Emerging Technologies for Effective Teaching & Learning

Continuing Education Program for Next Education India Pvt Ltd

Conducted by Educational Technology, IIT Bombay

September 19-21, 2019

IIT Bombay

Next Education
Transforming Education

Group Discussion

Identifying emerging technologies solutions to teaching-learning challenges

IIT BOMBAY

Activity 1.1 – Pick a problem of your interest

1. How can we use technology to map syllabus concepts to students' real-life experiences?

2. How can we use technology to handle large and diverse groups of students?

3. How can we use technology for various types of assessments?

4. How can we evaluate effectiveness of technology integration?

Activity 1.2 – Group Discussion

1. Move to the corner of the room where the problem of your choice is displayed.

2. Form groups; 4-5 people in each group, having the same problem.

3. Brainstorm technology solutions to your problem; Discuss and Conceptualize one solution to the problem.

Activity 1.3 – Solution sharing

One person from each group presents the group's solution
Audience responds – appreciate, critique, add points, refine, …

Groups:

1. … map syllabus concepts to students' real-life experiences?
2. … handle large and diverse groups of students?
3. How can we use technology for assessments?
4. How can we evaluate effectiveness of technology integration?

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How can we use technology to map syllabus concepts to students' real-life experiences?

Prof. Gwo-Jen Hwang (National Taiwan University) – "Students used mobile tablets and conducted observations in botanical gardens, butterfly gardens, and ecology parks. The learning system conducts in-time assessment and provides feedback."
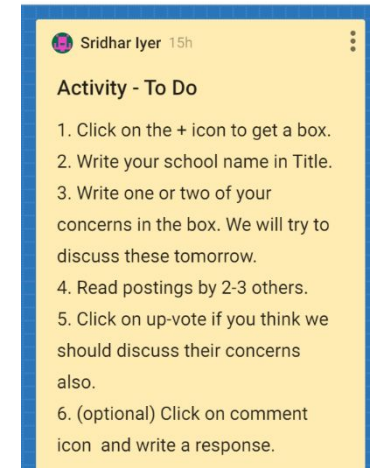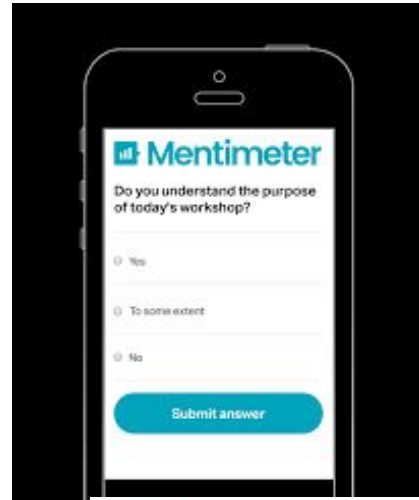
Some solutions to Q2

How can we use technology to handle large and diverse groups of students?

In-class – Peer Instruction

Multiple videos for different needs

Adaptive tutoring systems

Some solutions to Q3

How can we use technology for various assessments?

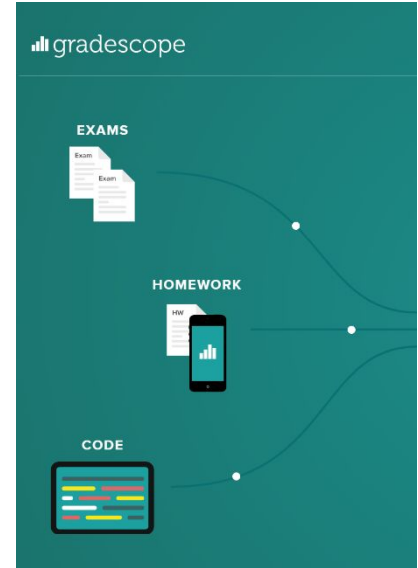Diagnostic, Formative and Summative -

Online MCQs
LMS, Adaptive Tutors
Auto-graders

ASSET is a skill based test that measures student's conceptual understanding, benchmarks school's performance at an international, national & regional level with actionable insights through easy-to-understand reports.

Some solutions to Q4

How can we evaluate effectiveness of technology integration?

TEL Metrics:

- *Effectiveness* – Measure how much learning happens for the chosen topic.
- Attractiveness – Measure how much engagement happens with the topic.
- *Efficiency* – Measure reduction of effort for any given task.
- Accessibility – Measure how well does the technology address diverse needs.

Pedagogical Alignment **(Dimension)**				
Score **Question**	**0** **(Missing)**	**1** **(Inadequate)**	**2** **(Almost)**	**3** **(Target)**
		Scale		
P1. Are learning objectives stated explicitly? *What does stated explicitly mean?*	None of the learning objectives are	Only some learning objectives are	All necessary learning objectives are stated	All necessary learning objectives are stated explicitly. They can be

Digital Blooms Taxonomy:
www.et.iitb.ac.in/ET4ET/Resources/
004D2AM2- Digital Blooms.pdf

End of Group Discussion

www.et.iitb.ac.in