



SYNCHRONOUS AND ASYNCHRONOUS TEACHING AND ASSESSMENT

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PRESENTATION OUTLINE

- Information and Communications Technology (ICT)
- Application of ICT to Education
- Online Learning
- Blended Learning
- Asynchronous Learning
- Synchronous Learning
- Open Educational Resources (OER)



INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

- Information and Communications Technology (ICT) is a term used to refer to the convergence of four (4) key infrastructure, namely:
 - Hardware – Desktop, Laptops, Tablets, Smartphones etc.
 - Software – Desktop Publishing, Graphics and Animations, Information Systems etc.
 - Storage Systems – File Systems, Databases, Datawarehouse, Cloud Storage etc.
 - Communications Systems – Wired Networks, Wireless Networks, Internet etc.
- In the 21st century, the delivery of ICT has been revolutionized by the introduction of Cloud-based technologies
 - Delivery of computing services over the Internet thereby offering faster innovation, flexible resources and economies of scale.



INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)...

- Transaction Processing Systems (TPS) is an information processing system which is used by an organization for the collection, modification, storage and retrieval of transactions.
 - **Batch Processing Systems** – information processing is slow and hence are not time-sensitive systems, e.g. payroll, billing, customer orders etc.
 - **Online Processing** – processing is done over a network or the Internet however may not be time-sensitive
 - **Near Real-time processing** – processing is fast however with a delay of a few minutes, e.g. sensor data, USSD bank transfer
 - **Real-time processing** – requires continual input, constant processing and steady output of data, e.g. online banking, ATM etc.



APPLICATION OF ICT IN EDUCATION

- Technologies are the driving force behind the most of the development and innovation in both developed and developing nations alike.
- ICT has added value to the process of teaching and learning alongside the organization and management of academic institutions.
- Various areas of application of ICT to education includes:
 - Developing course materials;
 - Delivering and sharing course contents;
 - Facilitating communication between teachers, learners and the outside world;
 - Creation and delivery of presentations and lectures;
 - Enhancing academic research;
 - Providing student enrollment.



ONLINE LEARNING

- Online Learning is any form of education that takes place over the Internet.
 - It is also referred to as e-learning or virtual learning.
- Online learning is not the same thing as distance learning which refers to learning that takes place across distances and not in traditional classrooms.
 - Various forms of distance learning include: correspondence courses via e-mail, telecourses via radio or television, CD-ROM courses with static contents, online learning and mobile learning.
- Online learning can be generally classified into asynchronous and synchronous learning.



ONLINE LEARNING...

- Major benefits of online learning include:
 - Convenience
 - Enhanced learning
 - Leveling of the playing field
 - Interaction
 - Innovative teaching
 - Improved administration
 - Savings
 - Maximize physical resources
 - Outreach



BLENDDED LEARNING

- Blended Learning (also known as Hybrid Learning) involves the integration of technology and digital media with traditional instructor-led classroom activities.
 - Give students more flexibility to customize their learning experiences.
- In Blended Learning, the in-person and online elements work together to create a richer learning experience.
 - Learning management systems (LMS), in-class response systems, smartphones and tablets and video-conferencing tools.
- Blended Learning Model include:
 - Face-to-face driver – teacher drives instruction and arguments with digital tools.
 - Rotation – students cycle through schedule of independent online study and face-to-face classroom time.
 - Flex – Most curriculum is delivered online and teachers are available for face-to-face consultation and support.
 - Labs – All curriculum is delivered digitally but in a consistent physical location and face-to-face classroom time.
 - Self Blend – Students choose to augment their traditional learning with online course work
 - Online driver – All curriculum is delivered online and face-to-face meetings are schedules if necessary.



ASYNCHRONOUS LEARNING

- This term is used to describe online learning that do not occur in the same place or at the same time.
- It uses resources that facilitate information sharing outside the constraints of time and place among a network of people.
- Benefits
 - Grants students access to course contents and instructional materials.
 - Allows students the opportunity to access course materials based on their schedules;
 - Students can revisit lessons as needed to improve comprehension and retention.
 - Students can take advantage of the extra time to process, practice, and respond.



ASYNCHRONOUS LEARNING...

