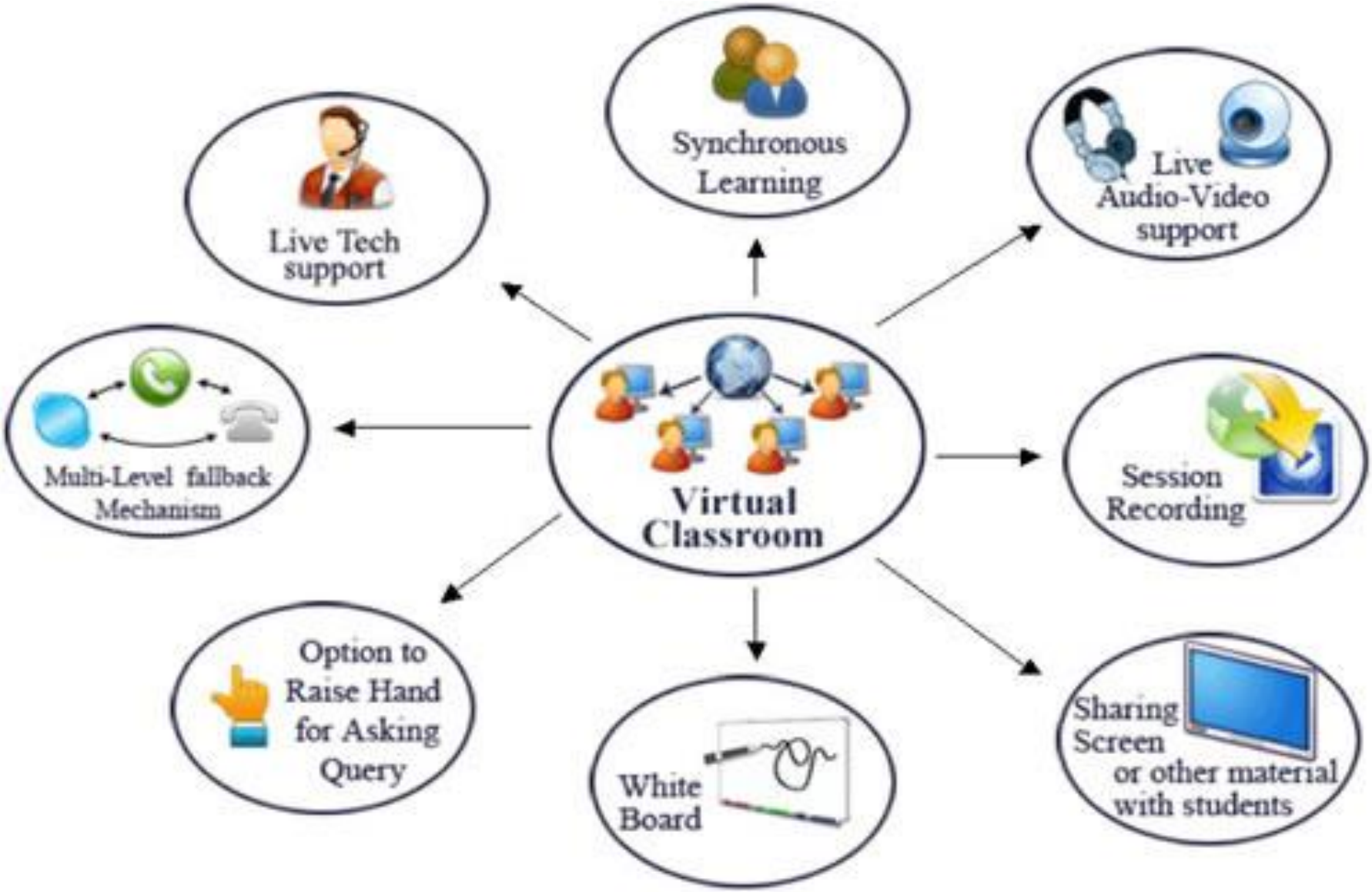
Investments in ICAR Leadership in Agricultural Higher Education
(NAHEP-Component 2A)

Virtual Classroom Activity

Workshop for Nodal Officers of Agricultural Universities
18-19 September 2019

Virtual Classroom

- A virtual classroom, is a system that provides the same opportunities for the teaching and learning process, beyond the physical limits of the traditional classroom's walls.
- Most virtual classroom implementations are Web-based.
- Some of the benefits of a Web-based classroom are its geographic, temporal and platform independence, and its simple, familiar and consistent interface.
- Virtual Classroom is largely useful as people from diverse geographical locations can be part of the classroom.


Synchronous Learning
Live Tech support
Live Audio-Video support
Multi-Level fallback Mechanism
Virtual Classroom
Session Recording
Option to Raise Hand for Asking Query
White Board
Sharing Screen or other material with students

- Definition of a virtual classroom is related to synchronous online learning, which happens in real time and provides the participants with an experience very close to traditional face-to-face teaching.

- **A virtual classroom is an online learning environment that allows for live interaction between the tutor and the learners as they are participating in learning activities.**

Objective

- To establish Virtual Class rooms with video streaming in participating agricultural universities

Activities

- Creation of Virtual Class Rooms
- Hosting of video streaming and video conferencing solution at Data Center

- Establishment of virtual Class rooms at participating AU's in phased manner.
- Class management procedures will be implemented in the virtual classroom system
- Web Site/Mobile App will be developed for maintaining the links for the lectures and other material contents and links will also be maintained on a regular basis
- Scheduling of lectures, capturing lectures, generating videos.

