Erasmus+ CBHE Project CHAIN –101082963

Cooperation for Holistic Agriculture Innovation Nests in Sub - Saharan Africa

Zoom ing into learning: transforming university education through technology

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1.Challenges in traditional education

THE SHIFT TO DIGITAL LEARNING:

- In recent years, particularly accelerated by the COVID-19 pandemic, there has been a significant transition from traditional face-to-face education to online learning.
- Educational institutions worldwide have had to adapt quickly to ensure continuity of education, highlighting the necessity for reliable digital tools (**Zoom**, Microsoft Teams and Google Classroom).

CHALLENGES IN TRADITIONAL EDUCATION:

- Geographic barriers that limit access for students in remote areas.
- Limitations of physical classrooms, such as capacity and scheduling conflicts.
- Ensuring inclusive education for diverse learning needs and backgrounds.

IMPORTANCE OF TECHNOLOGY IN EDUCATION:

- Technology facilitates access to a wealth of resources and materials, enabling a richer learning experience.
- Digital platforms can foster collaboration and communication between students and instructors across different regions.
- Technology provides students access to a vast array of online resources, including e-books, research papers, instructional videos, and interactive content available at any time.

2. The shift to digital learning: examples

PROFESSIONAL DEVELOPMENT AND ONLINE TRAINING:

- **Corporate training solutions**: companies, universities have increasingly relied on digital training via platforms like Linkedin learning and Udemy for employee skill development, allowing for continued training and certification during remote work.
- **Webinars and virtual conferences:** instructors, professors, and professionals have started hosting virtual conferences and webinars as alternatives to traditional presentations and workshops, reaching larger audiences at reduced costs.

Blended learning models:

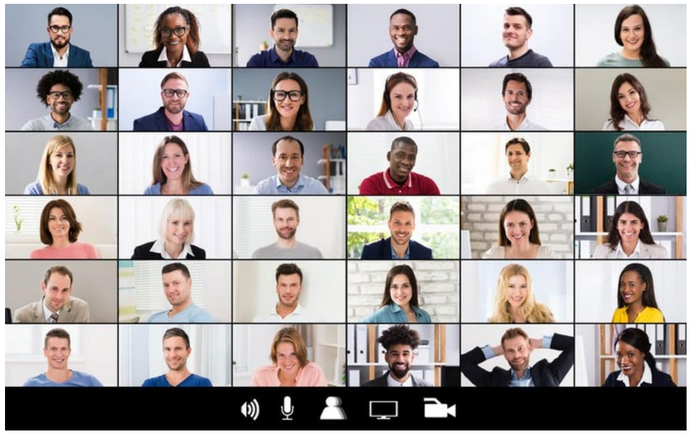
- **Combination of online and In-person classes:** many institutions have adopted blended learning models where students participate in a mix of in-person and online sessions.
- **Flipped classroom models**: instructors assign pre-recorded lectures for students to review at home, freeing up in-person class time for discussions and interactive activities based on the learned content.

Image by Drazen Zigic on Freepik

INTERACTIVE AND ENGAGING LEARNING TOOLS:

- **Virtual reality (VR) and augmented reality (AR):** some educational programs have begun to incorporate VR and ar technologies to provide immersive learning experiences, particularly in fields like medicine, architecture, and engineering.
- **Gamification:** educators are utilizing game-based learning technologies to increase student engagement, using platforms like kahoot! And quizizz to make learning fun and interactive.

3. Course objectives



01

To highlight the advantages of Zoom in e- learning

- Discuss how **Zoom** can enhance student engagement and collaboration in university settings.
- Provide insights into practical applications of Zoom in various courses and activities.

02

To equip participants with knowledge and skills

- Offer a comprehensive understanding of how to effectively use **Zoom** as an educational tool.
- Provide guidance on overcoming potential challenges and leveraging the platform's features for successful teaching.

03

To foster a community of learning and support:

- Encourage participants to share their experiences with **Zoom** and collaborate on best practices.
- Create an open space for questions and feedback, fostering a sense of community among educators in Sub-Saharan Africa.

4. Overview of the Zoom: one platform to connect

What is Zoom platform?

- Zoom is a cloud-based video conferencing service that allows users to virtually connect through video, audio, and collaboration features.
- It is designed for seamless communication, whether in personal, educational, or professional settings.

