Moodle-enabled Blended Learning Implementation at RGUKT: A Facilitator's Perspective

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moodlemoot INDIA 2018

Indian eLearning Scenario – Need for an LMS

MHRD policy initiatives and Regulatory & Accreditation Bodies' regulations and frameworks insist HEIs on:

- Integrating technology with higher education for effective teaching-learning process and making learning individualized and dynamic
- Familiarizing teachers with a Learning Management System (LMS)
- Providing additional learning resources, creating and delivering 'e-Learning Material' (eLM) through an LMS
- Meaningfully integrating 'e-Learning Material' (eLM) with an LMS
- Using an efficient LMS to keep track of learner's engagement, assessment and results
- Engaging students through an LMS in active learning and learning activities that address a variety of learning styles and preferences
- Enabling LMS with facility of analytical tools, other advanced tools

eLearning Implementation Challenges

- Inadequate Infrastructure
- Lack of Institutional / stakeholders readiness
  - No policy initiatives and strategies
  - Lack of support from key players
  - Lack of awareness of Open Source Technologies
  - Fewer technologically skilled and pedagogically sound teachers
  - Low digital literacy
  - Fewer eLearning support staff

COMMONWEALTH of LEARNING

TEL Initiative

- COL Technology-Enabled Learning (TEL) focuses on "Policy-Technology-Capacity" and supports academic institutions in
  - Developing 'ICT in education' and Open Educational Resources (OER) policies and strengthening policy implementation
  - Promoting use of open source technologies (Moodle & DSpace)
  - Building capacity amongst educators for designing and developing blended and/or online courses
  - Delivering technology-enabled learning programmes
  - Researching on technology-enabled learning (TEL) for evidence-based advocacy and decision-making

COMMONWEALTH of LEARNING (COL)

- An intergovernmental organisation created by Commonwealth Heads of Government in 1987 to
  - promote development & sharing of open learning & distance education knowledge, resources & technologies
  - help governments, institutions and organisations expand the scale, efficiency and quality of learning through open, distance and technology-based approaches
  - provide Commonwealth citizens greater access to quality education (SDG 4) and training through open, distance and technology-enabled learning (TEL)

COMMONWEALTH of LEARNING (COL)

Africa

- Botswana
- Cameroon
- Eswatini
- Gambia, The
- Ghana
- Kenya
- Lesotho
- Malawi
- Mauritius
- Mozambique
- Namibia
- Nigeria
- Rwanda
- Seychelles
- Sierra Leone
- South Africa
- Tanzania
- Uganda
- Zambia

Asia

- Bangladesh
- Brunei Darussalam
- India
- Malaysia
- Pakistan
- Singapore
- Sri Lanka

Caribbean & Americas

- Antigua and Barbuda
- Bahamas, The
- Barbados
- Belize
- Canada
- Dominica
- Grenada
- Guyana
- Jamaica
- St Kitts and Nevis
- Saint Lucia
- St Vincent and The Grenadines
- Trinidad and Tobago

Europe

- Cyprus
- Malta
- United Kingdom

Pacific

- Australia
- Fiji
- Kiribati
- Nauru
- New Zealand
- Papua New Guinea
- Samoa
- Solomon Islands
- Tonga
- Tuvalu
- Vanuatu

Rajiv Gandhi University of Knowledge Technologies
రాజీవ్ గాంధీ వైజ్ఞానిక సాంకేతిక విశ్వవిద్యాలయం, నూజివీడు
Catering to the Educational Needs of Gifted Rural Youth of Andhra Pradesh

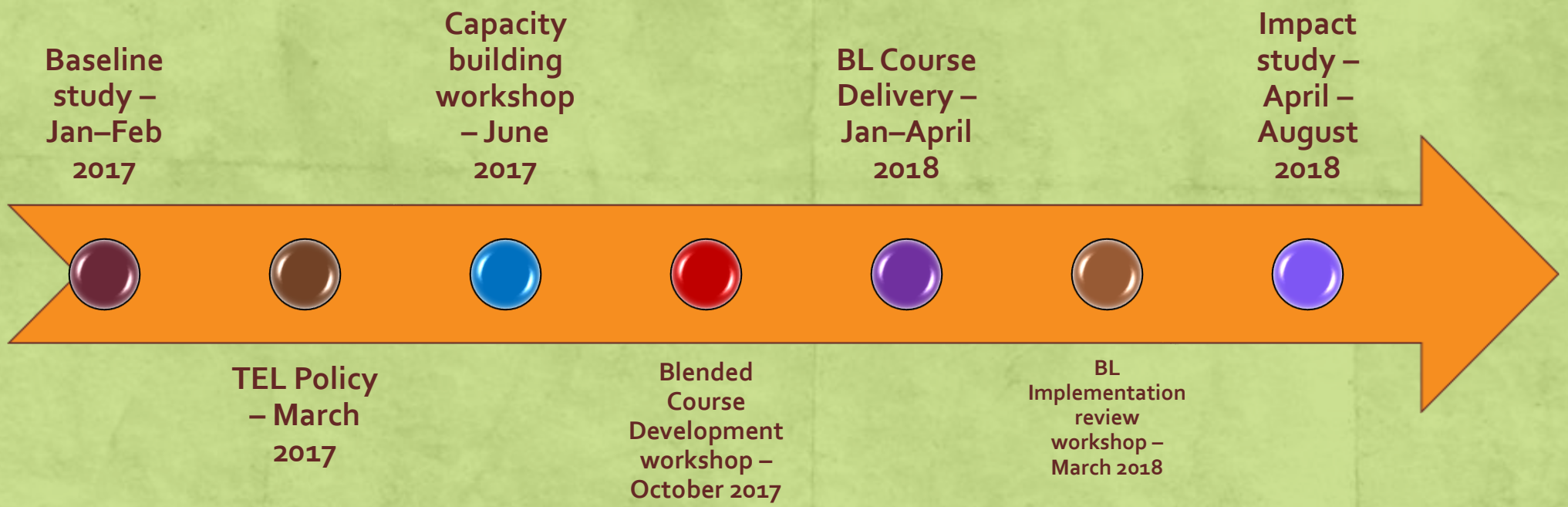
(RGUKT)

- Established in 2008 for providing high-quality educational opportunities for rural youths of Andhra Pradesh
- Offers a 6-year integrated B. Tech. programme
- Admits top 1% of the rural students
- Since its inception university adopted ICT-based pedagogy
- Provides free laptop and Wi-Fi connectivity to students and teachers
- Director, Centre for Educational Technology and Learning Sciences is responsible for TEL implementation

COL-RGUKT TEL Partnership

- Commonwealth of Learning partnered with Rajiv Gandhi University of Knowledge Technologies (RGUKT) in 2016 to deliver quality education through Technology-Enabled Learning

COL-RGUKT BL Implementation Timeline



Blended Learning

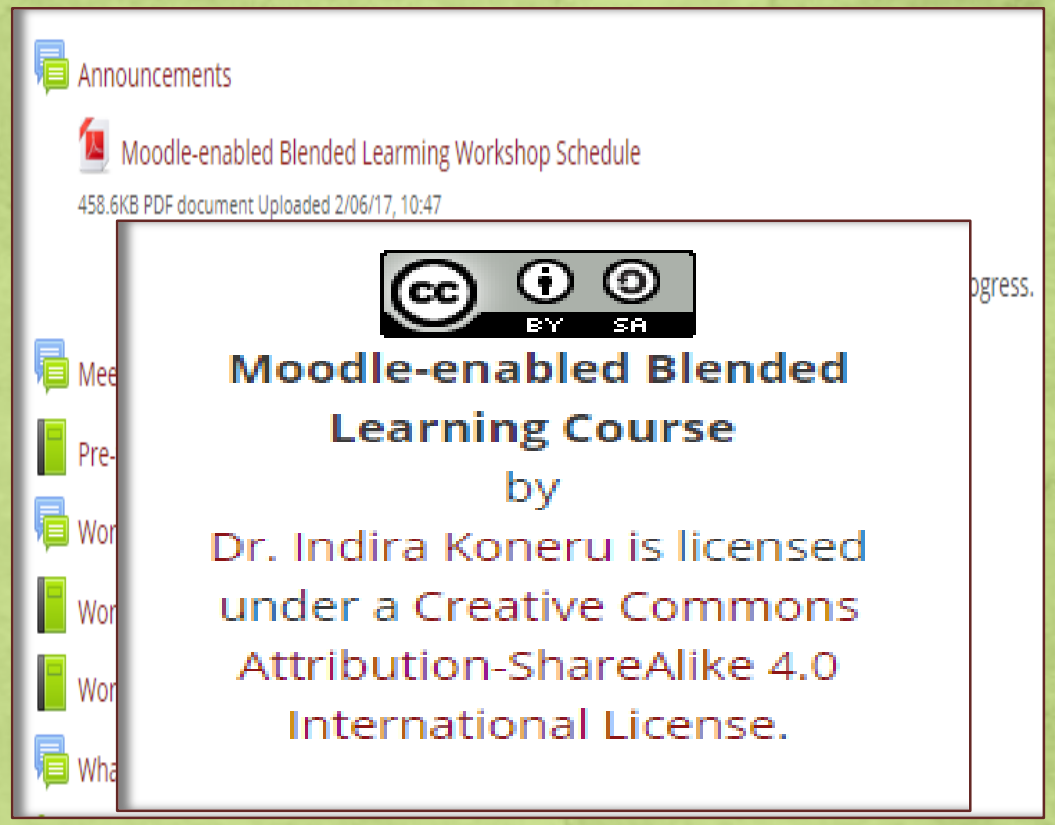
- Is a blend of face-to-face instruction and online learning
- "A formal education programme in which a student learns at least in part through online learning, with some element of *student control* over *time, place, path, and/or pace*; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience" (Christensen, Horn and Staker, 2013)
- "the *organic integration of thoughtfully selected* and complementary face-to-face and online approaches" (Vaughan, Garrison, & Cleveland, 2013)