- Examples of Asynchronous Learning include:
 - Watching pre-recorded lecture videos or lessons;
 - Viewing video demonstrations;
 - Reading and writing assignments;
 - Student Presentations
 - Online class discussions via discussion boards;
 - Learning activities such as quizzes, problem solving and games.
- Asynchronous Online Learning Tools include:
 - Google Classroom (Free LMS) and Forms, Moodle (Free LMS), Edmodo (LMS - Free and Premium), Microsoft Teams (Classroom) alongside other MOOCs such as: Coursera, Udemy, LinkedIn Learning, edX, Udacity etc.



ASYNCHRONOUS LEARNING TOOLS

- **Google Classroom**

- It is a free blended learning platform developed by Google for schools that aims to simplify creating, distributing, and grading assignments.
- The primary purpose of Google Classroom is to streamline the process of sharing files between teachers and students.

- **Google Forms**

- Google Forms is a survey administration software included as part of the free, web-based Google Docs Editors suite offered by Google.
- The app allows users to create and edit surveys online while collaborating with other users in real-time.
- The collected information can be automatically entered into a spreadsheet



ASYNCHRONOUS LEARNING TOOLS...

- **Moodle**

- Moodle is a free and open-source learning management system (LMS)
- It is used to create private websites with online courses for educators and trainers to achieve learning goals

- **Cousera**

- Coursera Inc. is an American massive open online course (MOOC) provider founded in 2012.
- Coursera works with universities and other organizations to offer online courses, certifications, and degrees in a variety of subjects.
- In 2021 it was estimated that about 150 universities offered more than 4,000 courses through Coursera.



SYNCHRONOUS LEARNING

- This is a term used to describe learning environment in which a group of students are engaged on the same platform at the same time via real-time processing system.
 - It became very popular as a result of the 4G communication although it became feasible during the advent of 3G communication.
- Software Applications which facilitate synchronous communication include:
 - Instant messaging (WhatsApp, Telegram, WeChat etc.), Social Media (Facebook, Instagram, etc.), Media Sharing (Pinterest, TikTok, Snap Chat , FaceTime etc.), Skype etc.
- Synchronous Online Learning Platforms include:
 - WhatsApp, Telegram, Google Meet (100% Free), Zoom (Free benefits), Microsoft Teams, CISCO Webex,



SYNCHRONOUS LEARNING TOOLS

- **Google Meet**

- Google Meet (formerly Hangouts Meet) is a video-communication service developed by Google and released in March 2017.
- The service was unveiled as a video conferencing app for up to 30 participants.
- During the 2020 COVID-19 pandemic, the use of Meet grew by a factor of 30 between January and April 2020, with 100 million users a day accessing Meet, compared to 200 million daily uses for Zoom as of the last week of April 2020.
- Google suspended its usual 60-minute limit for unpaid accounts.
- Up to 100 members per call for Google Workspace Starter users, up to 150 for Google Workspace Business users, and up to 250 for Google Workspace Enterprise users.
- Real-time closed captioning based on speech recognition.



SYNCHRONOUS LEARNING TOOLS...

- **Microsoft Teams**

- Microsoft Teams is a proprietary business communication platform developed by Microsoft, as part of the Microsoft 365 family of products.
- Teams primarily competes with the similar service **Slack**, offering workspace chat and videoconferencing, file storage, and application integration.

- **Zoom**

- Zoom Meeting is a proprietary video teleconferencing software program developed by Zoom Video Communications.
- The free plan allows up to 100 concurrent participants, with a 40-minute time restriction.
- Users have the option to upgrade by subscribing to a paid plan.
- The highest plan supports up to 1,000 concurrent participants for meetings lasting up to 30 hours.



OPEN EDUCATIONAL RESOURCES (OER)

- OER are freely accessible, openly licensed text, media, and other digital assets that are useful for teaching, learning, and assessing, as well as for research purposes.
 - The term OER describes publicly accessible materials and resources for any user to retain, reuse, re-mix, revise, and redistribute under some licenses.
 - The development and promotion of OER is often motivated by a desire to provide an alternate or enhanced educational paradigm.
- Popular sources of OER include:
 - MIT OCW (<https://ocw.mit.edu/>), Lumen Academy (<https://lumenlearning.com/what/>), Merlot (<https://www.merlot.org/merlot/index.htm>), OER Commons (<https://www.oercommons.org/>), OpenStax (<https://openstax.org/>), Open Culture (<http://www.openculture.com/>) etc.



THANK YOU FOR LISTENING!!!!

QUESTIONS???