- Launched in 2013 by Eric Yuan, Zoom has rapidly gained popularity worldwide, particularly during the COVID-19 pandemic when remote work and learning became essential.
- The platform has since evolved to accommodate millions of users and hosts, becoming a leading solution for virtual meetings, webinars, and online education.

Mission: Powering organizations across industries and geographies

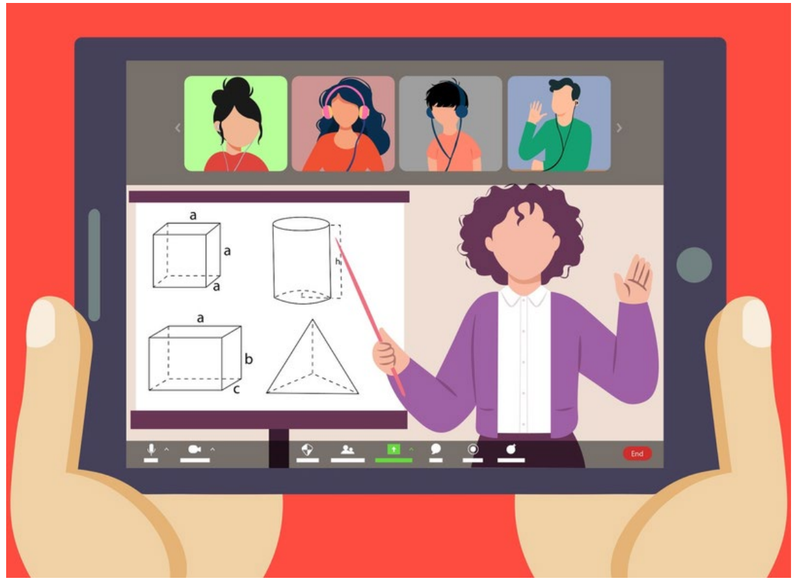
- Zoom helps consolidate communications, connect people, and collaborate better together in the boardroom, classroom, operating room, and everywhere in between.

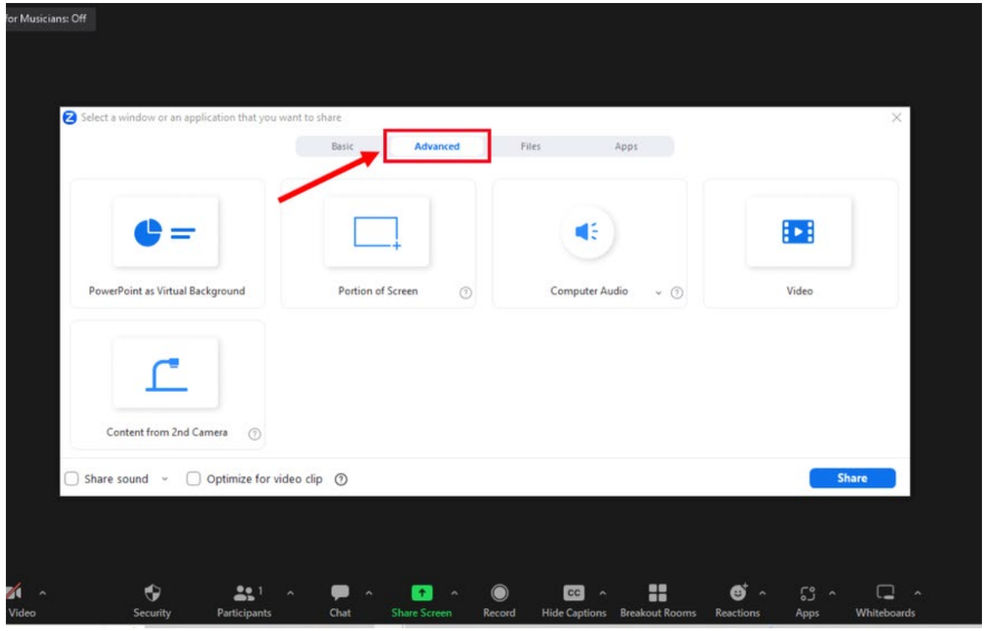
5. Zoom key functionalities for e - learning

1. High- quality video and audio conferencing

- **HD video and audio:** provides clear and high-definition video and audio quality, which enhances user engagement and communication.
- **Gallery view:** participants can see multiple participants in a grid layout, promoting better interaction and connection.
- **Immersive view:** enables hosts to create a unified and virtual environment for participants by displaying them against a custom background.
- **Dynamic interaction:** participants can interact more naturally as their video feeds are positioned together, promoting engagement.