3-Day Capacity Building Workshop on Developing Blended Learning Courses using Moodle

- Organised by Centre for Education Technology and Learning Sciences, RGUKT at Nuzvid, on June 5-7, 2017
- 28 participants
  - 15 from Nuzvid
  - 13 from RK Valley Campus
- Workshop outcomes
  - Design a blended learning course (integrating OER)
  - Create a course introductory video (Screencast-O-Matic)
  - Explore Moodle functionality and modules
  - Manage resources in multimedia (File, Folder, URL, Page, Book modules)
  - Integrate OER with Moodle course (Page & Book module)
  - Create learning activities and assessments (Forum, Choice, Assignment, Quiz)
  - Grade student's performance online
  - Provide feedback

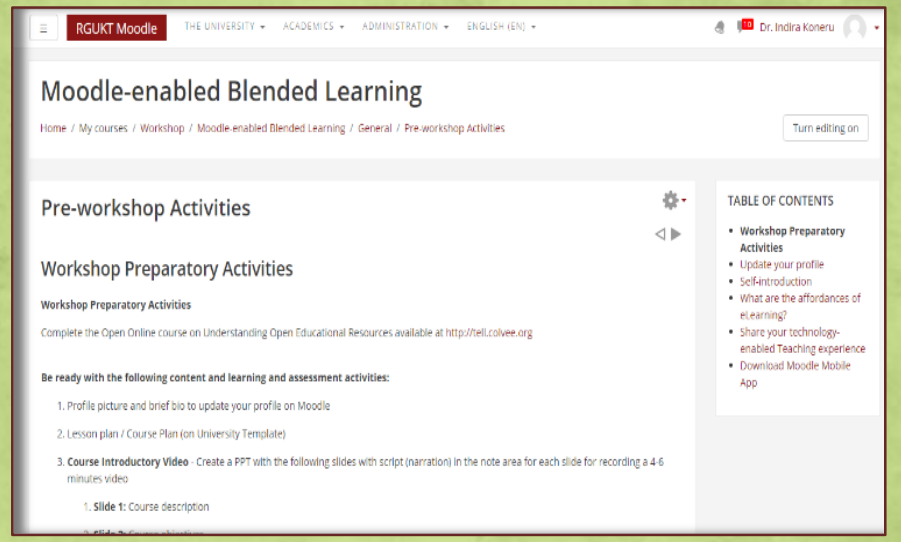
Workshop Preparatory Activities

- Configured RGUKT's Moodle site
- Installed plugins
- Created courses and assigned teacher role
- Created Moodle-enabled Blended Learning course for:
  - Sharing workshop presentations & videos on blended learning
  - Sharing Moodle course management workflow & documentation on Moodle resources and activities
  - Communicating pre-workshop, in-workshop and post-workshop activities
  - Addressing queries etc.
- Enrolled RGUKT Faculty Members as students in the course Moodle-enabled Blended Learning course

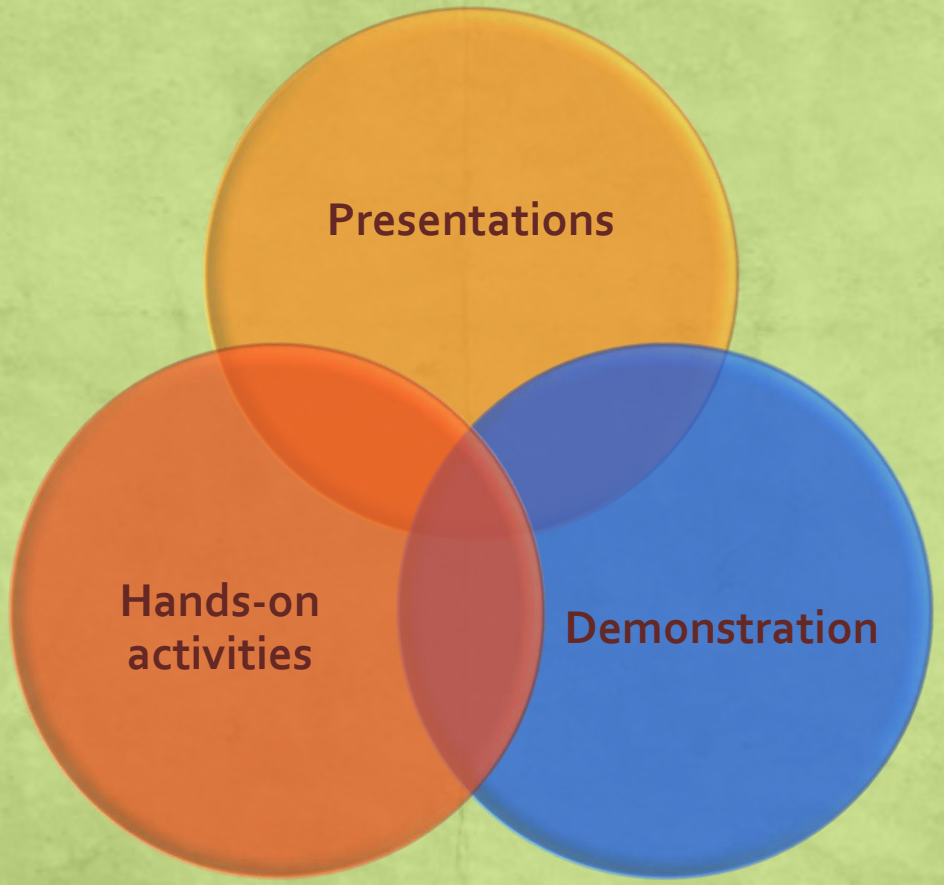


Workshop Preparatory Activities (Contd.)

- Creating Course Introductory PPT for self-recording a 3-4 minute video
- Be ready with course relevant teaching-learning resources
- Signing up for YouTube and SlideShare for publishing self-recorded video and PPT
- Creating MCQs in Aiken format & essay questions in GIFT format
- Updating profile on Moodle site
- Posting self-introduction
- Downloading Moodle Mobile App

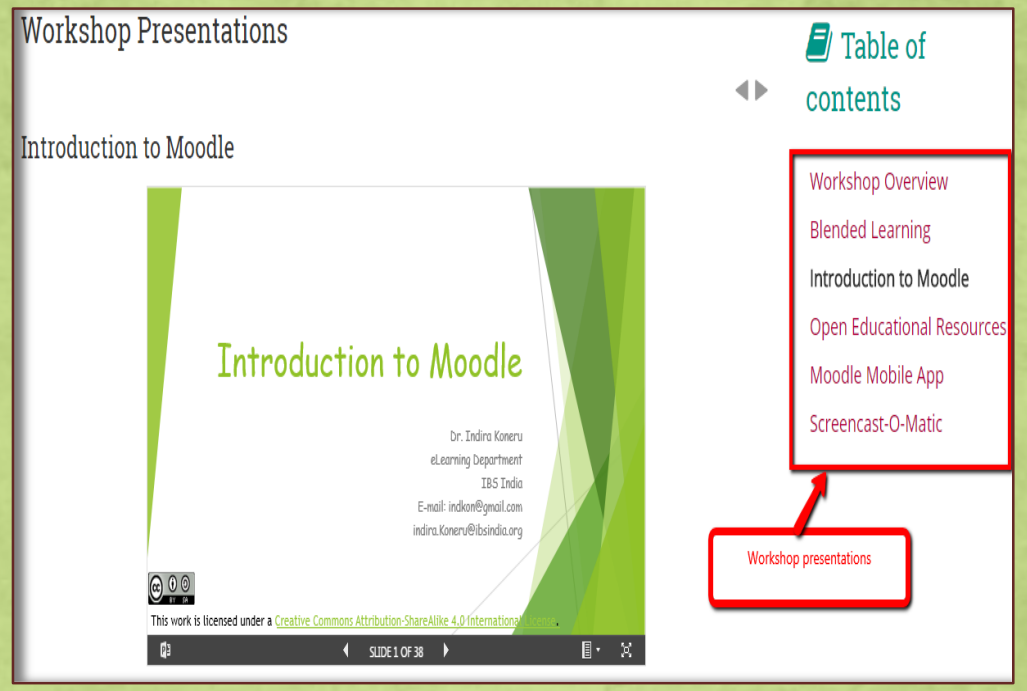


Workshop Delivery Format



Workshop Delivery Format

- Presentations (Book module) on
  - Workshop Overview
  - Blended Learning
  - Introduction to Moodle
  - Open Educational Resources (OER)
  - Moodle Mobile App
  - Screencast-O-Matic



