# Innovative Pedagogies in Digital Technologies

BIJU K, PhD

Enduring transformations can be brought about through “pedagogy,” that is, **improvements in “the theory and practice of teaching, learning, and assessment**” and **not the mere introduction of technology in classrooms** (Sharples, 2019).

PISA analysis of the impact of Information Communication Technology (ICT) on reading, mathematics, and science in countries heavily invested in educational technology showed mixed effects and "no appreciable improvements" (OECD, 2015, p.3).

# Mission

# Life Long Learning

# Philosophy

*Learner Centred*

Constructivist

*Constructionist*

# OBE

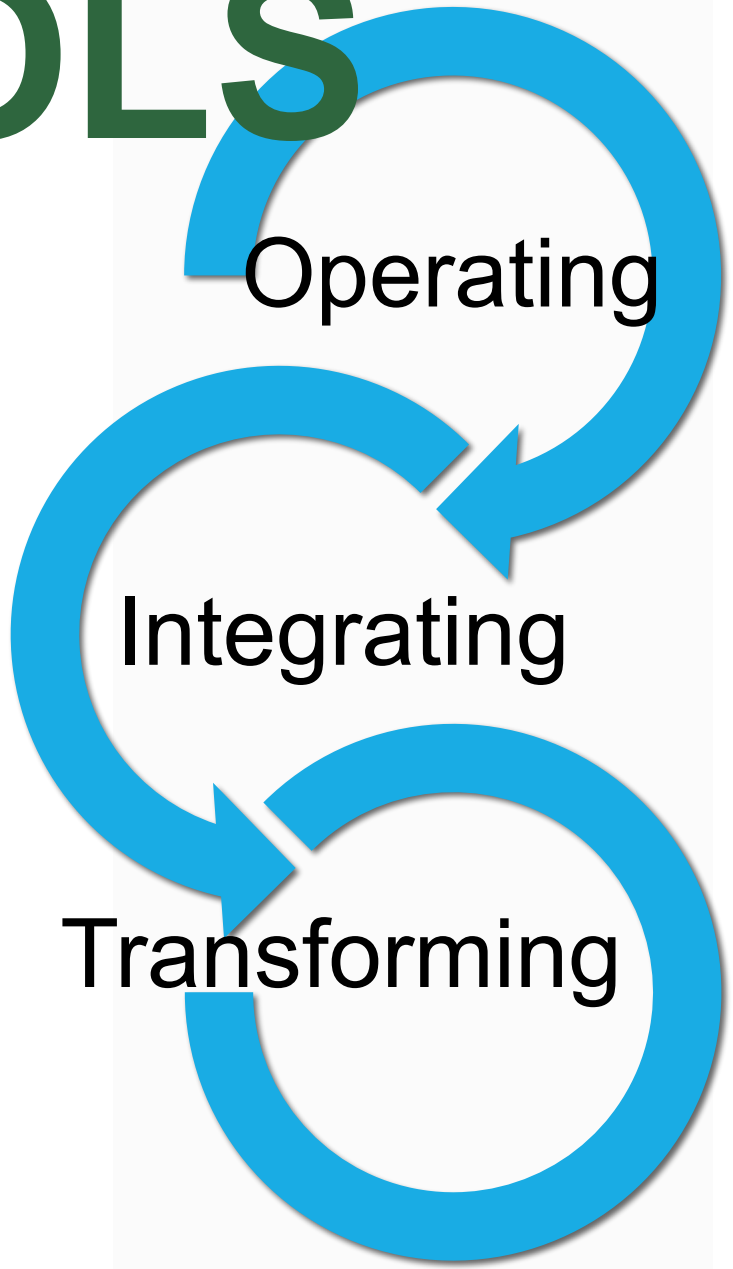
- SMART

- Disciplinary Knowledge
- Communication Skills
- Critical Thinking
- Problem Solving
- Analytical Reasoning
- Research Related Skills
- Scientific Reasoning
- Reflective thinking
- Information /Digital Literacy

# Digital Learning

- Digital learning" is a learning method based on the use of **new digital tools** to enable learning.
- **It is, therefore, not simply a question of digitising educational content** but of a set of educational methods.

