 25-meter square

(c) 9-meter square

(d) 12-meter square

The correct answer to above question is (d) and the student can reach at correct option if he/she has ability to apply the concept of Pythagoras theorem to his/her knowledge about rectangles. Questions starting with verbs like apply, illustrate, solve, use, demonstrate, determine, modify, calculate, model etc. can be set for Bloom's Level 3. To answer the question of Level 3, the candidate has to apply the knowledge and understanding of the concept hidden inside the statement of the question. One more example of this level may be: "Write the steps to prevent an epidemic to spread in your country keeping in view the guidelines issued by World Health Organisation."

Analysing

Fourth Bloom's Level is to test the ability of Analysis. It requires the skill to break down a problem into parts and then to find a relationship of the parts and the way the parts are organised. Let us take the following question as an example of Level 4.The Table-2 represents the relationship between annual income and number of children below 15 years of age of select families of a locality.

Table-2: Relationship Between Annual Income and Number of Children below 15 Years of Age of Select Families

Sr. No.	Annual Income of family	No of Children with age less than 15 yrs
1.	Less than Rs 100,000	320
2.	Rs 100,00 to Rs 500,000	200
3.	Rs 500,000 to Rs 700,000	150
4.	Rs 700,000 to Rs 1000,000	80
5.	Above Rs 1000,000	20

From Table-2, one can conclude that the families with lower income have more children. The examiner's question is -- Which of the following assumptions would be correct to justify the conclusion?

(a) All families are able to send their children to expensive schools.

(b) The families with lower income group need fee concession for better education of their wards.

(c) The families with higher income are supporting the families in lower income group.

(d) Children belonging to the families of higher income are more intelligent than other families.

This question tests one's ability to have knowledge of value of currency, understanding of fee structure of schools and analysis of the data. Based on these abilities he/she shall tick option (b) as correct answer. One more example of Level 4 can be:

In a class of 10 students, the weights and heights of respective students are given in Table-3. From this table, find the Mean and Standard Deviation and make a statement about the relationship between weight and height of students.

The Level 4 may be tested by extended course works in place of written examinations of fixed duration. The questions of this Level may have action verbs analyse, classify, illustrate, categorise, breakdown, etc. By attempting the questions of Bloom's Level 4, the candidates demonstrate the skill to breakdown a complex problem into parts and identify the relationship between different parts.

Table-3: Weights and Heights of Select Students in a Class

Weight in Kgs.	Height in Inches
70	40
68	45
60	70
68	55
60	60
68	38
61	34
65	42
70	40
59	62

Table 4: Rubrics for Communication (Written and Oral)

Component	Proficient	Acceptable	Needs Improvement
Written Communication	Report is well organised and clearly written. The underlying logic is clearly articulated and easy to follow. Words are chosen that precisely express the intended meaning and support reader comprehension. Diagram or analysis enhance and clarify presentation of ideas. Sentences are grammatical and free from spelling errors.	Report organised and clearly written for most part. In some areas the logic or flow of ideas is difficult to follow. Words are well chosen with some minor exceptions. Diagrams are consistent with text. Sentences are mostly grammatical and only a few spelling errors are present but they do not hinder the reader.	Report lacks an overall organisation. Reader has to make considerable effort to understand the underlying logic and flow of ideas. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult for the reader to interpret the text in places.
Visual Presentation	Slides are error free and logically present the main components of the process and recommendations. Material is readable and the graphics highlight and support the main ideas.	Slides are error free and logically present the main components of the process and recommendations. Material is mostly readable and the graphics reiterate the main ideas.	Slides contain errors and lack a logical progression. Major aspect of the analysis or recommendations are absent. Diagrams or graphics are absent or confuse the audience.
Oral Presentation	Speakers are audible and fluent on their topic and do not rely on notes to present or respond. Speakers respond accurately and appropriately to audience questions and comments.	Speakers are mostly audible and fluent on their topic and require minimal referral to notes. Speakers respond to most questions accurately and appropriately.	Speakers are often inaudible or hesitant, often speaking in incomplete sentences. Speakers rely heavily on notes. Speakers have difficulty in responding clearly and accurately to audience questions.
Body Language	Body language, as indicated by appropriate and meaningful gestures (e.g., drawing hands inwards to convey contradiction, moving arms up to convey lift, etc.) eye contact with audience and movement demonstrates a high level of comfort and connection with audience.	Body language, as indicated by a slight tendency to repetitive and distracting gestures (e.g., tapping a pen, wringing hands, waving arms, clenching fists etc.) and breaking eye contact with audience demonstrates a slight discomfort with audience.	Body language, as indicated by frequent, repetitive and distracting gestures, little or no audience eye-contact and/or stiff posture and movement, indicate a high degree of discomfort interacting with audience.

Table-5: Rubrics for Assessment of Design Projects

Category	Proficient	Acceptable	Needs Improvement
Purpose of the Project	Provides a detailed intended outcome of the project which includes information about the problem that was being solved or the need being met and clearly articulates the reasons and decision-making process used to select the project.	Provides a description of the intended outcome of the project which includes information about the problem that was being solved or the need being met and why the project was selected.	Does not clearly explain the intended outcome of the project or provides little information about the problem that was being solved, the need being met or why the project was selected.
Research	Reflects thorough understanding of similar work done by others and presents it in acceptable literary format.	Reflects awareness of similar work done by others and presents it in an acceptable literary format.	Lacks awareness of similar work done by others in an unacceptable literary format.
Choices	Demonstrates sophisticated justification of choices with reference to functional, aesthetic, social, economic or environmental considerations.	Justifies choices made with reference to functional, aesthetic, social, economic or environmental considerations.	Lacks justification of choices with little or no reference to functional, aesthetic, social, economic or environmental considerations.
Alternative Designs	Final design achieved after review of reasonable alternatives.	Alternative approaches identified to some degree.	Only one design presented or clearly infeasible alternatives given. Serious deficiencies in exploring and identifying alternative designs.
Application of Engineering Principles	Critical selection and application of engineering principles ensuring reasonable results.	Effective application of engineering principles resulting in reasonable solution.	No or erroneous application of engineering principles yielding unreasonable solution. Serious deficiencies in proper selection and use of engineering principles.
Final Design	Design meets or exceeds desired objectives.	Design meets desired objectives.	Not capable of achieving desired objectives.
Interpretation of Results	Insightful, supported conclusions and recommendations.	Sound conclusions reached based on achieved results.	No or erroneous conclusions based on achieved results. Serious deficiencies in support for stated conclusions.

Evaluating

To achieve this level the candidate has to demonstrate the skill to compare between different ideas, make choices based on logical arguments and to make judgement by using some criteria. The action verbs for the problems to examine the student for this level may be measure, recommend, conclude, justify, assess, choose, compare, summarise, evaluate etc. An example to clarify more is given below.

A factory building work was going on smoothly with 100 workers which include 3 supervisors, one architect, 20 skilled labourers and other unskilled manpower, with this manpower the work was to finish in 45 days. The work stopped due to lockdown of the country and 70% of skilled and unskilled labourers left the job. Assess the delay in 01204356699 project and recommend a comprehensive plan to finish the job in 90 days after opening of the lockdown with the manpower present on site. The roles of each worker are already defined.

Creating

This level is to examine the ability to create new idea using the existing concepts or to draw conclusions from a complex problem. The action verbs used to examine this skill are design, generate, develop, create, formulate, invent, compose, integrate etc. Following example is given in this reference:

In an online examination the web camera is used to monitor the candidates during examination but still some candidates cheat the examination. Develop a system using biometric credentials of candidates so that cheating can be curbed to minimum level including cheating in the form of impersonation.