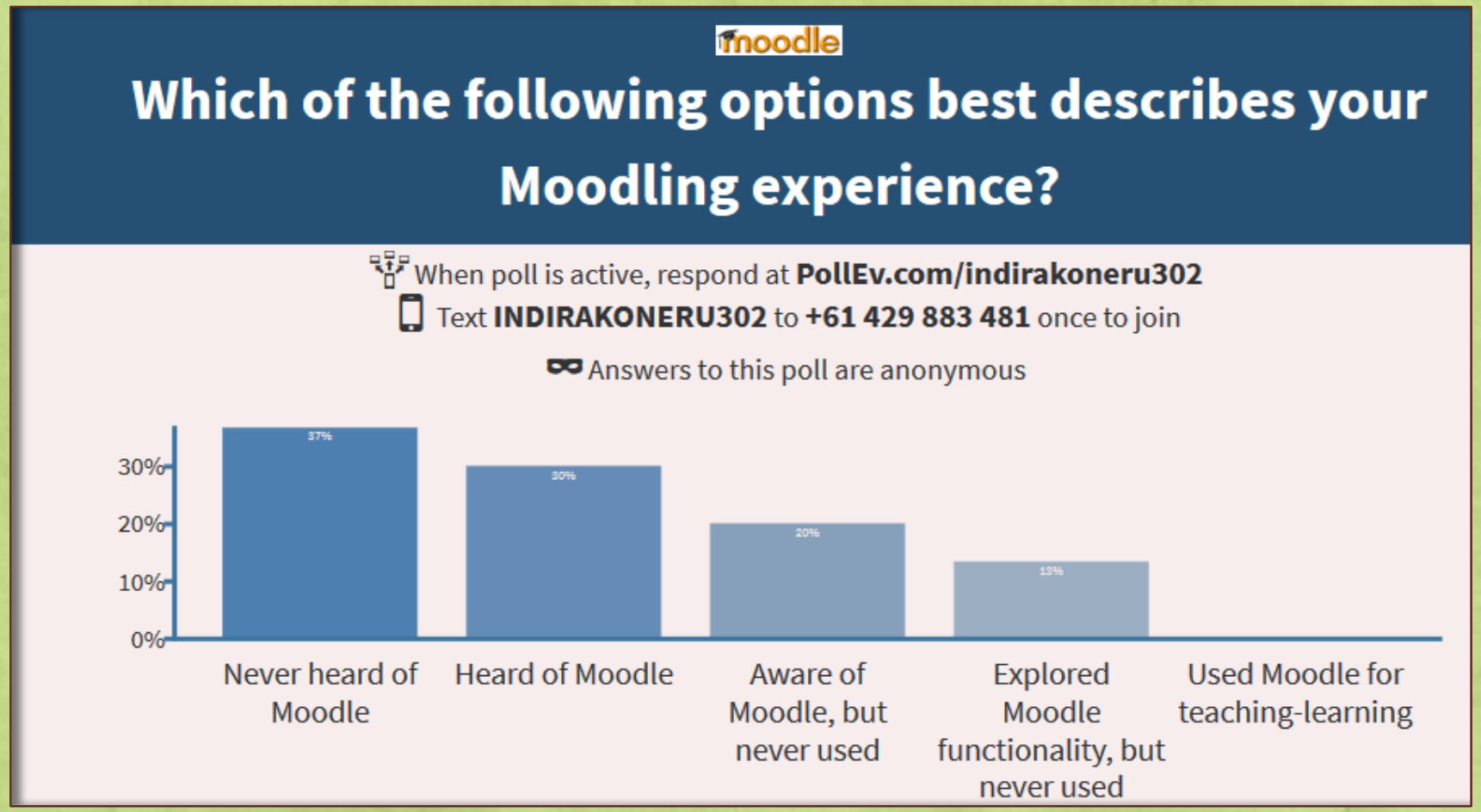
Workshop Delivery Format (Contd.)

- Demonstration on
  - Finding OER in multiple media
  - Building Creative Commons attribution in the TASL format
  - Self-recording course introductory PPT with narration
  - Using Moodle functionality and modules for developing and managing online courses
  - Exploring Moodle Mobile App features

Workshop Delivery Format (Contd.)

- Hands-on activities on
  - Finding OER in text, images/photos, videos
  - Building Creative Commons attribution in TASL format
  - Integrating OER with Moodle course
  - Creating Moodle resources, activities and assessments
  - Grading student's performance with feedback
  - Tracking student's progress & alerting non-participants
  - Communicating with students
  - Importing content
  - Backing up and restoring a course
  - Recording lecture using Screencast-O-Matic, publishing on YouTube and embedding on Moodle course page

Poll Everywhere Activity



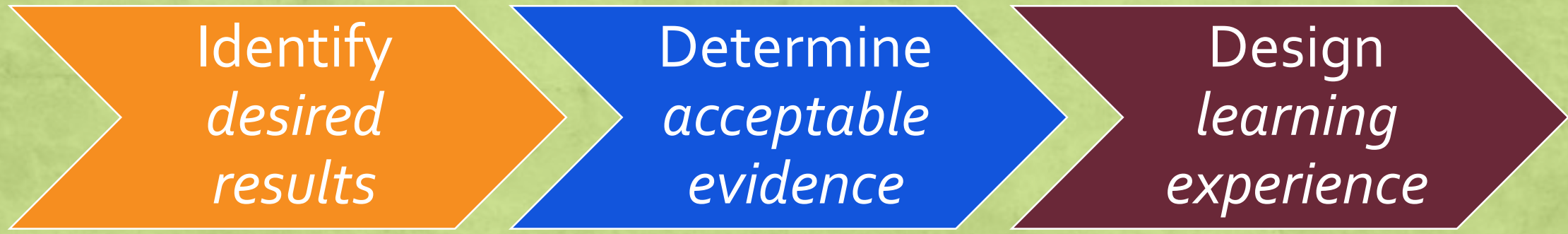
Blended Learning Course Design

Blended Learning Design (based on Backward Design Model)

Course Title:
Programme:
Institution / Campus:
Course Facilitator:
Course description:
Learning objectives:

Course Structure Module-wise / Week-wise	Learning Outcomes	Assessments – F2F / Moodle-enabled	Learning Activities – F2F / Moodle-enabled	Learning Content – F2F / Moodle-enabled		Facilitating Online
				Self-created / Web resources	Supportive OER with TASL Attribution	
Module 1 / Week 1	LO 1 LO 2 LO 3 LO 4	FA 1 (LO 1) FA 2 (LO 2 & 3) FA3 (LO 4)				
Module 2 / Week 2						
Module 3 / Week 3						
Module 4 / Week 4						
Module 5 / Week 5						