# TOOLS



# Methodologies

- Pedagogy
- Andragogy
- Heutagogy
- Peeragogy
- Cybergogy

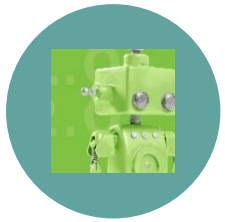
# Learning happens through…

VIRTUAL CLASSROOM


MOOC

SPOC

SOCIAL LEARNING



ADAPTIVE LEARNING

# Digital Learning

m-Learning

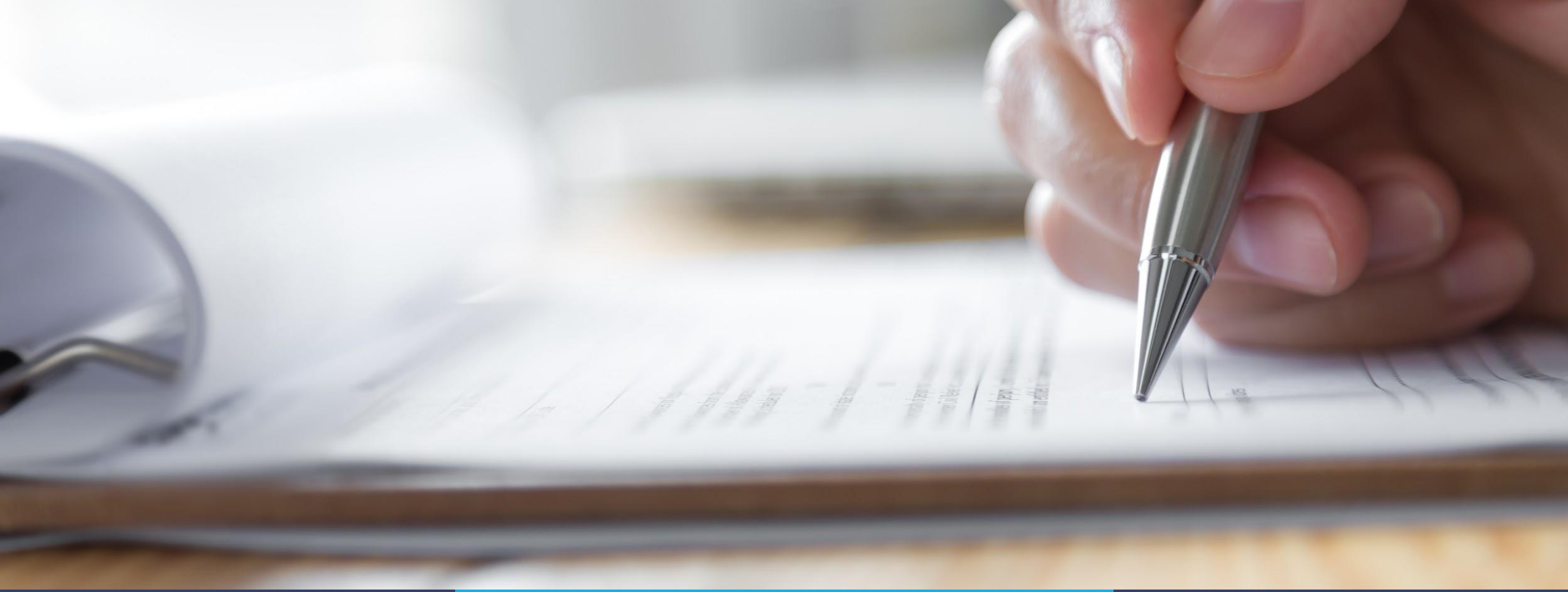
Blended Learning

Ubiquitous Learning


- Mind mapping
- Mentimeter
- Flipgrid
- Forms & Quizzes
- Simulation
- VR and AR
- LMS


- Dual Learning Scenarios
- Hybrid Models
- Influencer-led education
- Pedagogies of micro-credentials
- Pedagogies of the home


- Pedagogy of autonomy
- Pedagogy of discomfort
- Walk and Talk
- Watch parties
- Wellbeing education



# Wrap Up

# Thank you

QUESTIONS?

