Ubiquitous learning, ubiquitous computing, and lived experience

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Ubiquitous learning

- occurs not just in classrooms, but in the home, the workplace, the playground, the library, museum, and nature center, and in our daily interactions with others.
- becomes part of doing; we don't learn in order to live more fully, but rather learn as we live to the fullest.
- through active engagement.
- no longer identified with reading a text or listening to lectures, but rather occurs through all the senses - sight, hearing, touch, feel, and taste.
Audio-visual materials

1. Blackboards and bulletin boards
2. Posters, cartoons, clippings
3. Dramatics: pantomimes, playlets, pageants, puppet shows, shadow plays
4. Trips, journeys, tours, visits
5. Models, objects, specimens
6. Charts: organization or flow, table, tree or stream
7. Graphs: area, bar, diagram, line, pictorial statistics
8. Maps: flat, relief, projected, electric, globe (celestial or terrestrial)
9. Microscopes
10. Microprojectors, reading machines; microfilms, microphotographs, microprint
11. Stereoscopes; hand, binocular, televiewers; stereographs, disc for televiewers
12. Flat pictures; photographs, prints, postcards, positive transparencies
13. Still pictures projectors and projected-opaque, filmslides, slides (glass, cellophane, ceramic, etc.)
14. Sound filmslides projectors; sound filmslides
15. Motion pictures projectors and projected: silent films, sound films
16. Sound recorders: transcriptions
17. Phonographs; disc, wire; recordings
18. Talking books
19. Radios, loudspeakers, public address systems, intercommunicating systems
20. Television
Media ecosystems

Print: books, magazines, maps, charts, handwriting, journals, captions

Realia: painting, toys, clay, blocks, rocks & fossils, specimens, puppets

Digital media: simulations, web spaces, social networks, texting, video, photos, games, probes, VR, GPS

Body: dance, voice, song, extension, perception, feelings
Low-Cost Multi-touch Whiteboard using the Wiimote
Inquiry cycle

- Ask
- Investigate
- Create
- Discuss
- Reflect
Johnny Lee’s inquiry

play, HCI

procrast-engineering

specs, test

webpage, video

build devices
My inquiry

- Lee’s website
- projects, writing
- how it works
- web, YouTube
- colleagues, blog
- blog, Wiimote
Which media work best?

- Plant Pathology course
- diverse student background & interests
- 19 different instructional media
Media ecosystem

- visual aids: chalkboard, videotapes, overheads, color slides, PowerPoint slides
- web-based tools: website with text, images, and interactive exercises, and quizzes, PowerPoint notes
- face-to-face: lecture, small group discussion, whole class discussion, i>clickers
- paper-based tools: handouts, in class writing, outside of class, review grids
Results

- across diverse learning styles, majors, and genders, many media were deemed to be useful for all learners
- usefulness depended on how it fit with others media & course content, how the instructors used it, etc., not on intrinsic properties
- non-science majors found multiple media especially valuable
New challenges

People have to adapt to the work, habits, and values of the machines...are generally regarded as the sources of problems, while devices are considered as means to solutions...[new] social settings eliminate the opportunities of developing those human skills that are fundamentally different from the skills of machines: abilities such as listening, interpreting, instructing, and working out to mutually acceptable accommodations. But it is the skills, more than anything else, that the global village needs. (Franklin, 2006)
An expanded concept of instructional design that includes the purpose of education, the need to teach the person as well as the content, and the importance of the social context of learning is required before we can implement computer-based collaborative learning for the children in our schools. (Wiburg, 1995)
What is inquiry?

To feel the meaning of what one is doing, and to rejoice in that meaning; to unite in one concurrent fact the unfolding of the inner life and the ordered development of material conditions—that is art.

–John Dewey, “Culture and industry in education”
Conclusion

- Analyze
  - media ecosystem as a whole
  - how media support inquiry
  - how media affect our capacity to develop as whole human beings

- Ubiquitous learning is not a solution, but a new challenge for the development of “critical, socially-engaged intelligence”