Assessment of Higher Order Skills

The higher order cognitive skills, particularly,

Evaluating and Creating cannot be assessed through conventional time bound examinations. These skills need to be assessed through the works of the students in Projects, Open Book Examinations, Dissertations, Viva-voce examinations and Internship experiences. In order to evaluate a student for attainment of course outcomes and hence program outcomes with reference to skills of Bloom's levels 5 & 6, it is necessary that evaluation tools are scientific and logical. In Table-4, we are reproducing rubrics for evaluation of Higher Order Skills Communication (written and oral) and Design Projects (Table-5) from AICTE document on examinations reform policy –2018.

Conclusion

The questions of both types that is subjective and objective (Multiple Choice Questions) can be set with in Bloom's Taxonomy Framework. Bloom's Taxonomy is hierarchical in nature and a single question may have multiple Bloom's Levels. The paper setter must consider the time constraint while setting the questions in this framework because the questions with higher Bloom's Level need more time to answer in comparison to questions with lower levels.

In the best interest of higher education in general and employability of graduates in particular it is need of the hour to formulate very objective set of instructions i.e. rubrics for the purpose of evaluation of higher order abilities in a fair and transparent manner. In most of the institutions of higher education in India, there is very good set up and system of conducting final external examinations of limited duration but when it comes to practical examinations, project evaluation, internal assessments and other viva-voce examinations then there is lot of subjectivity and many a times grades are awarded on the considerations other than merit. Therefore, current system of evaluation of higher order skills is to be replaced by an objective and completely unbiased system so that these skills get their due weightage in assessment and students start focussing more on problem solving than memorisation of facts. The existing system of evaluation of higher order abilities need to be overhauled in such a manner that the graduates produced by institutions become more employable. To achieve the objective of fair and transparent system of evaluation the integrity of teaching faculty is of utmost importance which has eroded very fast during the last decade. The faculty needs training for evaluation of such skills and abilities of students which guarantee them a good job in the present scenario.

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Artificial Intelligence in Teacher Education Programmes

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The introduction of Artificial Intelligence (AI) in education, particularly, teacher education programmes is the need of the hour. It is the simulation of human intelligence process by machines especially computer systems that work and react like humans. These computers will be able to execute the activities involving knowledge, reasoning, planning, speech recognition, problem solving, perception and many more. Thus, AI is a way for making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the intelligent human think. AI will not only prepare quality teachers but will also improve the quality of education. National Education Policy–2020 has also laid emphasis on introduction of AI in the education system.

Robotics System

Robotics is a branch of science that deals with the design, construction, operation, and application of robots, as well as computer systems for their control, sensory feedback, and information processing. These technologies deal with automated machines that can take the place of humans or resemble humans in appearance, behaviour, and or cognition. Artificial Intelligence (AI), machine learning and robotics technologies are increasingly automating various tasks and therefore, increasingly getting embedded in our society, and is changing how we work and live. However, there is general feeling that AI will cause disruption and take away jobs. Policy makers need to address this, given the already existing concerns about rising unemployment. They have to show bold leadership by addressing task of skilling and reskilling people to work with Artificial Intelligence. Though it is early to see Robotics in classroom. AI has already become an effective teaching tool because of its ability to adapt and offer customised curriculum. AI enabled tools help assess an individual's current level of understanding, identify gaps and offer tailored suggestions, just like a teacher's ultimate goal is complete customisation of various apps and programmes that are helping us in long way. Tutoring apps are customising the lesson structure depending upon the performance of a unique user profile.

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Policy Perspective

The Artificial Intelligence strategy was recommended and supported by Government of India (GoI). In June 2018, NITI Ayog released a paper titled National Strategy for Artificial Intelligence (AI) for All, and argued that India can position itself as a leader in AI. The paper underlines the need for privacy and security including evolving norms for regulation and anonymisation of data. It directs India's AI focus on five sectors; health care; agriculture; education; smart cities; and infrastructure; mobility; and transportation. It also suggests national strategy for introducing Artificial Intelligence (AI) in education sector. For example, low retention rate and poor learning outcomes are challenges in rural schools which has adverse impact on education. The support focus will be adaptive learning tools for customised learning, intelligent and interactive tutoring system to address the key challenges.

Use of Artificial Intelligence in Other Sectors

AI is being used in other sectors like health care, agriculture, security and transportation.

- AI technology is rapidly spreading across the medical field and helping the doctors in evaluating patients more efficiently. AI helps doctors for eye check-ups of organs and also in surgery. AI system can identify signs of disease in a wide variety of ways from X-rays to CAT scans. AI are used by health care administrators for and associates such as billing companies and insurance providers.
- AI is being used widely by Police in the country as data of criminals can be collected easily from different parts of country. Police uses AI apps to catch criminals and suspects by using facial recognition. For example, police of Punjab click the photographs of the criminals and upload them on the APP called Punjab Artificial Intelligence System (PAIS) which uses facial recognition and trace their criminal history.
- Artificial intelligence is being used in agriculture

sector also to carry out pilot studies to speed up insurance claim settlement. Tools used in estimating crop yield include high spatiotemporal remote sensing data, unmanned aerial vehicle, machine learning and advanced intelligent crop simulation model and artificial intelligence.

- In transport system, AI is already in operation in the country. Besides this, our country has several AI based start-ups which are being used in the employment sector. An attempt is being made to use Robot with artificial intelligence for solving the problems of car parking in different places in the country. The space for parking will be provided by Robot in a proper and adequate manner. A number of countries like US, France, South Korea, China, etc use AI in industry and other sectors.

Use of Artificial Intelligence in Education

AI is being introduced in education across world, but in our country, we always believe in traditional teaching systems and also introduce new changes slowly. But time has come to introduced AI for the benefit of students and teachers. AI will revolutionize in the education system. Today, AI offers cutting edge technology to enable students to be more tech savvy and industry fit. AI offers the opportunity to know who and what is sought after and makes people in the education sector understand what is important. AI will help to point out areas where the course needs to improve, provide additional support through AI tutors, give valuable feedback to both students and teachers, change the way we interact with information and improve the way students research in future. It will change the role of teachers where teachers will supplement AI lessons, making trial and error in learning less intimidating. AI will make education a whole new experience from giving students a different trend of classroom, teachers and equipping them with basic skills. AI will replace career guidance cells and recruitment managers as the computers will themselves suggest jobs to the students and also find the right candidates for the companies. For example, in Andhra Pradesh, Microsoft is helping in predicting dropout. Pearson software called *Write to learn* was NPL based technology to provide students personalised feedback, hints and ties to improve their skills.

The alumni of Rajkiya Pratibha Vikas Vidyalaya, Dwarka who is now a fellow at Harvard Bio Design Lab, Massachusetts, US conducted two-day robotics workshop in his *alma mater* school. In the workshop, the students of science used Harvard Bio Design Lab's Soft Robotics Tool Kits and developed on their own an electric claw. The students got hands on experience through robotics research. He said that apart from silicon, other kits can be made with other material like clay.

Educational software can be adapted to student needs from kindergarten to graduation level. One of the key ways that AI will impact education is through application of greater level of individualised learning like games and software. These systems respond to the needs of students repeating things that students have not mastered and help students to work their own (through programmes like Khan Academy). Virtual Reality (VR) is an interactive computer-generated experience taking place within a simulated environment. It incorporates mainly auditory and visual feedback, but may also allow other types of sensory feedback. This immersive environment can be similar to the real world and therefore will be used in science teaching effectively.

Deakin University in Australia is using IBM Watson, a virtual student advisory service to enhance the quality of the student experience, through a breakthrough system that will transform the way students get advice and answers to questions and is available 24 hours a day in all seven days. Watson virtual advisory fielded more than 30,000 questions in first trimester. Another use for AI includes chatbot. Chatbots are equipped with natural language progression. They have capability of answering questions about homework, paying bills, etc., like humans.