5. Zoom key functionalities for e - learning





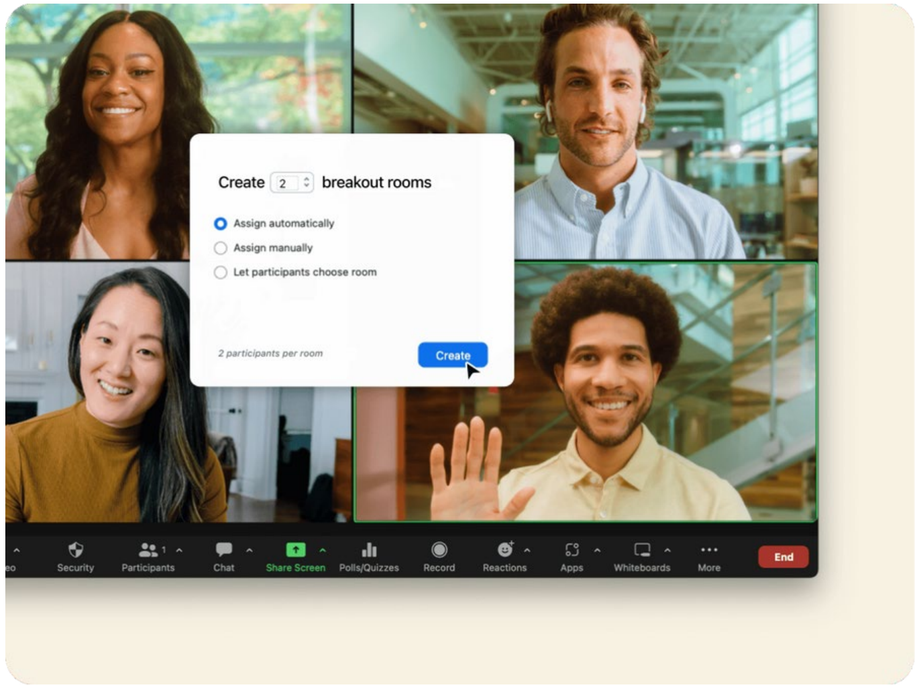
2.Screen sharing

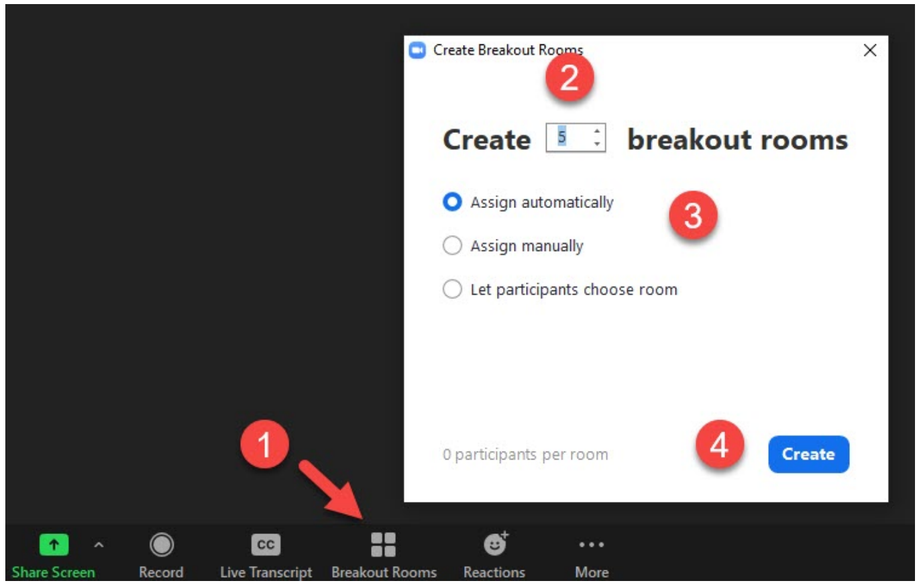
- **Presentation capability:** instructors can share their screens to show slideshows, documents, or software applications directly to students.
- **Multiple screen sharing:** allows several participants to share their screens simultaneously, fostering collaborative learning.
- **Specific application window**: users can choose to share only one application (e.g., a specific PowerPoint, a web browser, or software), keeping other windows hidden from view.
- **Flexibility in teaching:** screen sharing can support a variety of teaching styles, whether it is through traditional lectures, interactive discussions, or peer assessments.
- **Interactive learning:** screen sharing facilitates interactive lessons, as instructors can present real-time data, interactive tools, or multimedia of interest to students.