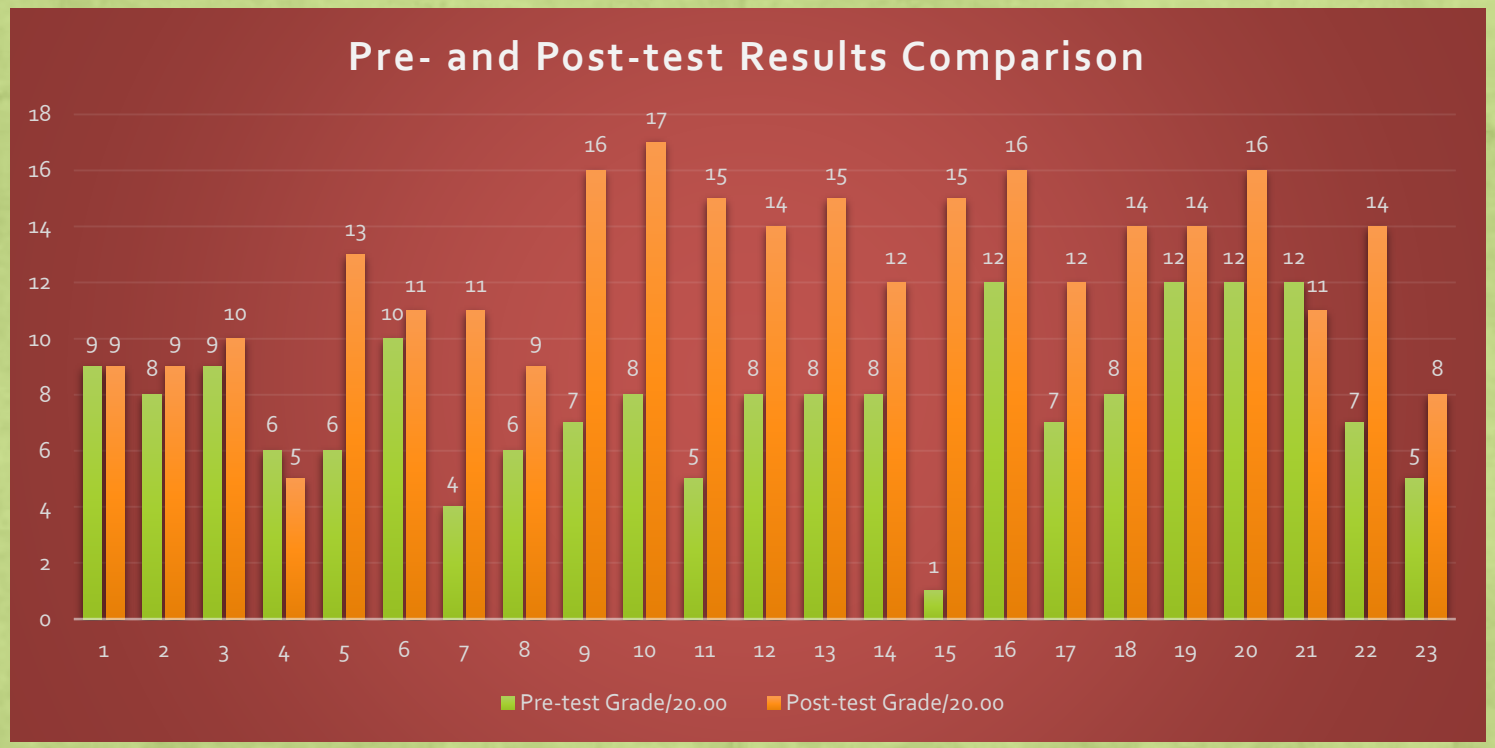
Backward Design



Wiggins & McTighe, 2005

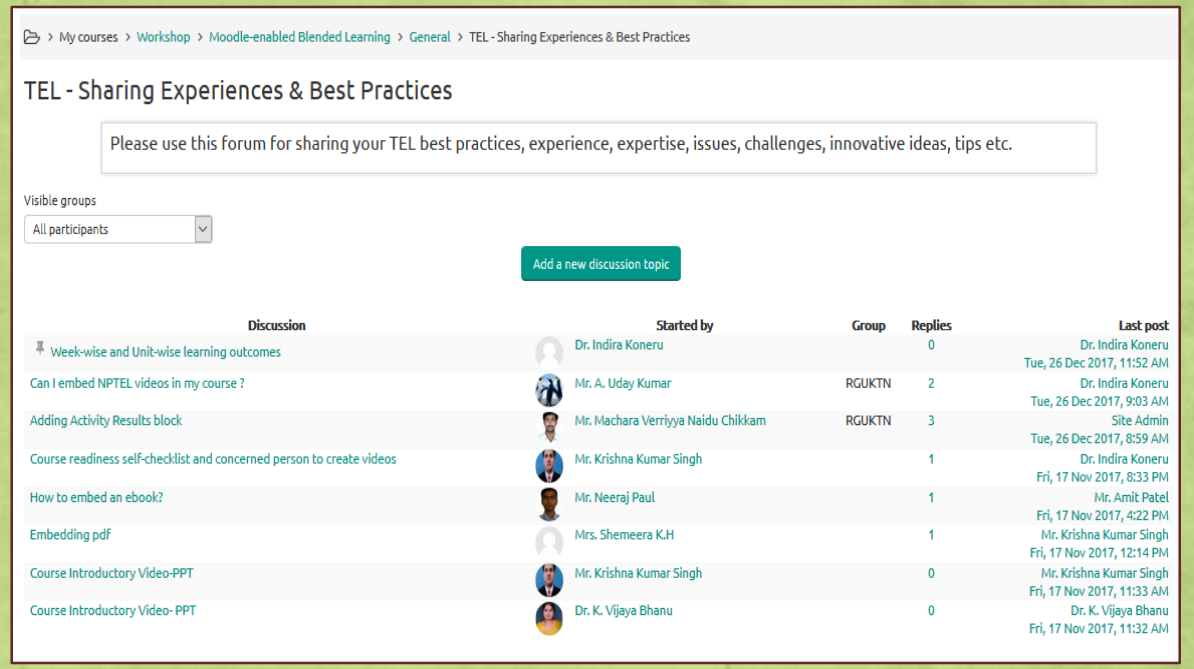
Pre-test & Post-test

- Pre-test - offline test with 20 questions on Moodle and OER
- Post-test – online using Moodle quiz module



Sharing Experiences & Best Practices Forum

- Created forum 'TEL - Sharing Experiences & Best Practices' for sharing
  - Best practices
  - Experience
  - Innovative ideas
  - Tips
  - Issues & challenges



5-Day Workshop on Blended Learning Course Development

- Organised by Centre for Education Technology and Learning Sciences from November 14-18, 2017
- For developing January 2018 Semester online courses
- 24 participants (8 new)
  - 16 from Nuzvid Campus
  - 8 from RK Valley Campus

Workshop Pre-requisites

- Participants submit "blended learning course design" with unit-wise / week-wise / module-wise learning outcomes, assessments, learning activities, learning resources (existing & course-relevant OER)
- Participants be ready with
  - PPTs
  - Videos
  - Web resources, including OER
  - Assessments (assignments, quiz questions)

Blended Course Design Example

Blended Learning Design (based on Backward Design Model)

Course Title: ENVIRONMENTAL ENGINEERING
Programme: CIVIL ENGINEERING
Institution: RGUKT NUZVID
Course Facilitator:
Course description: This course deals with identification of water sources, estimation of quantity required, treatment of water to the desired degree and conveyance of water to the community are the essential features of water supply. At the end of the course the student is expected to familiarize with water treatment and water supply.
Learning objectives: 1. To understand water characteristics and standards for drinking water IS:10500
2. To provide a sound understanding of design principles in water supply systems and treatment processes
3. To acquire knowledge on basic design of conventional and advanced water treatment processes

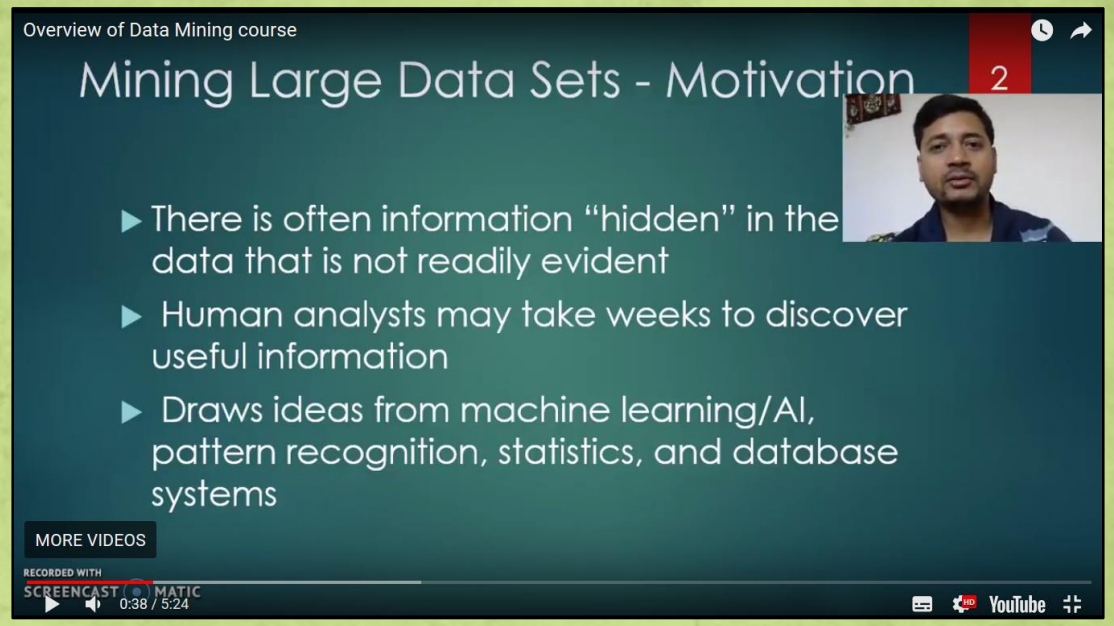
Course Structure Unit-wise	Learning Outcomes	Assessments – F2F / Moodle-enabled	Learning Activities – F2F / Moodle-enabled	Learning Content – F2F / Moodle-enabled (multiple media)		Facilitating Online
				Self-created / Web resources	Supportive OER with TASL Attribution	
UNIT- I: Water Quality/ Characteristics	After completing this course, learners will be able to ; 1. Explore the role of Environmental Engineer 2. Explain the necessity of Protected Water Supply systems 3. Test and analyze different water characteristics as per IS:10500 4. Use different equipments for water quality analysis	FA 1 Make a report on 'What do you think about the role of Environmental Engineer?' (LO1) (Moodle Forum with peer rating) FA 2 Make a documentary on water quality related issues faced by AP during last 5 years (LO2) (Moodle Assignment) SA1 End exam (LO4)	POLLS (Moodle choice module) Moodle Discussion forum on 'water characteristics' Practice Quiz 1 Practice Quiz 2 Make a presentation on 'Different water treatment techniques which you have seen at home'F2F Make a presentation on 'Different water treatment techniques which you have seen at your village' F2F	Lecture Notes: 1. Characteristics of water, Shemeera, RGUKT Nuzvid (Self created) 2. Characteristics of water, by Rupas Kumar, RGUKT RKV Lecture PPTs 1. Sources and characteristics of water, Shemeera, RGUKT Nuzvid(Self created) Lecture Videos 1. Sources and characteristics of water, Shemeera, RGUKT Nuzvid(Self created using Screencast O matic)	Water and waste water engineering, Prof .C. Venkobachar, Dr. Ligy Philip, http://nptel.ac.in/courses/105106119/# CC BY-SA, https://creativecommons.org/licenses/by-sa/4.0/	1. Unit 1 introductory video 2. Learning forum 3. Moodle messaging functionality 4. Whatsapp group "EE 2018 RGUKTN"