In a classroom, AI will help reduce teacher's burden by catering to varying levels of learning requirements. With customized curriculum, teaching and learning will be facilitated outside the physical classroom it will take away several administrative hassles. This will free up resources for more creative and strategic tasks. It is being said that the fourth industrial revolution includes placing internet connected sensors on large machines and using analytics, cloud computing and machine learning

to predict and prevent issues. Students passing out of universities will have to be prepared with the requisite skills to work with these tools in a smart work environment. According to a LinkedIn report, India ranks third after the US and China with the highest penetration of A1 skills among its workforce. India and Sweden are working for collaborating to harness the full potential to this field. For realising the SDG goals, Sweden government launched many projects on AI.

Teacher Education Programmes

Teacher education is a process for preparing quality teachers through pre-service and in-service education programmes. Therefore, there is urgent need to promote AI and Robotics system in teacher education programmes for preparing effective and efficient teachers. If we fail to introduce this system in teacher education programmes, we will not be able to produce and prepare quality teachers as well as students. The teachers prepared through traditional way will not be able to face the challenges of 21st century. The only path for promoting this system is to integrate AI and Robotic system in different activities of teacher education programmes. There is no doubt, A1 will transform the teacher education programme but there is a big need to safeguard against improper use. Nobel Laureate Joseph Stiglitz says that Artificial intelligence and robotisation have the potential to increase the productivity that could make everybody better off, but only if they are well managed.

Our country has large number of teacher education institutions in which pre-service teacher education programmes for preparing teachers both at elementary and secondary stages are being run. If we look back, there were only 363 teacher education institutions (312 primary and 51 secondary teachers) during 1947-48 in the country for preparing teachers. But now the number of such institutions has increased to about seventeen thousand including university departments, District Institutions & Education Training (DIETs), Colleges of Teacher Education (CTEs) and Institutions of Advanced Studies in Education (IASEs). For improving the quality of teachers, no doubt, various efforts were made from time to time by Government of India, particularly, after independence. The Government of India has set up National Council for Teacher Education (NCTE) as statuary body in 1993 by the Act of Parliament for maintaining norms and standards of teacher education programmes. NCTE revised and notified regulations, norms and standards of fifteen teacher education programmes in 2014 namely: Diploma in Preschool Education (DPSE.), Diploma in Elementary Education (D.El.Ed.), Diploma in Physical Education (D.P.Ed.), Diploma in Elementary Education Through ODL, Diploma in Arts Education (Visual Arts), Diploma in Arts Education (Performing Arts), Bachelor of Education (B.Ed.), Bachelor of Physical Education (B.P.Ed.), Bachelor of Education through ODL, Bachelor of Education programme 3 year (Part Time), Master of Education (M.Ed.), Master of Physical Education (M.P.Ed.), Bachelor of Elementary Education (B.El.Ed.), B.Ed.M.Ed (Integrated 3-Years Course) and B.A.B.Ed /B.Sc.B.Ed (4- Years Integrated). NCTE again revised and notified four-year integrated programme at primary and secondary stages in arts and science stream on 29th March, 2019.

In pre-service teacher education programmes, there are three important components namely, theory courses, pedagogic studies, school internship and field engagement programmes. Artificial Intelligence and Robotic system should be introduced in all the three components for preparing better teachers.

Theory Courses

Theory courses has Perspective in Education and Curriculum and Pedagogic Studies. Perspective in Education include course of childhood, child development and adolescence, contemporary India and education, philosophical and sociological perspective in education, knowledge and curriculum, teaching and learning, gender and society and inclusive education. With the help of AI research & development organisation, adaptive customised educational content of the above theory papers can be developed. Adaptive Learning Tools for Customised Learning will create smart content for improved interactivity, assessment and feedback for teachers. AI driven chat Robots, machine learning and neutral language processing have many opportunities for improving quality of learning.

AI helps in developing teaching skills and testing system. By leveraging the best attributes of machine and teachers, the vision of AI in education is one where they work together for the best outcome of students.

The Curriculum and Pedagogic Studies

AI to be used for the curriculum and Pedagogic Studies include Language across Curriculum & Communication, Understanding of a Discipline and Teaching of different subjects. It can point out places where courses need to improve. Teachers may not be always be aware of gaps in their lectures and educational material that can leave students confused about certain concepts. AI offers a way to solve that problem. MOOC provider is already in practice.

Automated grading is a specialised AI based programme that stimulate the behaviour of a teacher to assign grade to essays written in an educational setting. It can assess student knowledge, analysing their answers giving feedback and making personalised training plans. Personalised Learning using evidence based educational concepts such as questions, flash cards and videos, images correlated with memory anchors, adaptive space repetition, collaborative learning and ramification is focussed in AI and Robotics system. Personalization is turning education to a choose one's own method of learning, capitalizing interest and engagement. The tasks, projects and assignments from theory courses should be given to student teachers for enhancing their professional capacities in different courses

Engagement with Field and School internship

AI and Robot will play an important role in implementing the field engagement and school internship programme. School internship is a part of curriculum for engaging with field and for development of a broad repertoire of perspective professional capacities, teacher sensibilities and skills. The curriculum provides for sustained and student teachers shall be equipped to cater diverse needs of the learners in schools. Internship is of 20 weeks (Upper Primary Stage & Sr/Secondary Stages) for a two-year programme. Student teachers are to observe regular classroom with a regular teacher four weeks in first year and act as full-time teacher in second year for 16 weeks. About 20% to 30% marks are for Internal Assessment and 70% to 80% marks for External Assessment. Internal Assessment may include individual or group assignments, observation records, student portfolio, diaries etc. For such programmes pre-Instructional planning and action plan with different issues should be developed. The student teachers should be made familiar with methodology of AI and Robotics system from AI tutors for teaching different subjects. Some tutoring programmers based on artificial intelligence already exist and can help student teachers through basic mathematics, writing and other subjects. The student teachers will use Robots in classroom teaching by introducing the lesson in the classroom, define problem with present clear rationale, identify relevant discipline, develop a command of each relevant discipline, create, and combine disciplinary insights to construct new more integrated understanding of the problem and interact with students. It could change the role of teachers. Teachers will supplement AI lessons, assist students who are struggling and provide human interactions and hand on experiences for students. AI-driven programmes can give students and educators helpful feedback and also about the success of the programme as a whole.

In-service Education

Artificial intelligence Robotic system should be used in the in-service education programme for updating the knowledge and skills of teachers on regular basis. Therefore, the institutions like CRC/ BRC, DIETs, CTEs, IASEs, SCERT and NCERT, NIEPA should focus on training on AI for material development and its transaction in their programmes. The Government of India launched Pandit Madan Mohan Malviya National Mission on teachers and teaching during 2014-15 which addressed comprehensively all issues related to teachers, teaching, teacher preparation and professional development and different cultural sensibilities. The focus is to deal whole sector of education without fragmenting the programmes based on levels and sectors as school, higher, technical etc. AI and Robotic system should used in implementation of this programme the programme. Strategies like group discussion, group reflection; panel discussion; brain storming sessions etc will be used in a better way through AI and Robotic system..

Some Points on Artificial Intelligence

- AI has strong data protection rules and is constantly having to rethink how to handle and store data. AI is not an end in itself, it is a means to improve the quality of teacher education programmes.
- AI refers to the ability of machines to perform

cognitive tasks like thinking, perceiving, learning, problem solving and decision making. It can improve access and quality of education.