# INNOVATIVE PEDAGOGIES
## WITH DIGITAL TECHNOLOGY

**Dr. Mohd Mamur Ali**
Assistant Professor
**Jamia Millia Islamia**

# Innovative Pedagogies with Digital Technology

- Innovative pedagogy refers to the application of new and creative approaches to teaching and learning.
- It involves designing and implementing instructional strategies that go beyond traditional methods, aiming to enhance student engagement, critical thinking, problem-solving skills, and overall learning outcomes.
- Transforming traditional teaching and learning methods.
- Play a crucial role in effectively utilizing ICT tools and resources to enhance the educational experience.

# Why Innovative Pedagogies?

- To provide new and exciting ways to engage students in the learning process.
- To encourage active participation, critical thinking, and problem-solving, making learning more enjoyable and meaningful.
- To addressing diverse learning needs: Innovative pedagogies offer a range of approaches, such as project-based learning, flipped classrooms, or collaborative learning, to accommodate diverse learners.
- To Fostering creativity and innovation: Traditional teaching methods often focus on rote memorization of information. Innovative pedagogies promote creativity, innovation by encouraging students to think critically, explore new ideas, and solve real-world problems.

# Why Innovative Pedagogies?

- To enhancing digital literacy: incorporate technology and digital tools into the learning process, enabling students to become proficient in using digital resources, collaborating online, and navigating the vast amount of information available.

- To Promote lifelong learning: Innovative pedagogies emphasize the development of essential skills, such as communication, collaboration, critical thinking, and adaptability.

- Encouraging active learning: Innovative pedagogies shift the focus from passive learning to active learning.

# Role of Teacher in Digital Era

- **Facilitator of Learning:** Teachers now act as facilitators of learning rather than just information providers. They guide students in navigating digital resources, developing critical thinking skills, and applying knowledge to real-world scenarios.

- **Curators of Content:** With the vast amount of information available online, teachers curate and select relevant and reliable digital content to support the curriculum. They help students evaluate the credibility of online sources and foster digital literacy.

- **Technological Integrators:** Teachers are responsible for integrating technology effectively into their teaching practices. They explore digital tools, learning management systems, and educational apps to enhance instruction and create engaging learning experiences.

- **Personalized Learning Advocates**: Technology allows teachers to personalize instruction to meet individual student needs. They can use adaptive learning platforms, data analytics, and online assessments to tailor learning experiences and provide targeted feedback.

- **Collaborators and Co-learners**: Teachers collaborate with colleagues and educators worldwide through digital platforms to share ideas, resources, and best practices. They also engage in continuous professional development to keep up with evolving technologies and teaching strategies.

# Role of Learner in Digital Era

- **Active Participants**: Students take an active role in their learning, use digital tools to explore, discover, and create knowledge. They engage in online discussions, conduct research, and collaborate with peers to deepen their understanding of concepts.
- **Self-directed Learners**: Digital resources empower students to take ownership of their learning. They set goals, manage their time, and access educational materials independently. They develop skills such as information literacy, digital citizenship, and online research.
- **Critical Thinkers**: Students learn to evaluate and analyze information critically in the digital era. They differentiate between reliable and unreliable sources, identify bias, and develop a discerning mindset. They also learn to solve problems creatively using technology.
- **Collaborators and Global Citizens**: Technology enables students to collaborate with peers from diverse backgrounds, fostering cultural understanding and global citizenship. They engage in virtual teamwork, connect with experts, and contribute to online communities.
- **Multimedia Creators**: Students use various digital tools to express their learning creatively. They create multimedia projects, presentations, videos, and websites to showcase their knowledge and skills. They develop digital literacy and communication skills in the process.