5. Zoom key functionalities for e - learning

3.Breakout rooms:

- **Small group work:** professors can split larger classes into smaller groups for discussions, projects, or collaborative activities, mimicking in-person learning environments.
- **Easy monitoring:** instructors can join breakout rooms to provide assistance and oversight (max. 50 rooms).
- **Broadcasting messages:** hosts can send announcements or reminders to all breakout rooms simultaneously, ensuring participants stay on track.
- **Collaboration tools:** within breakout rooms, participants can use features such as screen sharing, whiteboarding, and chat to facilitate collaboration.
- **No recording options:** while the main meeting can be recorded, breakout rooms do not support recording, which maintains privacy within group discussions.





5. Zoom key functionalities for e - learning

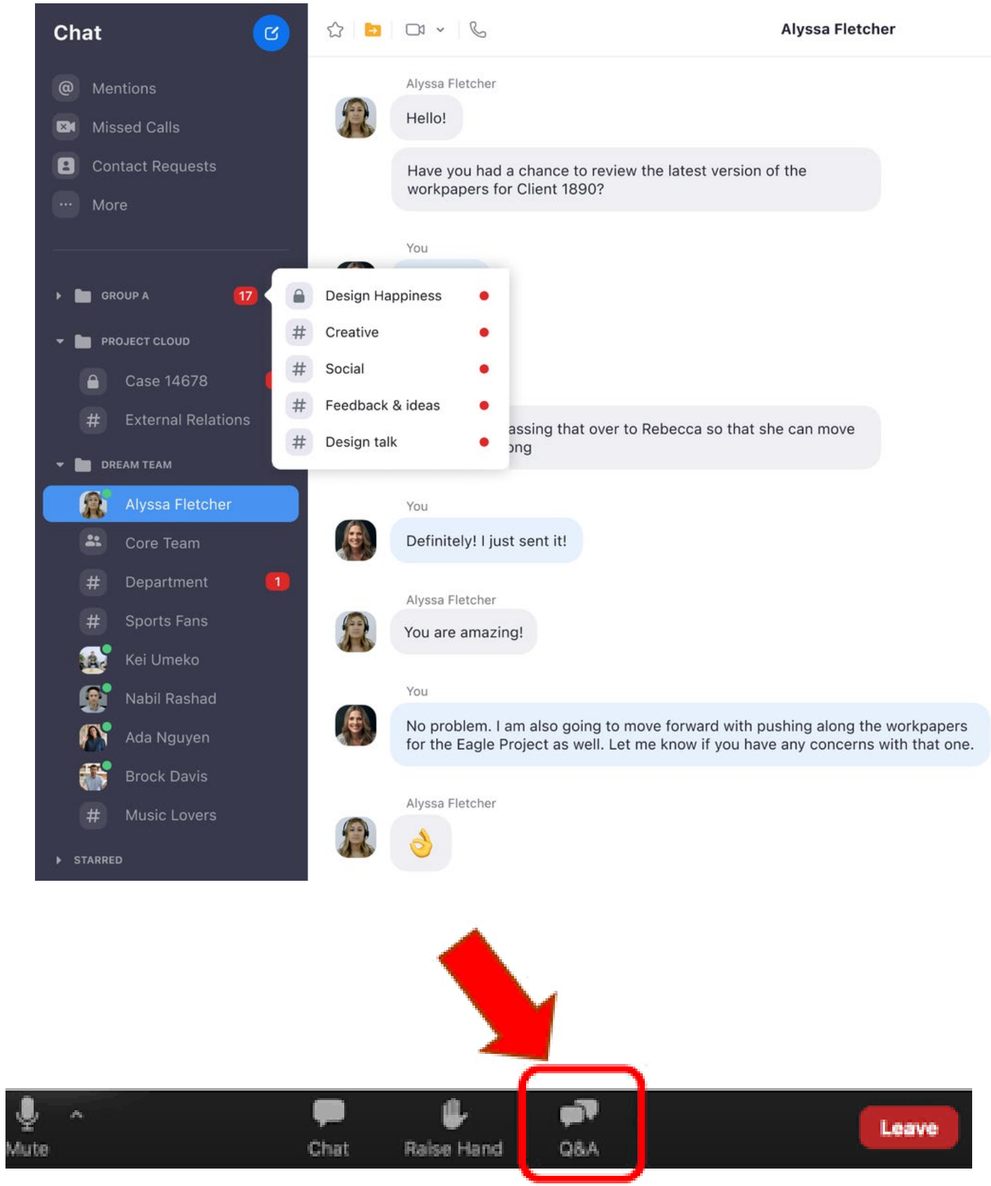
4. Meeting recording in Zoom

- Allows hosts to **capture audio, video, and shared content** during a meeting. It can be saved either locally (on a computer) or in the cloud (Zoom's servers), providing flexibility for educators and participants.
- **Flexibility for learners:** students can access recorded lectures and discussions on their schedule, which enhances learning opportunities for those who may have missed live sessions.
