ENGAGEMENT IN M-LEARNING: Situating Learning Objects in Learner-Centered Activities

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Menu for This Session

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INTRODUCTION: Purpose, Terms and Questions
Engaged learning is when learners construct meaning, communicate and collaborate effectively, solve problems, self-regulate their learning, and learn intentionally in a facilitated learning environment.
The primary motivation for integrating ICT in education is that it supports learners in their own constructive thinking, allows them to transcend their cognitive limitations, and engages them in cognitive operations they may not have been capable of otherwise (Salomon, 1993).
Affordances of ICT – Types of Tools


Affordances of ICT plus Mobility
(anytime everywhere)
“As long as computers are down the hall and up the stairs to the lab, they are irrelevant to education”

Mobile ICT have the advantage over desktop PCs that they are small enough to be carried anywhere and relatively inexpensive.

Education Professor Elliot Soloway (2001), University of Michigan.
Affordances of Mobile-ICT

“… We expect students to use computers only when they sit in a computer lab. This is not a very real experience … whereas, the Palm gives the students the ability to use the computer any time an idea pops into their head.”

Director of Technology Darrell Walery (2001), Consolidated High School District.
Engagement in M-Learning

How can learners be engaged in the mobile ICT-mediated learning environment?
Engagement in M-Learning?
Engagement in M-Learning?
Engagement in M-Learning?
Engagement in M-Learning?

Zits by Scott and Borgman

I downloaded my summer reading assignments to my PDA. So I don’t have to carry all those books around.

Cell phone: Cell me Ish!

It would be nice if the screen was a little bigger though.

Hope your scrolling thumb is in good shape, dude.

[Cartoon Image]
Engagement in M-Learning?
REVIEW OF R&D EFFORTS IN M-LEARNING: Issues and Lessons Learnt
Review of R&D Efforts
TecXplorer Project

Key Features:
- Creative use of Pocket PD dataloggers for inquiry-based science fieldwork
- Harnessing the mobility of Pocket PCs to move scientific investigations beyond the classroom
- Getting learners to brainstorm an area of investigation using the IT tool

Nan Chiau Primary School, Singapore
Engaging learners in the science process skills through fieldwork:

- observe – identify relevant observations made
- generate – construct a hypothesis and how to test it
- analyse – identify variables and relationships between the variables
- evaluate – decide on the effectiveness of the method used and the accuracy of and data obtained
Phase I: Carry out research on a central topic in small groups where each learner specialises in particular topic

Phase II: Share what they learn with other students in the research group and in other groups

Phase III: Participate in some sequential task together
Integrating Palmtop Across K-5 Curriculum

Key Features:
Extensive use of Palmtop by K-5 in all areas of curriculum:

- WordSmith: a word processor that includes a spellchecker and thesaurus
- PiCo Map: a concept mapping application in all subjects
- Quizzler: create quizzes in science and social studies
- Sketchy: draw animations of concepts
- E-book Studio: create e-books and checklists on writing

Willowdale Elementary School, USA
An Example: The Million-Dollar Project

The students' objective is to spend $1 million in a project designed to make Omaha a better place.

On the first day, the teacher beamed the students a check book program and ceremonially deposit a million dollars in each of their accounts. Over the course of the project, students use their handhelds to research prices, work with percentages, and develop charts and budgeting skills.
GIS in the Classroom

Key Features:
• Using Geographic Information Systems (GIS) software and handheld computers, eighth graders at Spain Middle School in Detroit, Michigan, locate, identify, and map hazards and dangerous conditions in their neighborhoods.
• GIS integrates data and uses it to draw maps of specific areas and provide other analyses.
• Students work in classrooms and in the field with staff members from Wayne State University.
• The program is integrated into the technology and social studies curriculums.

Spain Middle School, USA
The model features youth involvement (community mapping), capacity building with neighborhood city halls, data-driven problem tracking, and increased accountability through systematic follow-up and evaluation.
LookAgain Programme

Key Features:
- Digital camera to support the outreach goals of the Look Again program.
- Capturing finely honed images to be displayed in a variety of ways.
- Flexibility in image capture to foster artistic creativity.
- Ease-of-use for pupils to manipulate.
- Fostering enthusiasm for photography an arts beyond the Look Again experience.

University of California, Irvine (Sch of Art)
Key Features:

- Each student works on 25-50 vocabulary words.
- "We didn't want the students to take just one picture per vocabulary word, we wanted them to take many images for each word in order to broaden the subsequent class discussions."
- The Look Again project guidelines asked the students to capture images, not just in their school environment, but in the community at large, and at home.
- Students were able to execute the project themselves, from choosing the subject, to capturing it digitally, uploading it to a computer, placing the image in context and writing around it.

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Engaged Learners in M-Learning

- Make connection of their learning meaningfully
- Source, evaluate and use information sources
- Participate in learning individually and collaboratively
- Use appropriate tools in learning tasks
- Apply knowledge and skills to solve problems
- Reflect and evaluate own learning tasks in both product and process
- Identify future learning needs and show desire in pursuing them
Engaged Learners in M-ICT Environment

- Learners should be able to experience the scientific, mathematical, geographical and other phenomena by doing – manipulating tools etc.
- Learners should be able to express these experiences in multi-modal – authoring tools etc.
- Learners should be able to make and construct meaningful observations – concept maps, CSCL, etc.
LEARNING OBJECTS (LO): A Quick Overview
Learning Objects – Definition

- Learning objects are any element in an instructional model that can be independently drawn into a momentary assembly in order to create an instructional event.

- It has the potential for reusability, adaptability and scalability.
Learning Objects – Examples
Your Selections

Wood Joint: Mortise and Tenon
Artefact: Table

loading test

load = 64.77 N

Start Again

developed by Foo Li Ming and Leow Mun Tat in consultation with Daniel Churchill, NIE
Learning Objects – A Metaphor?
Learning Objects – A Better Metaphor?

Democritus from Abdera

IT'S LIKE THIS...

- electron (-)
- proton (+)
- neutron (0)
Learning Objects – The Film Metaphor

Establishing Shots – Context Establishment
Medium Shots – Demonstrations of Relevance
Close-Ups – Details of Concept
RE-VISITING LEARNING OBJECTS:
Context, Learner-centered Activities, & Tools
Context, Activities & Tools

- **Context** - Scenario, problem, case
- **Activities** - Learners work on tasks socially and collaboratively
- **Tools and Templates** - Resources and scaffolding to help learners to perform their tasks
Situating Learning Objects in M-Learning

- Wood Joint Craz
- Loading test
- Initial speed of 70 mph
- Displacement 1.5885 meters
- Limbic System
  - The limbic system is situated within the central area of the cerebral hemispheres.
  - It is a system of brain structures that are associated with functions like arousal, motivation, emotional memory, and our ability to smell.
Salomon (1993, p.189) proposes: “No tool is good or bad in itself; its effectiveness results from and contributes to the whole configuration of events, activities, contents, and interpersonal processes taking place in the context in which it is being used.”
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Thank You!!!