- AI is accomplished by studying how human brain thinks, and how humans learn, decide and work while trying to solve problem and then using the outcomes of this study as a basis of developing intelligent software and systems.
- AI will allow differentiated and individualised learning (for 30 students) which is not possible for teachers. Several companies have developed content technology.
- AI tools can help universal access for all students and make global classrooms available to all.
- Automate Admin Tasks in admission process, grade multiple choice tests, etc. in efficient manner.
- Tutoring and support outside the classroom become more advance through AI and can be used by parents.
- AI and machine learning have broad impact and quicker confluence of data, better computing power, better algorithms of educational institutions.
- Machine learning (video) can help better learning when material has not explained well and personalised learning
- Visual Facilitators are useful to answer students' requests.
- Chat Campus at Deakin in Victoria, Australia is in operation which reply all queries of students regarding periods, examination, data, assignments.
- Adaptive learning means to know progress of each child in the class.
- Proctoring test is the mechanism to ensure authenticity of examinee and preventing him from cheating.
- AI is best suited where organisation is able to replace slightly more complex human decision making with a machine. Examples include identifying, job fit, succession planning, making hiring decisions, etc. Whereas Robotics Process Automation (RPA) is best suited for repetitive processes where rules are clearly defined such as hiring, recruitment, pay rolls, scheduling in interview, etc. AI can make trial and error learning less intimidating.
- IA could offer students solutions for improvement by way of experiment and learn in judgement free government.

Challenges for Artificial Intelligence

- There is general feeling that AI will cause disruption and take away jobs. Policy makers need to address this, given the already existing concerns about rising unemployment. They have to show bold leadership by addressing tasks of skilling and reskilling people to work with Artificial Intelligence.
- Some experts says that the machines/technology cannot work better than human beings or equivalent to human intelligence.
- There is dearth of Robotics Specialists/Experts who can prepare such systems which can converse with machines. Some forms of machine learning or a category of AI may have been inspired by human brains but they are not equivalent. AI solves one task well and accurate but fails if condition is changed.
- *Reflect Over Biases*- If one trains a Machine Learning (ML) model with a bias, one could end up with biased model.
- *Solve Business Problems*- Gartner says that every organisation should consider the potential impact of AI on its strategy and investigate how this technology can be applied to business problems.
- *Need Time and Data*- Humans are good at learning quickly with little information. ML are opposite and require lot of data inputs to able to be trained.
- Machines are not to take decisions on their own and certain human emotions- empathy, for instance can never be automated Artificial Intelligence can automate basic activities in education, like grading in college homework and tests for larger lecture can be graded.
- As far as a regulatory framework for AI is concerned, I think that no country has a perfect framework as of today and this is really a challenge because AI is in early stage.
- In artificial intelligence sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by human and other animals. Artificial Intelligence will never get jokes like humans

do. A computer does not have these real-world experiences to draw on. It only knows what you tell to it and what it draws from. There are good reasons to have artificial intelligence try to learn to get humour.

- Humour in artificial intelligence are a growing field for academics. It makes machines more relatable, especially if you can get them to understand sarcasm. They may aid with automated translations of different languages.

Action Points.

- All the universities and teacher education institutions to follow and implement AI strategy in professional development programmes.
- In revised regulations of NCTE 2014 & 2019, ICT has been made compulsory in teacher education programmes, but AI to be promoted in regulations.
- AI should also be implemented rigorously in mega programme like Pandit Madan Mohan Malviya Scheme on National Mission of Teacher and Teaching.
- Before initiating the AI and Robotics in teacher education programmes, the system should be adequately prepared.
- The teacher educators should be trained about AI and use of Robots in classroom and teacher education institutions. They should be acquainted about development of material, training transactions modalities, delivery of curriculum and assessment system.
- The action plan before implementation should be prepared.
- The source of funding should be searched.
- The course material should be based on theory papers of teacher education programmes.

In the end, it is concluded that artificial intelligence should be used in teacher education programmes for preparing quality of teachers. Therefore, all the universities and teacher education institutions should introduce and implement AI courses. For this, the Government of India should first make policy changes and appropriate regulations, only then AI courses will be initiated by different institutions and universities in the country. Besides this, AI should also be supported and implemented rigorously in mega programme like Pandit Madan Mohan Malviya Scheme on National Mission of Teacher and Teaching of Government of India.

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Enabling Adversity into Opportunity: A Chain of Cross-cultural Expert Inputs for Undergraduate Students during COVID-19 Pandemic Period

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The nationwide lockdown imposed in March 2020 due to COVID-19 pandemic had led schools and colleges to shut down, instructing students to abandon the usual classroom teaching style. This resulted into an unprecedent increase in the usage of innovation and technology by teachers to finish the curriculum. However, in a country like India remote learning was not available in every family. There were unemployed families who couldn't afford fees and were forced to stop their children's education. Considering this factor and different communication modes, the teachers had to rethink designing lesson plans to fit a diverse group of learners.

The pandemic had also a severe impact on higher education as universities closed their premises and countries shut their borders in response to lockdown measures. Although higher education institutions were quick to replace face-to-face lectures with online learning, these closures affected learning, examinations and evaluation. The crisis raised questions about the value offered by university education including content delivery, student networking and social opportunities unlike what goes in a normal classroom and campus atmosphere. The teachers had the compulsion to learn teaching online, either through training by their institutions or by self-leaning, by using any of the online interfaces than available, free or paid. Even those not very much techno savvy also learned about different online learning platforms.

While teachers and academicians were constrained to teach, attend meetings, or train employees in virtual mode; it provided an opportunity for anxious faculty in higher institutions to tap the academic inputs of experts worldwide to engage their students online through various interactive activities, workshops, dialogues, panel discussions, and collaborative student exchange programs. In most occasions, the opportunity was available free of cost. The faculty members in School of Education, Apeejay Stya University were quick to respond to this available opportunity and started to hold almost one virtual event every week. The experts were ready, the students were willing and the events gained momentum starting from September 2020. In order to engage more students in the programmes, the National Service Scheme and the Rotaract Club of the university were tied up for the activities. All the activities were planned keeping in view the requirements of virtual instructional design. The focus was not simply of hearing to experts, ask questions or interact but the willing students in turn were trained in the different roles of being the host, introducing experts, coordinating question and answer sessions, group work during breakout sessions, and proposing vote of thanks. Such involvement of students in different roles would certainly help them in shaping their future career. When the educational institutions started opening their campus around March 2021 and learning started in face to face or hybrid mode, still important events on a limited scale continued to be organized.

During the pandemic period from September, 2020 to June 2021 (part of Fall semester 2020 and full of Spring semester 2021), at least one activity on an average was organized, and the student participation and their learning were amazing. Apart from the in-country experts, the experts from other countries were invited which included Finland, Japan, United Kingdom, West Indies, UNICEF, Singapore, Greece, Canada and Germany.

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A chronological sequence of the events during the period above is listed below:

5th September, 2020

On the occasion of Teacher's Day, an expert talk by Ms. Sheetal Yadav from the NGO "I Am A Teacher" on experiential learning.

14th September, 2020

Hindi Divas celebrated with a vibrant address by Dr. Kamala Nandan Jha, Professor, AMU and author of "Masti Ki Pathshala".

19th September, 2020

FDP held on New Education Policy 2020 and its Implications for Various Academic Streams.

1st October, 2020

United Nations International Day for Older People celebrated by inviting Shri Ravi Kalra, founder of leading NGO "Earth Saviour Foundation" and a distinguished invitee to the popular television show Kaun Banega Crorepati.

2nd October, 2020

United Nations International Day of Non-Violence and Gandhi Jayanti, celebrated with the "Relevance of Mahatma in 21st Century and NEP–2020", with a benevolent address by Prof. Satish Kumar, Author, Columnist and Ex-Dean, Central University of Haryana.

8th October, 2020

Panel discussion held on "Diet, Nutrition and Educational Outcomes" wherein noted clinical dietician and author Ms. Shreya Singh interacted and attended to the queries by students related to diet, mind, studies and general wellbeing.

11th October, 2020

Celebrated Mental Health Day on 11th October 2020 wherein Prof. Nandita Dev of Kolkata University interacted with students on "Stress, Mental Health and Psychological Well Being".