- **Resource for review:** recorded lectures can be integrated easily into online platforms and LMS, enhancing the overall approach to course materials. Recordings allow learners **to revisit complex topics** at their own pace, aiding in the reinforcement of knowledge.

5. Zoom key functionalities for e - learning

5. Chat and Q&A Features in Zoom

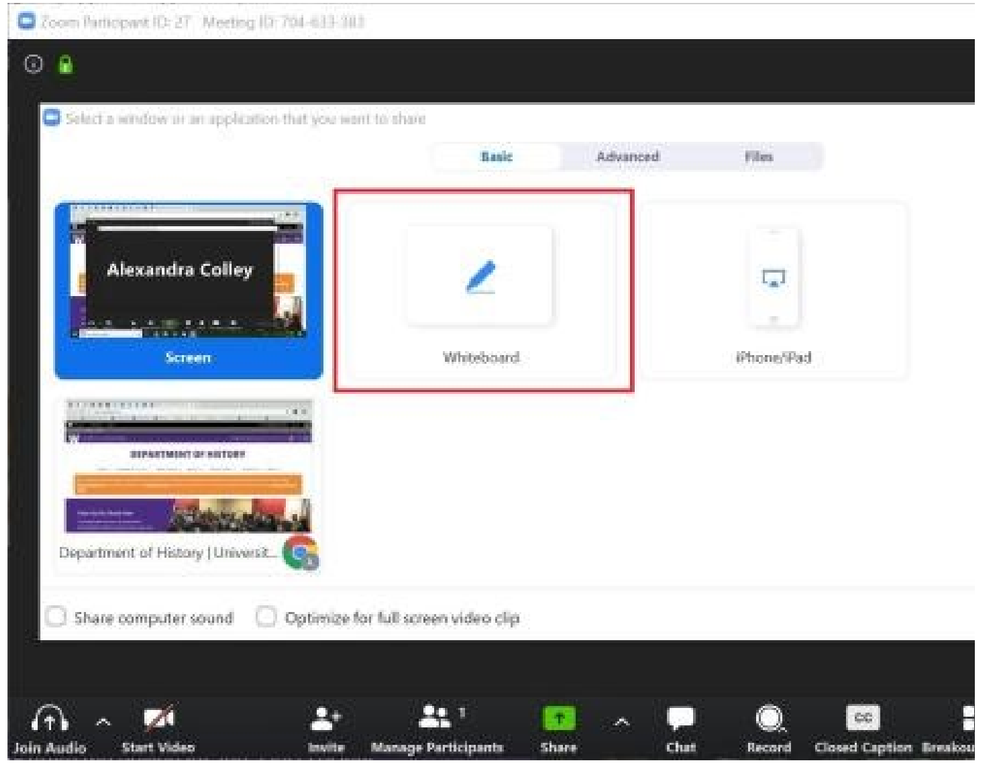
- Facilitate **real-time written communication during meetings,** allowing participants to post questions, comments, and engage in discussions without interrupting the flow of the session.
- **Text chat:** participants can send messages to all attendees or privately to specific individuals. This feature encourages engagement and fosters interaction among participants.
- **Files and links sharing:** users can share relevant documents, URLs, or resources directly through the chat, providing immediate access to materials discussed during the meeting.
- **Dedicated Q&A/ Polls section:** in larger meetings or webinars, a Q&A feature can be enabled, allowing participants to submit questions without cluttering the main chat.
- The Q&A feature helps **streamline questions and answers,** ensuring important topics are covered and addressed.