Activity 1: Creation of Virtual Class Rooms

- AUs to be identified in which the VCRs are to be established
- Universities which have existing infrastructure needed for establishment of the VCR to be identified.
- Universities which are not given funds for establishing VCRs under any scheme to be identified.

Activity 2: Hosting of video streaming and control centre solution at Data Center

- The solution for video streaming and control centre to be used in virtual classrooms to be hosted at the ICAR-Data Center

Activity 3: Establishment of VCRs at participating AU's

- Total 18 VCRs are to be established in the identified participating universities.
- The VCRs will be established in various universities.

Activity 4: Class management procedures will be implemented in the virtual classroom system

- Various class management procedures involved in the Virtual Class Rooms will be implemented in the VCR system.

Activity 5: Web Site/Mobile App will be developed for maintaining the links for the lectures and other material contents and links will also be maintained on a regular basis

Activity 6: Scheduling of lectures, capturing lectures, generating videos.

Output	Outcome	Indicators
•Establishment of Video Streaming Capability in ICAR-DC •Creation of Virtual Class Room in Universities •Video Library of classes	Enhanced capability of AUs to stream the lectures to enrich the capacity building of students of remote and under privilege universities.	•No. of Virtual Class Established •No. of Video Lectures captured •No. of Video Lecture Streamed in real time •No. of times video lectures accessed/downloaded •No. of colleges accessed the lectures •No of universities accessed the lectures

Suggestions from Brainstorming workshop (November 2018)

- Few AUs already have virtual classrooms and some of the AUs are in process of establishing the virtual classrooms with the grant from NAHEP projects. The existing facilities may also be linked up with the proposed system.
- Survey should be conducted in AUs to document the existing facilities.
- In case of virtual classrooms, the following things should be taken care of: establishment of VC; conduct of VC; maintenance/ monitoring; keeping storage of delivered lectures and feedback on the same.
- VC created should have an end to end solution starting from video recording and uploading, visualizer/interactive board, electronic podium etc.
- The courses which are interdisciplinary and are the strength of the University should be considered to be delivered in VC.
- Operational guidelines should be prepared for conducting classes in VCs should be prepared and those can be reviewed later once virtual classroom is established.

Virtual Reality

Virtual Reality

360 Degree view
https://www.youtube.com/watch?v=lJype_TafRk

https://www.youtube.com/watch?v=vroHIPhVQYI

https://yeppar.com/yeppar-for-training.html

Virtual Reality :Agronomy & Plant Physiology

- Integrated farming system
- IoT based protected cultivation
- Organic farming
- Hybrid paddy seed production
- System of rice intensification (SRI)
- integrated nutrient management (INM)
- Integrated weed management (IWM)
- Micro-irrigation in field crops
- Pre/post harvest technology (PHT) of rice
- Pre/post harvest technology (PHT) of cotton
- Water management in irrigated rice
- Direct seed rice (DSR)
- Hydroponics

Virtual Reality Modules: Horticulture

- Rejuvenation in Mango
- Nursery management
- Propagation techniques
- Bahar treatment in Guava
- Post harvest management and value addition
- Layout of Orchard using Pythagoras theorum
- Emasculation & Handpollination
- Intercultural operation in vegetable crops
- Micro-irrigation in horticultural crops

Virtual Reality :Aquaculture and fisheries science

- Low cost feed manufacturing using locally available feed ingredients
- Breeding of exotic fish species
- Breeding of indegenous variety of fishes
- Stock assesment of indegenous fish species of small reserviour
- Value addition of low cost fish
- broodstock development of fishes
- Development of growout culture practices of locally available fishes
- Dieases survillance and mitigation measures
- Development of SOPs for Nursery rearing of fishes

Virtual Reality :Soil Science

- Vermi Compost development
- Biofertilizer
- Soil health management,
- Problem soils and reclamation
- Soil profile
- Green manuring
- FYM preparation
- Nutritional disorder in plants
- Fertilizer application
- Soil plant water relation

Virtual Reality :Agricultural Engineering

- Characterization of mango powder by freeze drying
- Microwave-assisted extraction of essential oils from aromatic plants
- Preparation of Composite film from mango kernel starch.
- Design and Development of motor-operated cocunutdehusker.
- Development of a small scale solar operated rice harvester.
- Water Prioritization using Remote Sensing and GIS
- Study of ground water quality assessment in CUTM campus
- Operationalization and Calibration of Seed Drill Machine
- Estimation of CUTM climate using climatic data.
- Solar-powered Agricultural Water pumping system using Autotracking.

Virtual Reality : Plant Pathology

- Spawn production of oyster and paddy straw Mushroom and their Cultivation
- Mass production of Trichoderma spp for management of soil borne disease
- Evaluation opf fungicide against Blast disease in Finger millet in South eastern Odisha
- Antagonistic effect of biocontrol agents against wilt of chickpea in Southern Odisha
- Application of sustainable practices in management of Alternaria leaf spot of tomato

Virtual Reality :Diary Science

- Probiotic Dairy Foods
- A1A2 Milk
- Milk preservation
- Functional whey drinks
- Dairy Starter improvement
- Quality Assessment of dairy products
- Low fat dairy products
- Milk adulteration
- Mechanization of Traditional Indian Dairy products
- Smart packaging in Dairy Industry

Thank you