24th October, 2020

Celebrated United Nations Day on the theme "Revisiting Gandhian Thought in 21st Century and UNO" with a critical analysis by Prof. H.S. Chandalia from JRN Rajasthan Vidyapeeth; an author, social activist and journalist.

31st October, 2020

Expert talk held on "Learning from the Field: Experiences of a Teacher Educator" wherein Dr. Syed Ali Masoom form Azim Premji Foundation interacted with students on the field based and experienced based learning.

3rd November, 2020

Haryana Day celebrated on the theme "Celebrating Haryana: Culture Bhi, Agriculture Bhi" wherein the noted folk artists from Hrayana, Dr. (Mrs) Krishna Arya and Dr. Dinesh Chahal talked, entertained students and addressed to their queries.

11th November, 2020

National Education Day celebrated on the occasion of the birth anniversary of Maulana Abdul Kalam Azad with a webinar on "Sustainable Development: Education and Rural Development" wherein Dr. W.G. Prasanna Kumar, Chairman of MGNCRE, MoE, GoI; Dr Shatrughan Bhardwaj, Regional Coordinator of MGNCRE; and Prof. Raj Dhankar, VC of Apeejay Stya University, were the experts.

19th November, 2020

Held awareness program on "Road Traffic Education" in which Dr. Rohit Baluja, Director of Institute of Road Transport Education (IRTA), Faridabad oriented students on the theme.

3rd December, 2020

Celebrated International Day of People with Disabilities by a Webinar on the theme "Rethinking Disability: From Exclusion to Empowerment" with expert deliberations by Dr. Alok Kumar Bhuwan, founder of 'Manovikas" and specialized in Rehabilitation Science & Special Education, and Ms. Shama Norien Major, Asst. Prof. in Special Education, Lady Sriram College, Delhi.

10th December, 2020

Celebrated Human Rights Day with an expert interactive talk on the theme "Stand up for human rights" delivered by Ms. Ira Singhal, IAS topper, despite being physically challenged.

17th December, 2020

Held an interactive session on Sustainable Development Goals (SDGs) – 2030 in which Dr. Mritinjay Cahubey, Global Vice President, UPL Ltd talked upon the theme Sustainability, Environment and Business.

22nd December, 2020

Celebrated Mathematics Day on the occasion of the birth anniversary of noted Indian mathematician Srinivasa Ramanujan. The guest for the event was Dr. Rajesh Kumar Thakur, a noted columnist, writer and mathematician.

16th February, 2021

Student Collaboration Programme on youth leadership held online with University of Hyogo, Japan (40 students) which began on 16th Feb 2021 and held for six days. The other two participating countries were Phillipines and Nepal.

6th March, 2021

As part of an international collaboration, held interactive session with Olemisen Balanssia (Digital Pedagogies), a Finland based Educational Technology and Solutions organization, participated by three officials from the organization. They also interacted with five identified students from the university who displayed their digital work and creativity.

8th March, 2021

International Women's Day celebrated with three women guest speakers representing three themes – Women in Folklore and Culture*, Women in Science, Gender Justice in India: Need for Social Transformation.*

18th March, 2021

In collaboration with Medanta, organized webinar on the theme "Gut Health: Secret to Healthy Childhood and Adulthood" wherein Dr. Neelam Mohan (Director, Paediatric and Gastroecenterology and Hepatology) was the expert resource person.

23rd March, 2021

Held a book discussion session on "Becoming a Teacher: The Legal, Ethical and Moral Implications" wherein the author Alan Newland interacted with the students on the theme at length.

27th March, 2021

Organized webinar on "Research & Publication Ethics: The Way Forward" wherein Dr. Pradeep K. Sahu, Asst. Prof. from University of West Indies, Trinidad and Tobago was the resource person.

6th April, 2021

Organized international webinar on "Juvenile Justice: Imperatives for Progress" wherein the resource person was Ms. Kristiana Kuneva, Research Officer from UNICEF. The participants included students and teachers from countries like Venezuela, Philippines, Thailand, Bangladesh, Nepal and India.

13th April, 2021

An international wellness webinar titled "Be Unstoppable" was held wherein Ms. Karen Cruise from Young Peoples' Life Coach, Leeds (UK) was the resource person.

20th April, 2021

An orientation-cum-workshop on Non-violent Communication in Dialogues was organized wherein Dr. Vedvyas Kundu, Program Officer from Gandhi Smriti and Darshan Samiti was the resource person.

29th April, 2021

Held international webinar on "The Concept of Self: Who Am I?" with expert inputs by Dr. Mvikeli Ncube, a faculty and chartered psychologist from Arden University.

4th May, 2021

Organized international e-workshop on "Experiential Learning in Mathematics" in collaboration with SCERT, Haryana wherein Dr. Jeyanti Subramaniam, renowned mathematician and founder of EMS (Experiential Maths Solutions), Singapore; and Sh. Sunil Bajaj, Dy. Director of SCERT, Haryana and noted award winning mathematics teacher, were the resource persons.

11th May, 2021

Held an international webinar on "Sustainable Development Goals and STEM Education: The

Roadmap Ahead" wherein Ms. Rania Lompu from the Directorate of Educational Technology and Innovation, Greece; and Mr. Vikas Dixit, Sr. Scientist from National Informatics Center, GOI; were the resource persons.

15th May, 2021

Held international webinar on "Social and Emotional Learning: The Way Forward" which was addressed by resource persons like Margaret Boersma from Creative Education in Action (CEA), Canada; Dr. Rishi Goel, Director of SCERT, Gurugram; and Sh. Sunil Bajaj, Dy. Director, SCERT, Haryana.

25th May, 2021

Celebrated 128 years of Gandhiji's visit to Durban, South Africa on the theme "M.K. Gandhi in South Africa: Whose Example Did He Follow and Why" with an expert talk by Dr. Christian Bartolf, President of Gandhi Information Center (GIC), Berlin, Germany.

5th June, 2021

The World Environment Day was celebrated on 5th June 2021 by NSS students by planting at least one sapling at home.

The theme wise number of events held is summarized below:

- Experiential learning – 6
- Inclusive education – 2
- Peace, non-violence, human rights and ethics - 8
- Health education and mental health – 3
- Sustainable development – 3
- Awareness, orientation and sensitization – 7
- Leadership development – 2

The campus opened for physical presence of students and employees from November 2021 and the classroom teaching commenced in a hybrid mode, but the activities continues on relevant themes as and when required. The events were memorable and in certain cases the participating students had received certificates. Apart from learning, the activities not only helped students utilize their time constructively but also strengthened the teacher-student relationship and the peer group relationship. ❑

Play With Technology But Not With Human Element of Life

Narendra Damodardas Modi, Hon'ble Prime Minister of India delivered the Convocation Address at the 54th Convocation Ceremony of Indian Institute of Technology, Kanpur on December 28, 2021. He said, "There is no fear of the unknown anymore. Now you have to move ahead to explore the entire world with conviction. Instead of the query of the unknown, there is now a quest for the best, the dream to conquer the world. Your training, skills and knowledge will definitely help you to make a strong place in the practical world. The personality that you have developed here will give you a strength with which you will benefit the society as a whole, give new strength to your society and your country." Excerpts

Today is a day of double happiness for Kanpur. Today, on one hand, Kanpur is getting Metro facilities, while on the other hand, the world of technology is getting invaluable gifts like you from IIT Kanpur. I wish all my young friends all the best. Congratulations to the students who have been honored today. Your parents, family members, teachers, professors and countless others have also contributed behind your degree. I heartily congratulate all of them, especially your parents.