5. Zoom key functionalities for e - learning

6. Integrated whiteboard

- Allows users to **create and collaborate on a virtual whiteboard** during meetings. This tool mimics the functionality of a traditional whiteboard but adds digital capabilities for increased interaction and engagement.
- **Drawing tools:** users can choose from a variety of drawing tools, including pens, highlighters, and shapes, to illustrate concepts or ideas visually.
- **Text boxes:** participants can add text directly onto the whiteboard, facilitating the presentation of information and allowing for quick notes.
- **Multi-user collaboration:** all participants can interact with the whiteboard simultaneously, making it a collaborative space where ideas can be generated and discussed in real-time.
- **Clear and reset options**: users can clear individual elements or the entire whiteboard, allowing for easy organization and resetting during the session.



6. Implementing Zoom into the Curriculum

Purpose of integration: implementing Zoom into the curriculum aims to enhance teaching and learning experiences through effective use of technology. It provides opportunities for flexible, interactive, and engaging education that meets the needs of diverse learners.

Strategies for effective implementation

1. **Course design:**
   - **Hybrid learning models: c**ombine synchronous (live Zoom sessions) and asynchronous (recorded lectures, online discussions) components to provide a comprehensive learning experience. This allows for flexibility while still fostering real-time interaction.
   - **Structured syllabi**: incorporate Zoom sessions into the course syllabus, defining the purpose of each session, topics covered, and required materials. This clarity enhances student preparedness and engagement.
2. **Interactive learning activities:**
   - **Breakout rooms for group work:** utilize breakout rooms during live sessions to facilitate small group discussions, projects, or peer-to-peer learning. Define specific tasks for each group to encourage collaboration and accountability.
   - **Interactive lectures**: integrate polls, quizzes, and discussions into lectures using Zoom's built-in features. For instance, ask questions throughout the presentation or use tools like Mentimeter to gather real-time feedback.
3. **Guest speakers and panel discussions:**
   - **Bringing experts into the classroom:** utilize Zoom to invite guest speakers, industry professionals, or alumni to participate in classes, providing students with diverse perspectives and insights that enhance learning.
   - **Panel discussions:** organize interactive discussions with multiple guest speakers, allowing students to engage with professionals from various fields, fostering a broader understanding of real-world applications.

7. Challenges and considerations

Technical support:

- **Training for professors:** provide training sessions for educators to ensure they are comfortable with all of Zoom's features, particularly those relevant to their teaching strategies.
- **Student support:** create guides or support channels for students who may encounter technical issues during Zoom sessions, enhancing their overall experience.

Addressing engagement:

- **Catering to varied learning styles:** ensure that Zoom sessions are engaging by incorporating different teaching methods, such as discussions, group activities, and multimedia content.
- **Encouraging active participation:** promote a supportive classroom culture that encourages students to engage, ask questions, and participate in discussions openly.

8. The key benefits of e-learning platforms

1. **Adapting to a digital era**: e-learning tools aligns with the ongoing shift towards digital transformation in education, especially relevant in a post-pandemic world. As remote learning has proven viable, exploring how technology can enhance university education has become a timely topic.

2. **Supporting access to quality education**: for areas with limited access to quality higher education, like certain regions in Sub-Saharan Africa, technology platforms like Zoom make learning accessible to more students. This theme emphasizes breaking down geographic and socioeconomic barriers to knowledge.

3. **Enhancing engagement and interactivity**: traditional teaching methods can be restrictive, whereas platforms like Zoom offer tools that increase interactivity—such as breakout rooms, shared screens, and live polls. This theme reflects a commitment to making education more engaging and student-centered.

4. **Preparing students for a globalized world**: in today's interconnected world, students need skills in digital communication and remote collaboration. Its important to prepare students for a world where virtual interactions and teamwork are the norms.

8. The key benefits of e-learning platforms

5. Promoting innovation in agriculture: by adopting digital tools, universities can keep agricultural education up-to-date with the latest research and sustainable practices.

6. Improving adaptability and resilience: digital platforms make it easier to update content, adapt to new research, and provide flexible learning formats. This platforms helps universities to remain resilient and relevant by using technology to adapt to rapid changes.

7. Encouraging a lifelong learning mindset: technology in education allows students to develop digital literacy and autonomy, skills that are essential for lifelong learning. It is important to believe in empowering students to take charge of their own learning journeys in an evolving world.