# Recent Digital Technologies….

- **Artificial Intelligence (AI) and Machine Learning (ML)**
- **Internet of Things (IoT)**: The IoT refers to the network of physical devices, vehicles, appliances, and other objects embedded with sensors, software, and connectivity to exchange data and perform automated actions.
- **Virtual Reality (VR) and Augmented Reality (AR)**: VR immerses users in a computer-generated virtual environment, while AR overlays digital information onto the real world. These technologies have seen increased adoption in gaming, entertainment, training, and other sectors.
- **Blockchain:** A decentralized and distributed digital ledger technology that securely records and verifies transactions. Blockchain is primarily associated with cryptocurrencies like Bitcoin, but its potential applications extend to areas such as supply chain management, finance, and healthcare.
- **Cloud Computing**: Cloud computing enables the delivery of computing services over the internet, providing on-demand access to resources such as storage, servers, databases, and software applications.

# Recent Digital Technologies….

- **Big Data Analytics**: With the exponential growth of data, big data analytics techniques and tools have emerged to extract valuable insights from large and complex datasets. These insights help organizations make data-driven decisions and gain a competitive advantage.

- **Cyber security Technologies**: As digital threats continue to evolve, cybersecurity technologies have advanced to protect networks, systems, and data from unauthorized access, breaches, and attacks.

- **Robotics and Automation**: Advances in robotics and automation technologies have resulted in the development of robots capable of performing complex tasks in various industries, such as manufacturing, healthcare, and logistics.

- **Natural Language Processing** (NLP): NLP focuses on enabling computers to understand, interpret, and generate human language. Applications include voice assistants, chatbots, sentiment analysis, and language translation.

# Innovative Pedagogies….

- Flipped Classroom
- Blended Learning
- Cooperative Learning
- Game Based Learning
- Personalized Instruction/Learning
- Inquiry based learning
- Project based Learning
- Mobile Learning

# Flipped Classroom

- Students learn new concepts and content at home through online resources, such as videos, interactive modules, or e-books.
- Classroom time is then utilized for discussions, collaborative activities, and problem-solving exercises.
- ICT tools like learning management systems (LMS), video platforms, and online discussion boards facilitate this approach.

# Example of Flipped Classroom

## Teacher's Tasks:

- Teacher records video lectures and upload to an online platform accessible to all students.
- Teacher also provides supplementary materials such as readings, worksheets, and online resources for further understanding.
- Teacher provides immediate feedback, clarifies misconceptions, and guides students through challenging problems.
- Teacher monitors progress, provides individualized feedback, and offers further resources or support if needed.

# Example of Flipped Classroom

Students' Tasks:

- Students watch the video lectures and review the supplementary materials before coming to class.
- Students are encouraged to take notes, write down questions, and highlight areas of confusion.
- During the face-to-face class time, students are engaged in interactive activities, discussions, and problem-solving exercises.
- Class time is also dedicated to addressing student questions and concerns, promoting deeper understanding.
- After the class, students are given additional practice exercises or assignments to reinforce their learning.

# Blended Learning

- Blended learning combines traditional face-to-face instruction with online learning activities.
- Teachers utilize ICT tools like LMS, video lectures, online discussions, and interactive modules to deliver content and engage students in self-paced learning.
- This pedagogy provides flexibility, individualization, and the opportunity for students to revisit content at their own pace.

# Blended Learning

- Before the class, students are assigned an online video lecture
- During the class, teacher starts with a brief review of the online lecture material. Then, the students participate in activities/discussions /experiments etc.
- The teacher facilitates the activities/discussion/experiments, provides guidance, and answers questions.
- After the in-class activities, students are assigned to participate in an online discussion forum where they can share their observations, ask questions, and discuss their learning from the discussion/activities/ experiments.
- Teacher monitors the discussions and provides feedback and additional explanations as needed.

# Blended Learning

- To assess the students' understanding, the teacher assigns an online quiz or a short written assignment related to the topic.
- Students complete the assessment independently at home or in the computer lab. The teacher reviews the results and provides personalized feedback to help students improve their understanding.
- Follow-up activities: The teacher assigns additional online resources, such as interactive simulations or virtual lab activities, to further explore and reinforce the concepts covered in class. Students can access these resources at their own pace and review the material as needed.

# Conclusion

When implementing these innovative pedagogies, it's important to consider factors such as teacher training, availability of ICT infrastructure, digital literacy, and accessibility to ensure equitable access and effective integration of ICT in education.