In between getting admission to IIT Kanpur and your graduation today, you must be experiencing a huge change in yourself. You must have had the fear of the unknown, a query of the unknown before you came here. Earlier, the scope of your knowledge and queries was limited to your school, college, friends, family and loved ones. IIT Kanpur has brought you out of that and given you a huge canvas. There is no fear of the unknown anymore. Now you have to move ahead to explore the entire world with conviction. Instead of the query of the unknown, there is now a quest for the best, the dream to conquer the world. As much learning that took place in your classrooms, you have experienced as much outside your classrooms, among your peers. Your ideas expanded in classrooms whereas your personality expanded and evolved outside the classrooms. What you have earned in IIT Kanpur and the ideas that have been enriched is such a strong foundation and force that you will do something new, unique and add some value wherever you go. Your training, skills and knowledge will definitely help you to make a strong place in the practical world. The personality that you have developed here will give you a strength with which you will benefit the society as a whole, give new strength to your society and your country.

You have lived the historical period of the magnificent legacy of IIT here. You have lived the present with the splendor of a diverse India. You are embarking on your journey to a brighter future on a magnificent legacy and vibrant present, the two pillars, the two tracks. May this journey be auspicious and may it be full of successes for the country! This is my wish for all of you.

This year India has entered the 75th year of its independence. We are celebrating Amrit Mahotsav. Kanpur, from where you got your degree, has its own glorious history. Kanpur is one of the few cities in India that is so diverse. From Satti Chaura Ghat to Madari Pasi, from Nana Saheb to Batukeshwar Dutt, when we visit this city, it seems as if we are visiting that glorious past, the glory of the sacrifices of the freedom struggle. In the midst of these memories, you all have the responsibility to guide the country for the next 25 years, to give momentum to the country. Imagine when the Dandi Yatra was launched in 1930, it had agitated that time period, the entire country. The country was so charged up at that time that it had created an unprecedented faith in the people of India for independence and had filled the minds of every Indian with the faith of victory. The period of 1930 was the golden phase in the life of the youth who were 20-25 years old for their journey till 1947 and the achievement of independence in 1947. In a way, you are also stepping into the golden era. This is the golden era for you. Just as it is the virtuous period for the nation, it is also the virtuous period of your life. When you are graduating with the legacy of IIT during the *Amrit Mahotsav*, carry with you the dreams of what will be the India of 2047. In the next 25 years, you have to take the reins of India's development journey. You will have to take

the initiative now for what India will be like when you will complete 50 years of your life. And I know, Kanpur IIT, the atmosphere here, has given you that strength that now no one can stop you from fulfilling your dreams. This era, this 21st century, is completely technology-driven. In this decade also, technology is going to dominate in different fields. Life without technology would be incomplete in a way. This is the age of competition of life and technology and I am sure you will be ahead in this. You have spent important years of your youth in becoming an expert in technology. What could be a bigger opportunity for you? You have a huge opportunity to contribute in the field of technology in India as well as in the entire world.

Our IITs have always been the incubation centers of talent and technology and IIT Kanpur has its own distinct reputation. The world's first floating CNG filling station at Khidkiya Ghat in Banaras, which you have developed through your own company Aquafront Infrastructure, is the best. Similarly, you have developed the state of the art technology in the field of agriculture, created the world's first portable soil testing kit. In 5G technology, the skills of IIT Kanpur match global standards. This institute deserves congratulations for many such successes. As such, your responsibilities have multiplied. Today, there is a huge scope in the field of Artificial Intelligence, energy and climate solutions and high-tech infrastructure in the country. Even sectors like health are becoming technology-driven today. We are entering the era of digital diagnosis, the era of robot-assisted treatment. Health devices have now become essentials at home. We can also face the challenges in disaster management only through technology. Imagine we are at the threshold of so many possibilities. These possibilities are for you, you have a big role in them. These are not only your responsibilities towards the country, but these are the dreams that have been lived by so many generations. You and your generation have got that privilege to make those dreams come true, to make a modern India.

The 21st-century era you are in today is about setting big goals and putting all your energy into achieving them. The thinking and attitude of the country are same as yours. In the past, if the thinking was to work somehow, then today the thinking is to do something different, to get the best results. In the past, if there was an attempt to avoid problems, today resolutions are made to solve the problems. That too, permanent solutions! *Aatma Nirbhar Bharat* is a great example of this.

We have often seen that when someone turns 20-22, the elders of the family repeatedly tell him to stand on his feet. And I am sure that when you go home from here, the first thing you will hear from your parents is that their duty is over and now it is time for you to stand on your own two feet. Every parent is going to say this and if there is any delay, then you will have to hear it again and again. The elders and parents do this so that you become self-reliant, you recognize your potential and you turn your dreams into resolutions and commit wholeheartedly to achieve them. Even our India started its journey anew after independence. When 25 years passed since the independence of the country, we too should have done a lot to stand on our own feet. It is too late since then; the country has lost a lot of time. Two generations have passed in between, so we don't have to lose even two moments.

You must be finding impatience in my words and it is natural that you must also be feeling impatient. When I am among all of you on the land of Kanpur, I also want you to be impatient for a self-reliant India. Self-reliant India is the very essence of complete independence, where we will not depend on anyone. Swami Vivekananda had said — Every nation has a message to deliver, a mission to fulfill, a destiny to reach. If we are not self-reliant, how will our country achieve its goals and reach its destination?

You can do this. I trust you. And when I am saying so many things today, doing so many things, I see your face in them. I see your face behind the changes that are taking place in the country today. The country will also get the power to achieve the goals that the country is setting today. You are the ones who will do it and you have to do it. These infinite possibilities are for you, and you have to realize them. When the country celebrates 100 years of its independence, that success will have the smell of your sweat and your hard work will be recognized. And you know very well how the country has worked over the years to lay the foundation of the *Aatma Nirbhar Bharat* to make your job easier. In the last seven years, programs like Start-up India, Stand-up India have been launched in the country. The country is creating new avenues for the youth through the Atal Innovation Mission and the PM

Research Fellowship. With the National Education policy, a new generation of futuristic temperament is being prepared. The ease of doing business has been improved, policy blockades have been removed and the results of these efforts are before us in such a short time. In this 75th year of independence, we have more than 75 unicorns, more than 50,000 start-ups. Of these, 10,000 start-ups have emerged only in the last six months. Today, India has emerged as the second largest start-up hub in the world. So many start-ups have been started by the youth of our IITs. According to a recent report, India has become the third largest unicorn country in the world, leaving behind many developed countries.

Nowadays, there is talk of globalization and also its pros and cons. But there is no dispute over one thing. Who wouldn't want Indian companies to be global, India's products to be global? One who knows IITs and knows the talent here, knows the hard work of the professors here, he believes that the youngsters of IITs will do it. And today, I also want to assure professionals like you that the government is with you in every way.

You have to remember another important thing. Many people will also suggest shortcuts for convenience in the journey which is going to start from today. But my advice would be that if you have to choose between comfort and challenge, then choose the challenge and not comfort, because, whether you like it or not, life is full of challenges. Those who run away from them become their victims. But if you are looking for challenges, you are the hunter and the challenge is the hunted. Therefore, you have to be a human being who seeks out problems; and finds solutions according to your own choice. Friends, all of you are the finest tech minds of IIT. You all eat, drink and breathe technology. You are constantly engaged in innovations. Yet, in the midst of all this, I have a request. Technology has its own strengths, there is no harm in that and this is also your passion. But while living in the world of technology, you should never forget the human element of life. You should never create your own robot versions. You should keep alive your feelings, your imaginations, your creativity and your curiosity. You should also give importance to those things in your life, which we do not necessarily get only with the help of technology. You should definitely work on the Internet of Things but do not forget the emotion of things. You should definitely think about Artificial Intelligence but should also remember human intelligence. You should continue coding but should also maintain your connection with people. Your association with different people, people of different cultures, will only improve your personality. It shouldn't be that your brain does H.T.T.P 404 – page not found when it comes to exhibiting emotions. When it comes to sharing, sharing of joy and kindness, never keep a password; rather enjoy life with an open heart. By the way, when I mentioned sharing of joy, I know these words must be reminding you of so many things. You are going to miss gossip at Sagar Dhaba and Kerala Café, the taste of the Campus Restaurant, Coffee of CCD, Kathi Rolls at O.A.T, tea and jalebi at M.T., Tech-Kriti and Antaragni. This is the name of life. Places change, people meet and leave, but life goes on. This is called '*Charaiveti, Charaiveti, Charaiveti'* (keep going). I see many students listening to me from other lecture halls due to the Corona protocol. If I have your permission and there is no problem with protocol then I will go there to meet you in person. May you succeed in your career, may your success be the success of the country! With this wish, I put an end to my speech. Best wishes to all of you once again.