Workshop Outcomes

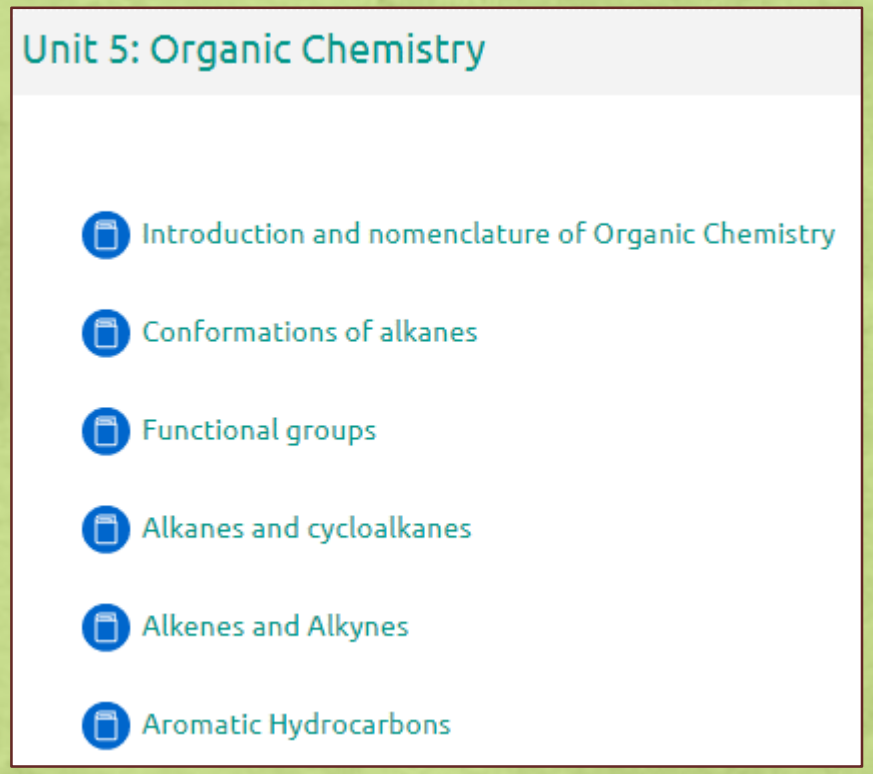
- Organize and manage learning resources in multimedia, including OER
- Embed course introductory video in general area
- Create assessments in line with RGUKT internal assessment (assignments, question bank categories, importing questions and creating quizzes)
- Grade student's performance (download assignments, download and upload grading worksheet)
- Provide feedback (online feedback, feedback files, annotate PDF)
- Create interactive (H5P) and collaborative (groups and forum) learning activities
- Explore Moodle mobile app and Moodle desktop for accessing courses offline
- Manage gradebook with online and offline evaluation components
- Communicate with students (announcements forum, messaging functionality – individual and bulk)
- Track learning progress and send reminders (Course participation report)
- Self-review blended course quality

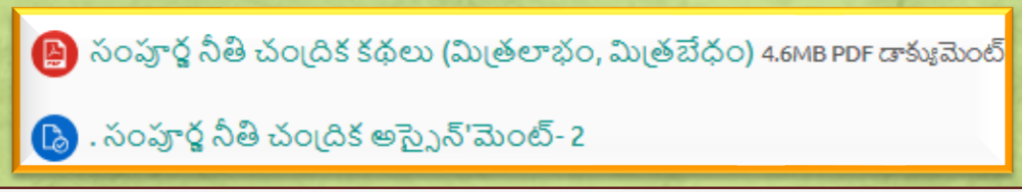
Course Introductory Video

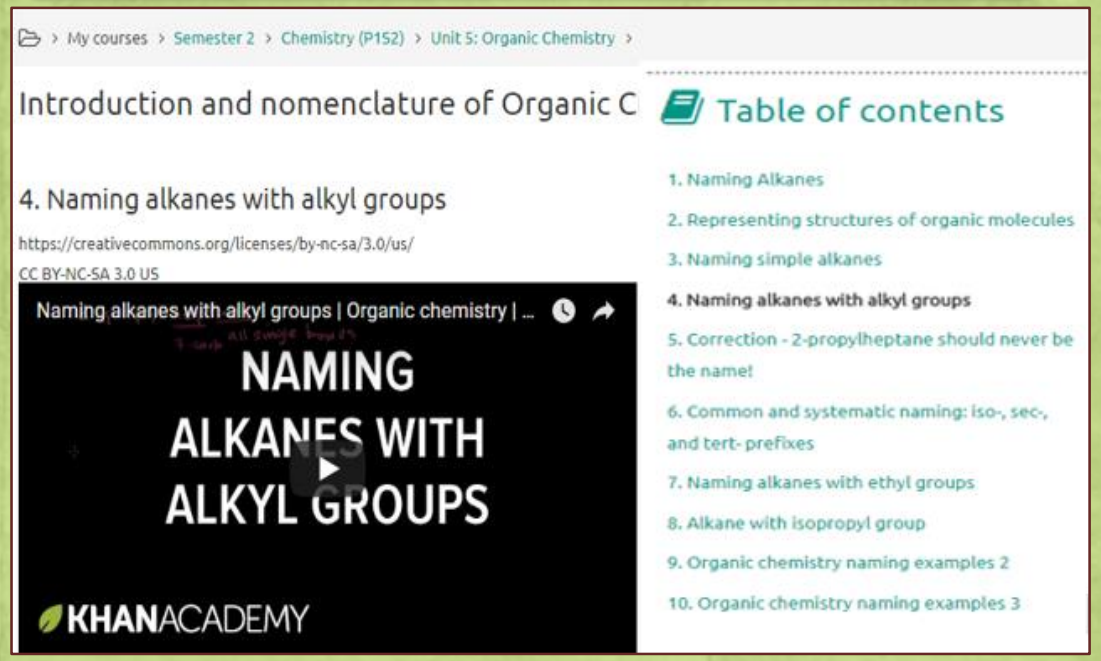
- Created a PPT
- Self-recorded using ScreenCast-O-Matic
- Published on YouTube
- Embedded on Moodle course page