9. Issues with online learning

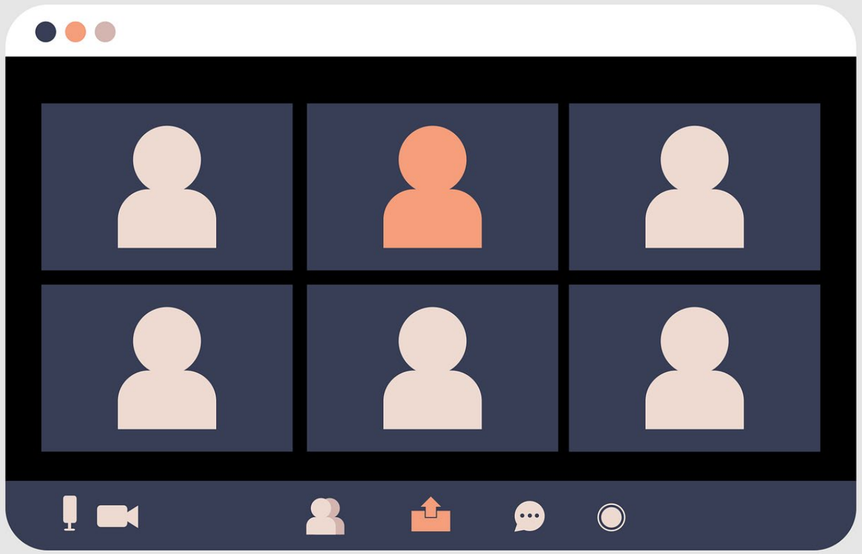
1. **Reduced personal connection**: in online settings, it's harder to build personal rapport with students, which can impact engagement and motivation. Body language, eye contact, and informal interactions that naturally occur in physical classrooms are often missing or diminished.

2. **Screen fatigue and mental strain**: extended periods of screen time can lead to "Zoom fatigue." Staring at a screen for long hours can strain the eyes, affect concentration, and contribute to overall mental exhaustion, which may reduce students' focus and learning effectiveness.

3. **Limited hands-on learning**: many fields of study, especially those requiring labs, practical applications, or real-world demonstrations, are difficult to translate effectively to a virtual platform. Students miss out on hands-on experience, which can impact learning in subjects like agriculture, engineering.

4. **Dependence on technology and internet access**: online learning requires reliable internet and access to devices, which may not be available to all students, especially in rural or under-resourced areas. This digital divide can lead to unequal access to education and a disparity in learning outcomes.

5. **Increased distractions and reduced accountability**: at home, students may face distractions that are absent in a classroom setting, such as household responsibilities, noise, or other online temptations. This can lead to reduced attention and less accountability for participation and learning.



9. Issues with online learning

6. Challenges with student engagement and participation: it can be harder to maintain student engagement in an online environment. Some students may feel uncomfortable participating on camera, or they may simply log in without truly engaging. Instructors also face challenges gauging student understanding and adjusting teaching approaches accordingly.

7. Privacy and security concerns: online platforms can pose privacy risks. Students and educators may worry about data privacy, unauthorized recordings, or "Zoom-bombing," where unauthorized participants disrupt sessions. These concerns can deter full participation.

8. Technical issues and interruptions: online platforms depend on stable internet and functional devices. Technical issues, such as poor connections, audio problems, or platform malfunctions, can interrupt classes and hinder the flow of learning, causing frustration for both students and teachers.

9. Reduced sense of community: virtual classes can feel isolating, reducing the sense of community among students. Social interactions, group projects, and casual discussions are limited online, which can impact the collaborative learning experience and reduce students' feelings of belonging.

10. Difficulty in assessing learning outcomes: online exams, quizzes, and assignments are more challenging to professors, which can lead to academic integrity issues. Moreover, assessing students' understanding without in-person cues may affect the accuracy of evaluations.

10. Questions session

1. What has been your overall experience using Zoom as a teaching tool?

2. Which Zoom features do you find most beneficial for teaching? (e.g., breakout rooms, screen sharing, polling)

3. What technical challenges have you faced when using Zoom, both for yourself and your students?

4. Have you noticed a difference in student participation levels compared to face - to - face classes? If so, how?

The future of education is not about technology; it's about how we use technology to create a more inclusive and engaging learning environment!

***FR:** L'avenir de l'éducation ne concerne pas la technologie; il s'agit de la manière dont nous utilisons la technologie pour créer un environnement d'apprentissage plus inclusif et engageant!*

GOOD LUCK! BONNE CHANCE!

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