Thank you very much! ❑

CAMPUS NEWS

Padma Award to Prof Vyas, Prof Dash and Prof Bedi

The Padma Awards are the most prestigious awards given in various disciplines /fields of activities, viz. art, social work, public affairs, science and engineering, trade and industry, medicine, literature and education, sports, civil service, etc. The Awards are announced on the occasion of Republic Day every year. This year the President of India has approved conferment of Padma Awards to 107 persons in which 34 awardees are women. It is a matter of great pride for the Higher Education Community that among various achievers, three academicians namely, Prof. Harmohinder Singh Bedi, Chancellor, Central University of Himachal Pradesh, Dharamshala; Prof. Jyantkumar Maganlal Vyas, Vice Chancellor of National Forensic Sciences University, Gandhinagar, Gujarat and Prof. Aditya Prasad Dash, Vice Chancellor, Asian Institute of Public Health, Bhubaneswar honored with Padma Shri for their distinguished services in their respective fields.

Prof. Harmohinder Singh Bedi is the Chancellor, Central University of Himachal Pradesh, Dharamshala. He is presently serving as Council Member of Indian Council of Social Science Research (ICSSR), MoE, GoI and Member of National Monitoring Committee on Minority Education, GoI. Prof. Bedi has also served as Professor Emeritus, Punjabi University, Patiala from 2012 to 2014. He retired as Professor and Head of Department of Hindi, Guru Nanak Dev University, Amritsar, where he also served as Dean and Director of Chairs of Bhagat Kabir, Satguru Ram Singh and Swami Vivekanand. Apart from several regional rewards and honours, he is felicitated by the President of India by the Award of Hindi Sevi Puruskar (2017) and Punjab Government by the award of Shiromani Hindi Sahitkar (2004) for his contribution to the field of Hindi language. He has also served as Hindi Advisor to the Ministry of Labour and Employment and Ministry of Consumer Affairs, Food and Public Distribution, GoI. He has also been on the panel of National Language Council, GoI for preparing Draft of the New Education Policy.

An academician par excellence, his research in the area of exploring cultural and religious contribution of Punjab to Hindi literature has earned him special feet among the academic fraternity. His three volume edited work on '*Shardha Ram Phillauri*' has reoriented the history of Hindi literature. He has widely travelled far and across India for the promotion of Hindi language. For the last decade his special focus has been on the SAARC countries and to work for building their cultural relations through their shared cultural and religious heritage. He has written and edited over thirty books and has published on all major national journals of Hindi. He has been regularly writing columns for several Hindi newspapers. A poet at heart (has written over five books) and a powerful orator, his irresistible charm mesmerizes one and all.

Dr Jyantkumar Maganlal Vyas is the Vice Chancellor of National Forensic Sciences University, Gandhinagar, Gujarat. From 1993 to 2009, he served as the Director of Forensic Science, Gujarat State and he still holds the additional charge of the same. Dr. Vyas served as the Governing Council Member of the Association of Indian Universities (AIU), New Delhi. He was awarded the President's Police Medal for meritorious services in the field of crime investigation in 1997. He was also adjudged as the Best Forensic Science Laboratory Director of the country and was awarded a Commendation Certificate by the Deputy Prime Minister at the 15th All India Forensic Science Conference in 2004. Dr Vyas was awarded the 'Lifetime Achievement Award' in the area of Forensic Chemistry by Amity University and All India Institute of Medical Sciences, New Delhi, in October, 2008. He holds a large number of publications, in various journals of national and international repute and is a very well known Forensic Expert of the Country. He was chosen to the INTERPOL Forensic Science Symposium's Organizing Committee in 2010 and re-elected for the terms 2011 to 2013.

Prof. Aditya Prasad Dash, Vice Chancellor of Asian Institute of Public Health, Bhubaneswar. He is also the former Vice Chancellor of Central University of Tamil Nadu. Also the ex-regional adviser to World Health Organization (SEARO), Prasad Dash hails from the eastern state of Odisha. Prof. Dash is also the former Vice Chancellor of Central University of Tamil Nadu. Also the ex-regional adviser to World

Health Organization (SEARO), Prasad Dash hails from the eastern state of Odisha. For his work in the field of Zoology and diseases, Prof. Dash has received numerous awards. These include the Lifetime Achievement Award by International Association of Educators for World Peace, INBUSH Award for outstanding scientific contribution by Amity University, and the Dr. AP Ray Award for outstanding contributions in Malaria research by the government of India. His fields of expertise include biomedical science, transmission biology of tropical disease, and modern biology of disease vectors. According to *Vidwan,* the national network for researchers and experts, Prof. Dash has authored 320 publications. In addition, he has co-authored 699 publications.

Prof. Aditya Prasad Dash completed his PhD (Zoology), DSc and MSc degrees from Utkal University in Bhubaneswar, Odisha. He has made significant contributions in the field of malaria and Vector Borne Diseases (VBD). His contributes include developing numerous tools and technologies in tackling vector-borne diseases. For more than 35 years, Prof. Dash worked at the Institute of Life Science and Indian Council of Medical Research.

AIU Fraternity congratulates Prof. Harmohinder Singh Bedi, Dr. Jyantkumar Maganlal Vyas and Prof. Aditya Prasad Dash for their achievement in the field of Higher Education and wishes them many more such awards in the years to come.

National Education Day Celebration

The National Education Day was celebrated by the Department of Education, Gandhigram Rural Institute (Deemed-to-be-University), Gandhigram, Dindigul, Tamil Nadu on November 11, 2021. The Day was observed to commemorate the Birth Anniversary of independent India's first Education Minister, Maulana Abul Kalam Azad. Dr. A Jahitha Begum, Professor and Head, Department of Education welcomed the gathering and Prof. TT Renganathan, Vice Chancellor (I/c) of Gandhigram Rural Institute delivered the presidential address. In his address, he pointed out the important role of teachers in Nation building, how education served as a weapon to rise from poverty, the importance of discipline integrated education, the achievements and contributions of Dr. Abul Kalam Azad and asked the teachers 'Not to teach students but make the students to learn'.

Dr. VPR Sivakumar, The Registrar of Gandhigram Rural Institute highlighted the need of developing students with leadership capacity, confidence to face the challenges in life, teachers being artistic in teaching. He also emphasized that teachers should be the role models with knowledge and skills. He recalled the teachers of his own time who were responsible to acquire a high position in society.

The Chief Guest, Dr. S A Noorul Hassan (MBBS, MD), Consultant Psychiatrist, Tirunelveli, in his special address congratulated the department for the celebration of the significant day and explained the meaning of Education and the role of education in shaping human personality, importance of psychology and role of teachers, parents in shaping the individual. Besides, he quoted the words of Lord Macalay who acknowledged 'Spirituality' and 'Cultural Heritage' for the uniqueness of Indian land. Dr. Hassan delineated the significance of 'Parenting, Environment and Education' as essential element of moulding the children. Then, he focused on Erikson's eight stages of development especially, the 5th stage 'Identity and Role Confusion' for which education should contribute more to the students. Bloom's Taxonomy, the concept of Mirror Neurons System along with the challenges faced by teachers were also discussed by the Dr. Hassan.