Managed Resources in Multimedia

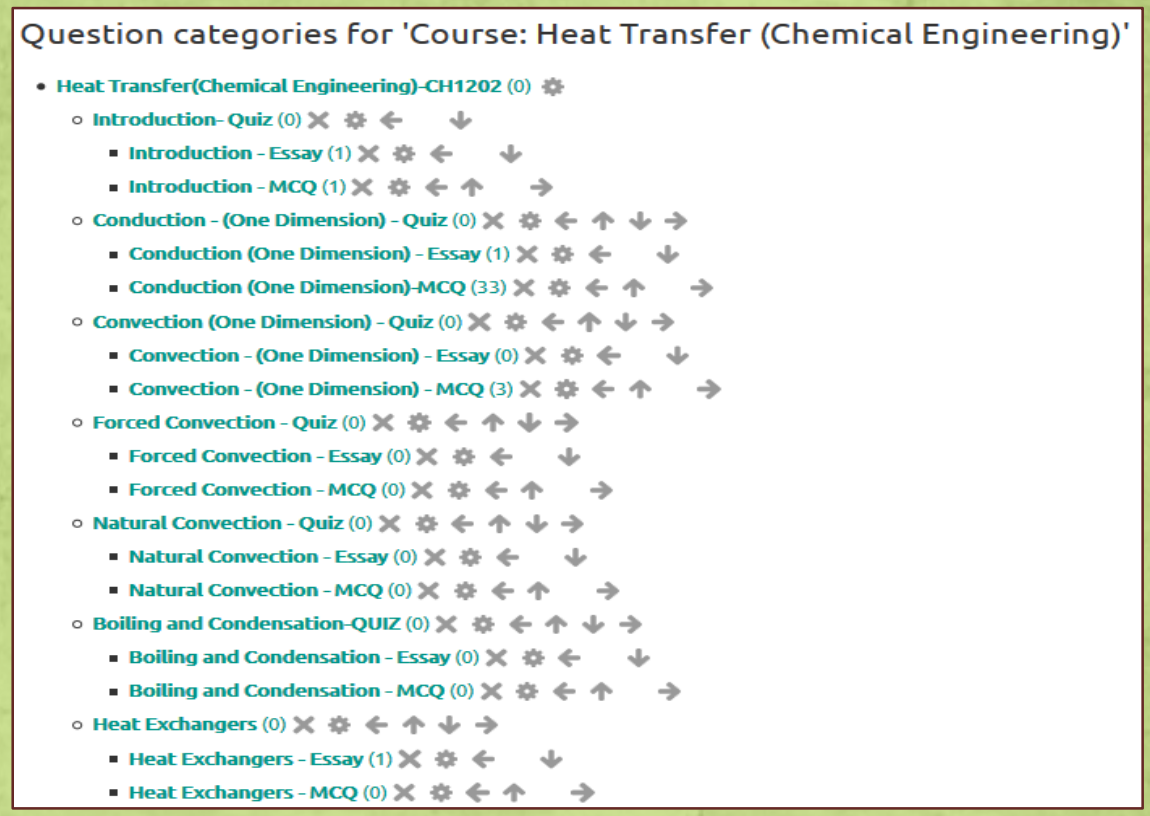






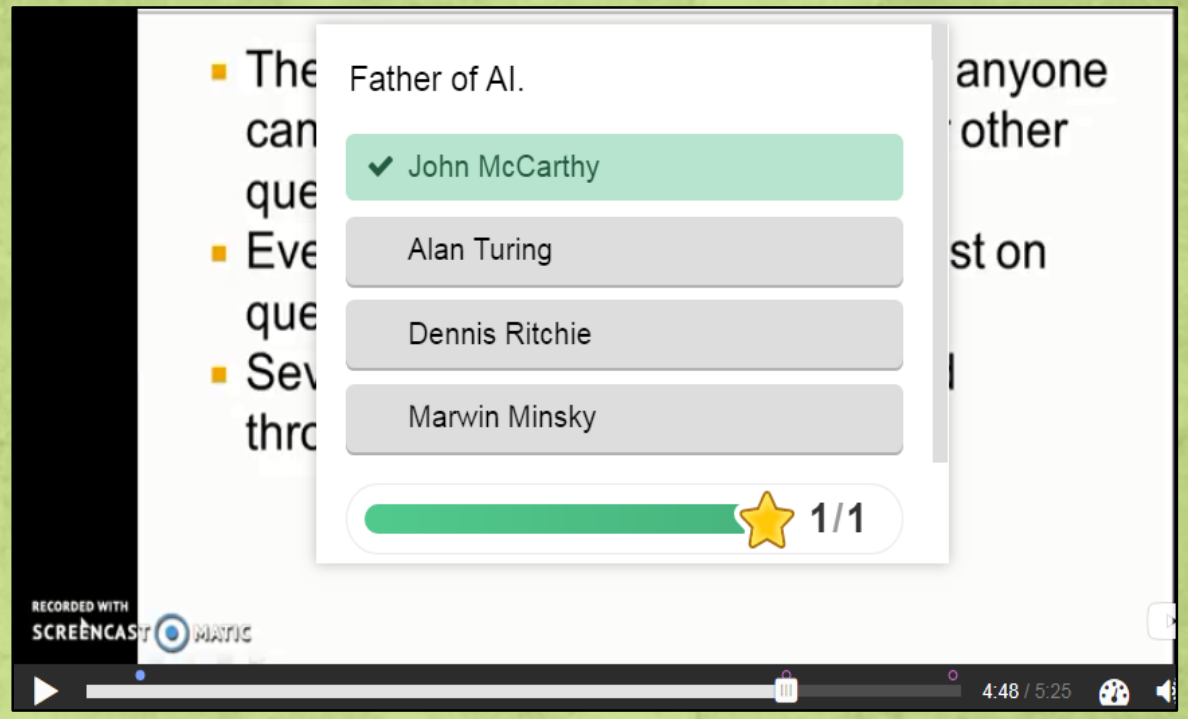
Question Bank Categories with Questions

- Created categories & sub-categories unit-wise
- Imported MCQ (Aiken) & essay questions (GIFT format)
- Edited questions to add Math & Chemistry formulae
- Reviewed and downloaded quiz results



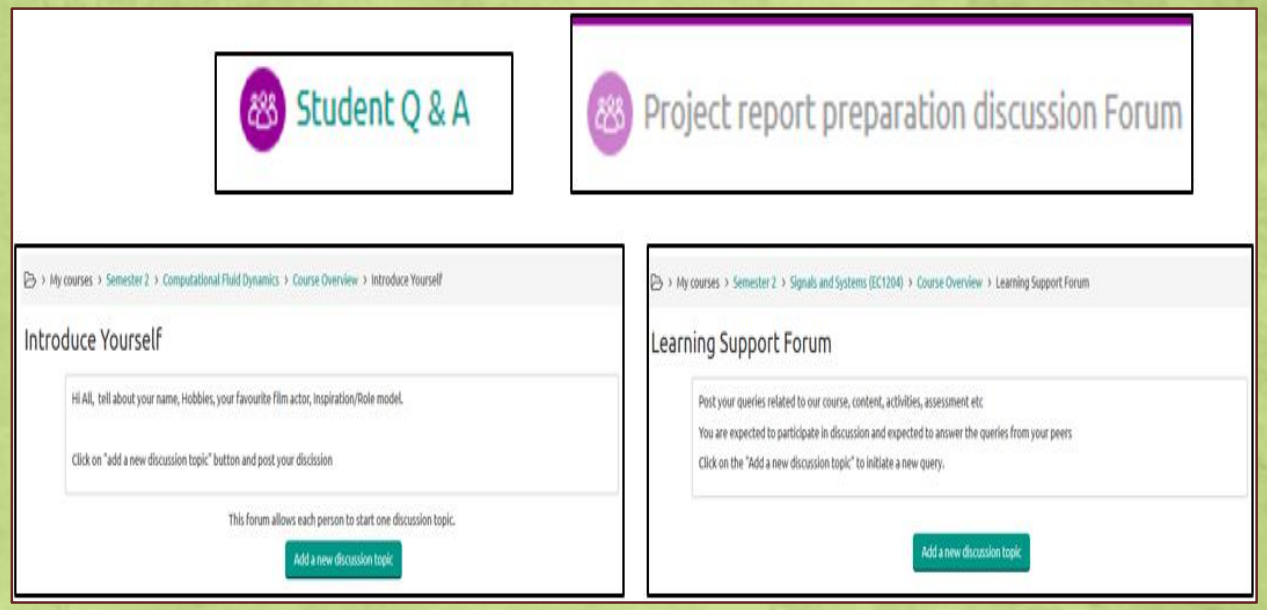
Interactive Video (H5P)