Dr. Bagtha Vatchala Perumal, Assistant Professor, Department of Education, Gandhigram Rural Institute (Deemed-to-be-University) called the winners and participants of the competitions of Elocution, poem writing, essay writing, drawing for prize distribution ceremony. Prizes were distributed by the Registrar and the Chief Guest. The Vote of Thanks was proposed by Dr. P S Sreedevi, Assistant Professor, Department of Education. The programme was coordinate by Dr. N Devaki, Dr. A Thangasamy, Dr. M Deivam and Dr. A Sathiyaraj.

Workshop on Research Methodology

A ten-day Workshop on 'Research Methodology' is being organized by the Gujarat National Law University, Gandhinagar, (Gujarat) during February 19-28, 2022.

Research is the basis of creativity and innovation. Academic research seems to be the most acceptable and influential element in higher education. The institutions of higher education are focusing on competence-based teaching, especially for Master and Ph.D. level

education. Although many Indian universities have been ranked among top 500 institutes by QS ranking, Indian learners and educators are still facing crucial challenge in creating, nurturing and maintaining the level of quality research. It is essential to develop a sound methodological base of research among the researchers to cope up with challenges in the field of research. Therefore, the current workshop is an effort to enrich the research scholars on research methodology. The workshop will provide students with an overview of the different dimensions of research. The Topics of the event are:

- Research Integrity, Ethics, and Anti Plagiarism Rules.
- Qualitative and Quantitative Research.
- E-resource Efficacy for Research.
- Sampling and Sample Size Calculation.
- Literature Review and Importance of Citation.
- Tools and Techniques of Data Collection.
- Formulating Research Problem, Objectives, Research Question and Hypothesis.
- Data Analysis (Quantitative and Qualitative).
- Conceptualizing Research Design.
- Funding Avenues in Social Science Research.

For further details, contact Course Coordinator, Dhanya S, Assistant Professor, Research, Gujarat National Law University, Gandhinagar-382426 (Gujarat), E-mail: *icssr2022@gnlu.ac.in.* For updates, log on to*: www.gnlu.ac.in/Research/News/*

International Research Conference and Doctoral Workshop

A ten-day International Research Conference and Doctoral Workshop is being organized by the Indian Institute of Management Lucknow (Noida Campus) during December 07-11, 2022. The doctoral and general candidates may participate in the event.

Globally we are witnessing increased interest in many management and policy level initiatives which require looking at national and global developments from different perspectives. Understanding of effective firm operations and societal wellbeing is critical for overall growth in an economy. In an increasingly unpredictable era of rapidly changing technology, collective crisis such as COVID-19, globalization and the rise of social media managing robust supply chains, efficient production, marketing, financial management and employee engagement has become even more challenging. This three-day conference will give a platform to exchange thought-provoking ideas and issues in various business functions and domains of management. The forum will emphasize capacity building to help render research into effective management practices. The following management disciplines centered around the respective tracks are:

- Tracks in Economics.
- Tracks in Information Technology and Systems.
- Tracks in Finance.
- Tracks in Communication.
- Tracks in Marketing.
- Tracks in Sustainability.
- Tracks in Decision Sciences.
- Tracks in Operations Management.
- Tracks in OB/HRM.

For further details, contact Convener: Prof. Samir K Srivastava, Dean, Research, Indian Institute of Management Lucknow Prabandh Nagar, IIM Road, Lucknow-226013. E-mail: *airc@iiml.ac.in.* For updates, log on to*: www.iiml.ac.in*

World Conference on Feminist Futures in Precarious Times

A three-day World Conference on 'Feminist Futures in Precarious Times: Decoloniality, Borderlands, and Transformative Visions' is being organized by The International Institute of Knowledge Management (TIIKM), Sri Lanka during May 12-14, 2022.

How can feminisms and Women's Studies help scholars, policymakers, students, and practitioners navigate the complex precarity of the world today? Climate emergencies are producing climate refugees. Billionaires, horde the world's resources while others starve from inequitable policies exacerbated by human exponential population explosion, loss of biodiversity in a 6th mass extinction, and global pandemic. These are precarious times indeed, especially for the most vulnerable among us, women and children, particularly those of marginalized, minoritized social statuses—caste, race, ethnicity, religion, sexuality, disability and the like. Even

among those of us who are more privileged, mental health crises are rising through the daily stresses of inflation, poor air and water quality, difficulties accessing health care and other services, long working hours, battling stereotypes and micro-aggressions, combined with the existential awareness of overarching planetary problems. Most ironic, is that many of the ideas for how to transform current realities exist. The problem is in the intractability of human socio-cultural, political, and economic systems, slow to move, stifled by those in power.

Feminists have galvanized change in societies worldwide for over a century and a half and must continue to do so, in spite of pushback. In fact, pushback is the inevitable response when the status quo is threatened by those who think they have the most to lose and who measure their loss in material wealth and the capacity to make decisions over others. Thus, humanity is always in need of transformative visions—visions for how to enact change, visions about the nature of change. Feminist decolonial curricula and scholarship, meaningful across borders, are increasingly shedding light on global histories of multiple colonizations, power abuses, and imperialisms. Their truths and pathways for decolonizing minds and bodies can uplift our spirits in hope of a different imaginary. Coalitions built across borderlands, galvanized by optics that are egalitarian, equitable, humane, ecological, queer/non-binary, must be taught in new pedagogies, inspiring the young, creating new social structures in the home, among peers and colleagues, in the workplace, in governing bodies. They must be translated into languages that all understand to bring about the great changes that we need. The Topics of the event are:

- Queer Optics and Feminism.
- Land rights.
- Reproductive Politics.
- Precarities and Vulnerabilities.
- Protests and Uprisings.
- Black Lives Matter.
- Dalit Lives Matter.
- Climate Refugees.
- Gender Equality and Educational Systems.
- Toxic Masculinity.
- Resocialization of Men.
- Socialization of boys.
- Legal remedies.
- Implementing law.
- Law and accountability.
- Inheritance rights.
- Gender and Sexual Diversity.
- Women's Human rights.
- Women, Climate Change and Inequality.
- Women Empowerment and Social Change.
- Challenging Male Dominance.
- Consciousness-raising.
- Men as allies in the struggle.
- Women and Sports.
- Women, Media and Technology.
- Transgender Rights and Sexual Diversity.
- Women's Success Stories.
- Cyber Feminisms—Blogs, Zines, and Reproductive Rights.
- Activist Art.
- Feminism and decolonial praxis.
- Women's Spirituality and Religion.
- Trafficking and Prostitution.
- Women in Politics and Public Administration.
- Women and Religion.
- Women and Islamic Sharia.
- Motherhood and Work-Life Balance.
- Equity and Equality.
- Laws and Policies.
- Gendered and Sexual Diversities.
- Gendering the COVID-19 Pandemic.
- Gender and Intersectionality.
- Feminist Pedagogy and Writing.
- Gender and Migration.
- Climate Crisis and Environmental Activism.
- Women's Vulnerabilities.
- Popular and Folk Cultures.
- Feminism and Nationalism.

For further details, contact Organising Secretary, International Institute of Knowledge Management, #531/18, Kotte road, Pitakotte, Sri Lanka, Phone No: +94 117 992 022, Fax: +94 112 835 571, Hotline: +94 765 733 737.E-mail: *isanka.gamage@tiikmedu.com. For updates, log on to: www.tiikm.com* ❑

THESES OF THE MONTH

SCIENCE & TECHNOLOGY
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of November-December, 2021)

BIOLOGICAL SCIENCES

Biotechnology

1. Parveen, Shahana. **Role of IL-33 in mediating inflammatory response in immune cells**. (Dr. E. Berla Thangam), Department of Biotechnology, SRM University, Kattankulathur, Chennai.

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