- Identified course-relevant videos
- Inserted MCQ



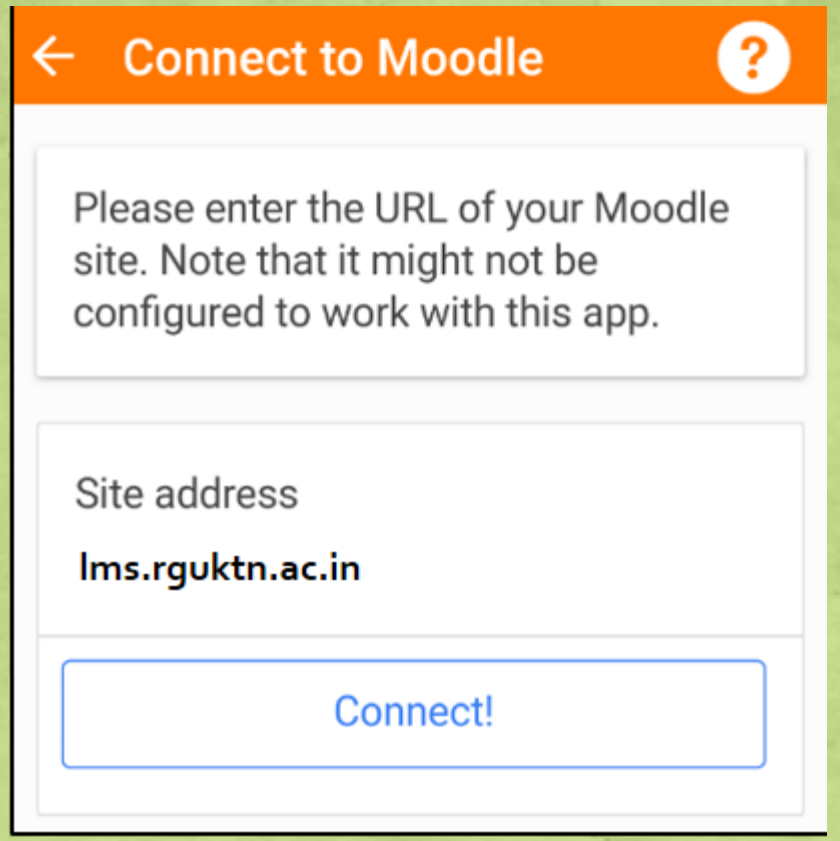
Forums

- Created 'Introduce yourself forum' (Each person posts one discussion)
- Forums
  - Complex topics
  - Q & A forum
  - Project report preparation
  - Learning support forum



Communication

- Used Announcement forum
- Explored messaging functionality
  - Bulk messaging
  - Individual messaging through Moodle mobile app



Tracking Students' Learning Progress

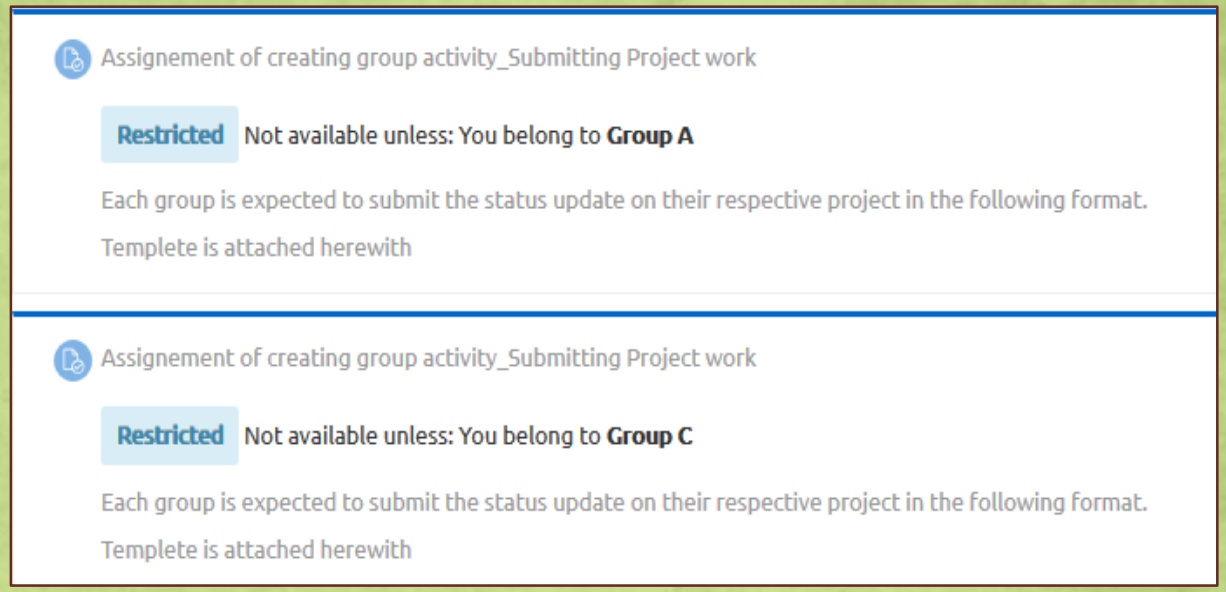
- Tracked progress through
  - Activity completion
  - Course participation reports
- Tested alerting non-participants through 'Course participation' reports

Managing Moodle Gradebook

- Editing grade letters
- Adding offline grade items
- Exporting and importing grades

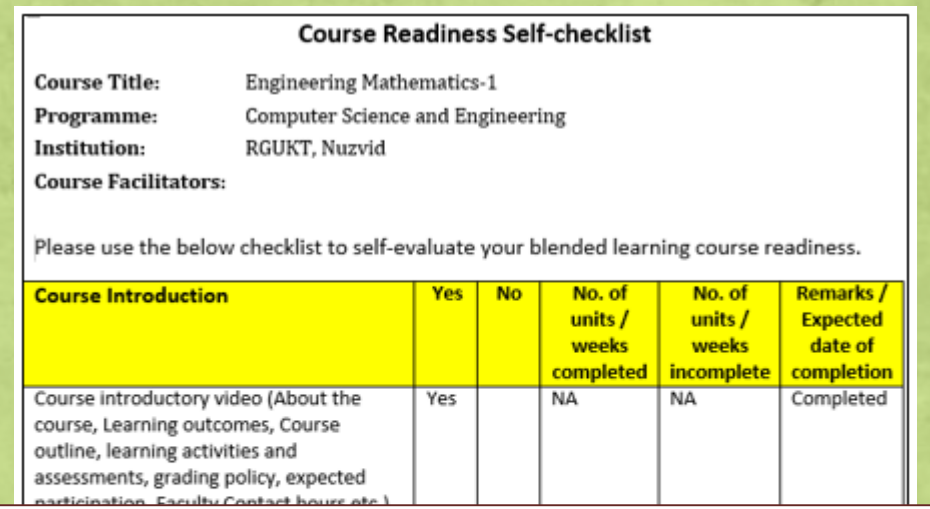
Collaborative Learning

- Explored group modes
- Created group activities
  - Forum
  - Assignment



Self-evaluating Course Readiness

- Self-evaluated blended courses using 'course readiness' checklist
- Submitted course development status

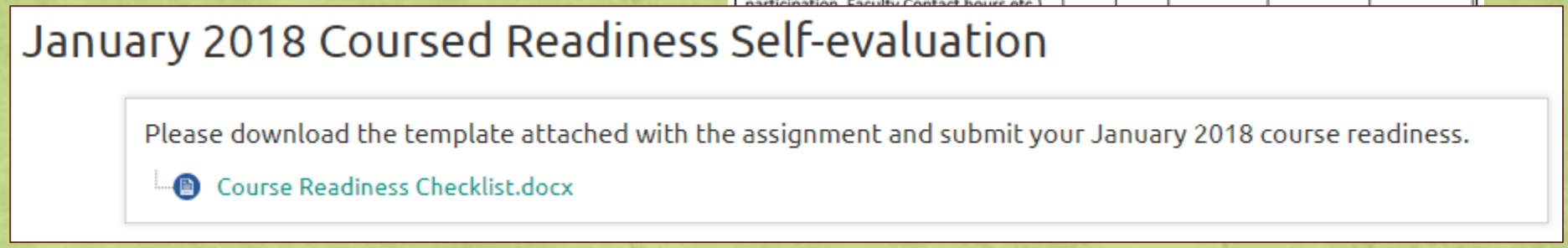


Course Readiness Self-checklist

Course Title: Engineering Mathematics-1
Programme: Computer Science and Engineering
Institution: RGUKT, Nuzvid
Course Facilitators:

Please use the below checklist to self-evaluate your blended learning course readiness.

Course Introduction	Yes	No	No. of units / weeks completed	No. of units / weeks incomplete	Remarks / Expected date of completion
Course introductory video (About the course, Learning outcomes, Course outline, learning activities and assessments, grading policy, expected participation, Faculty Contact hours etc.)	Yes		NA	NA	Completed



January 2018 Coursed Readiness Self-evaluation

Please download the template attached with the assignment and submit your January 2018 course readiness.

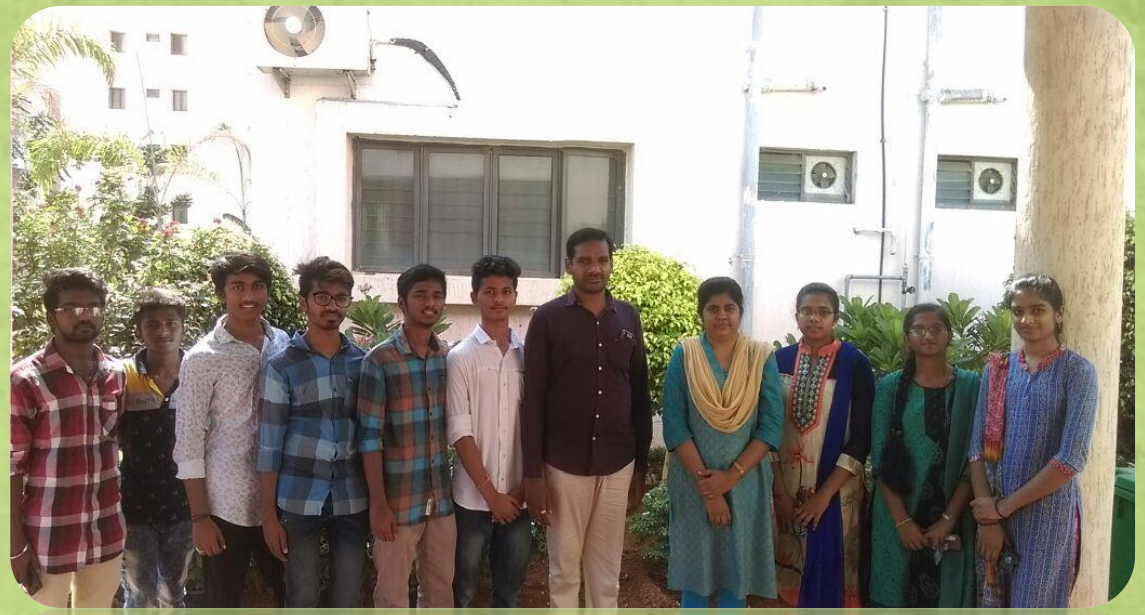
Course Readiness Checklist.docx

TEL Coordinators

- 4 from RGUKT Nuzvid
- 2 from RK Valley
- Convened weekly review meet (F-2-F) to
  - address issues and challenges
  - encourage TEL participants to share / showcase the best practices and tips
  - review Course Development progress every week
  - provide needed support

Student Ambassadors

- Raising awareness
- Promoting blended learning
- Motivating peers
- Providing support in accessing course , participating in activities and submitting assessments



Blended Course Delivery

- Provided virtual mentoring
  - WhatsApp group
  - E-mail
  - Workshop queries forum
  - Telephone
- E-mailed top 10 active courses every month

Active Courses – January & February

Course Title	Facutly	Campus
Telugu Jaati Vivekam		Nuzvid
CE2204_1 Environmental Engineering		Nuzvid
English (P2S2) - Sem 2		RK Valley
S&S Signals and Systems (EC1204)		Nuzvid
Telugu, PUC-2 - Sem 2		Nuzvid
AI-CS2206 Artificial Intelligence-(CS2206)		Nuzvid
Chemistry (P1S2) - Sem 2		RK Valley
HT HEAT TRANSFER		RK Valley
DM Data Mining- (CS3205)		Nuzvid
Mass Transfer Operations-II_CH2203		RK Valley

Course Title	Facutly	Campus
Telugu Jaati Vivekam		Nuzvid
Telugu, PUC-2 - Sem 2		Nuzvid
HEAT TRANSFER		RK Valley
English (P2S2) - Sem 2		RK Valley
CE2204_1 Environmental Engineering		Nuzvid
Signals and Systems (EC1204)		Nuzvid
Data Mining- (CS3205)		Nuzvid
English Language Lab (E1)		Nuzvid
Chemistry (P1S2) - Sem 2		RK Valley
Python		Nuzvid
AI-CS2206		Nuzvid
Mass Transfer Operations-II_CH2203		RK Valley

2-Day Workshop on Technology-Enabled Learning Implementation Review by Dr. Sanjaya Mishra, COL

- Reviewed implementation of Technology-Enabled Learning at RGUKT
- TEL Facilitators peer-reviewed courses using COL's Learnabiltiy Checklist
- Identified challenges and opportunities of blended learning
- Shared experiences and showcased best practices

Top 12 Active Courses - Last 3 months (As of 24-03-2018)

Course	Campus
Telugu Jaati Vivekam	Nuzvid
Telugu, PUC-2 - Sem 2	Nuzvid
HT (Heat Transfer)	RK Valley
Signals and Systems (EC1204)	Nuzvid
English (P2S2)	RK Valley
Environmental Engineering	Nuzvid
DM (Data Mining)	Nuzvid
English Language Lab (E1)	Nuzvid
Python	Nuzvid
Chemistry (P1S2) - Sem 2	RK Valley
AI-CS2206 (Artificial Intelligence)	Nuzvid
Mass Transfer Operations-II_CH2203	RK Valley

Course Evaluation Criteria

- Used COL's blended course learnability evaluation checklist
- Section I: Course Overview & Introduction (6 criteria)
- Section 2: Course Goals and Learning Outcomes (4 criteria)
- Section 3: Assessment (5 criteria)
- Section 4: Course Materials (8 criteria)
- Section 5: Learner Engagement (4 criteria)
- Section 6: Learner Support Resources (5 criteria)

Faculty Perception on Blended Learning Peer Review

- *"Peer review is beneficial in knowing the drawbacks and improve course. It is a pre-requisite for BL Course development"*
- *"2-3 Faculty developing the same course can review and provide suggestions"*
- *"Monthly peer review helps in incorporating suggestions"*
- *"Peer review helps in 1. self-analysis 2. sharing knowledge and innovative practices, 3. inculcate innovate thoughts of peers (eg. Telugu Faculty - using Chat)"*
- *"We can share our ideas & take ideas from others & develop courses with a variety of teaching methods"*

Faculty Perceptions of Blended Teaching-Learning

- Blended course design
- Sharing learning resources in multimedia
- Flexible teaching
- Online Assessments

Blended Course Design

- *"Helped in planning entire course, topic-wise with resources and activities - assignment, forums, quizzes"*
- *"The design of BL course made me to deliver my course in the most constructive way."*
- *"Served as a course planner with Learning outcomes, Assessments, Learning activities, learning resources"*
- *"BL design document helped in planning the course development & delivery"*
- *"It is easier to develop the course page with Blended course design document, as the design document contains all the OER links and learning objectives etc."*
- *"Even though it took quite a long time to prepare the Blended Course Design, it paved a path to me as a facilitator to ensure that the course has met all its necessary elements of concepts including recent advancements"*

Sharing Learning Resources in Multimedia

- *"The animation videos can be shared and this enables students to understand concepts beyond the conventional teaching classes"*
- *"It was very easy for me to give them tutorials about the software tool"*
- *"ANSYS 2D Modeling tutorial, ANSYS 3D Modeling tutorial, ANSYS Meshing tutorial"*
- *"Helped in sharing videos on complex molecule structures"*
- *"I even provided Audio of the Poem, so that my students will get the correct pronunciation, accent and intonation while reading the poem"*
- *"Create videos on 'Star Poems"*
- "*Shared* web resources, provide link to external ***game-based activity***"
- *"Embedding Videos on Blended- learning course page made easy to the students to understand the concepts effectively"*

Flexible Teaching

- "Moodle enabled me to even make my time to focus on my career advancement like doing my Ph.D."
- "This semester I attended two conferences. At that time I gave online assignment to our students."
- "Met with an accident and couldn't open mouth, then felt the need of some online platform and tools to share teaching-learning content".
- "Moodle-enabled blended learning enabled me to assign activities and assignments to students when I was on sick leave".
- "It helped me in providing the required content to my students whenever I want without running after IT staff in providing the content."

Online Assessments

- "Hands-on video-based / software tutorial-based assignments enhanced students' learning experience"
- "Students improved their learning by typing Telugu poems in online assignments"
- "Used *quizzes for self –assessment"*
- "*Quizzes were replacement to earlier weekly test"*
- "By giving quizzes, I could create competitive exams environment and spirit in them since now a days most of the competitive exams are online based"
- "I provided solutions for quiz questions, once they finish the test they can cross check their results through not only with answer but also with explanation, more or less I created a test series environment"

Multiple Roles

- Facilitator
- Mentor
- Motivator
- Moodle Administrator

Facilitator's Recommendations

- Institutions should assess eLearning readiness in terms of technical and human resources and capacity amongst stakeholders
- Build a Community of Practice (CoP) for developing a shared understanding of the need for blended teaching-learning
- Constitute an eLearning team for planning, monitoring and evaluating TEL implementation
- Identify campus-level and department-level eLearning coordinators
- Accommodate TEL in academic and research review meetings
- Identify early adopters and assign Master Trainers role
- Engage TEL student ambassadors in student orientation