

WHAT ARE THE PRACTICES AND CHALLENGES OF TEACHING MOBILE COMPUTING AT THE UNIVERSITY LEVEL?

Integrating Mobile Programming Courses into a College Curriculum

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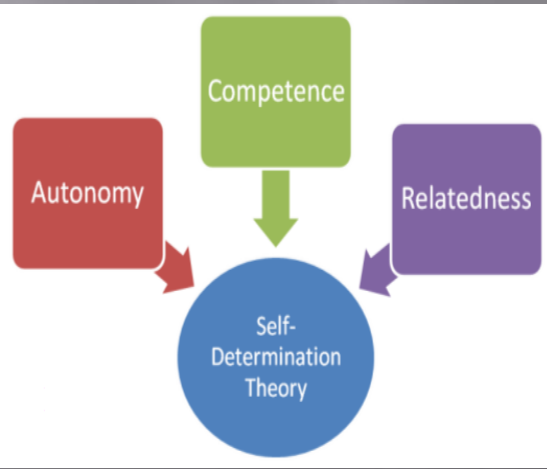
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Framework

- ▣ Integration of mobile devices into the classroom can have a profound impact
 - ▣ Computing power anywhere (Liu, et al., 2003)
 - ▣ Social computing impact (Yang, Lan, Huang, 2005)
 - ▣ Emphasizes learner centered practices (Roschelle, 2003)
- ▣ Enhances
 - Collaborative learning (Gay et al., 2001)
 - group work
 - Communication

Self-Determination Theory (SDT)

- ▣ The universal and basic desires for competence, autonomy and relatedness are realized through the degree that needs have been satisfied or thwarted. (Deci & Ryan, 2008)
 - Competence – the need to experience confidence in one’s abilities and affect outcomes in a learning environment
 - Autonomy – Choice, participating because of interest
 - Relatedness – The social dimension; may perform behaviors which are not inherently interesting when others to whom they feel connected value them



Background

- ▣ Fall 2008 - ACU launches Mobile Initiative – first university to announce distribution of iPhones to incoming freshman class
- ▣ Summer 2009 - First Mobile Computing programming course offered

Objective

- ▣ Initial Goal: Ability to develop mobile applications for iPhone or iPod Touch
- ▣ Balanced in theory & application
- ▣ Prerequisites:
 - Database
 - A programming language

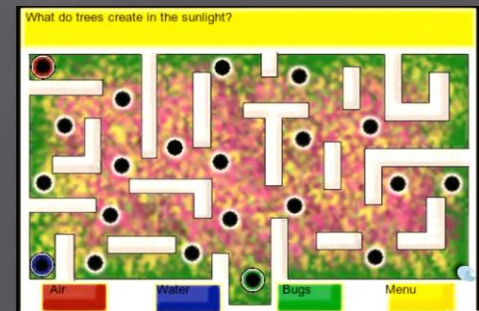
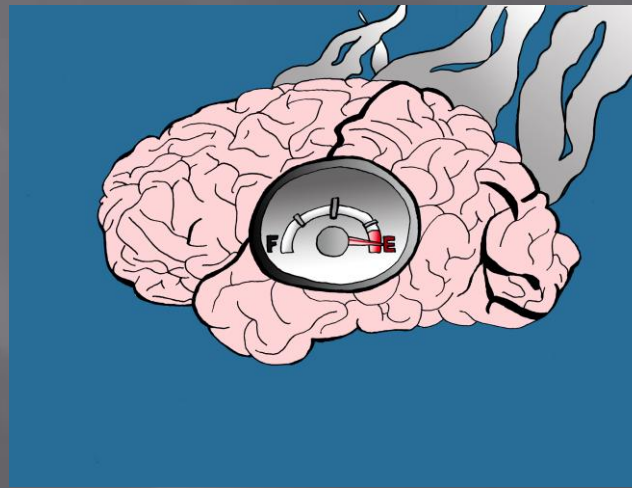


First Iteration of Course

- ▣ 3 week intensive summer course
 - Computer Science & Information Technology majors
- ▣ Borrowed a Mac lab from English department
 - Used Apple iOS SDK under a University Developers license
 - These students did not have devices, dependent on the simulator for testing
- ▣ 4 assignments including a major final project
 - 45 hours of instruction
 - Students averaged 60/week working on projects
 - Presentation of final projects attended by University and local media

Subsequent Iterations of Mobile Computing

- ▣ Mobile Computing I & II added as permanent courses Fall 2009
- ▣ Mac lab added to our building
- ▣ Spring 2010: added iPad development
- ▣ Fall 2010: added Android
- ▣ Spring 2011: Mobile Games



Collaborative Opportunities

- ▣ Faculty & Staff regularly contacting (and contracting) with students with ‘killer app’ ideas
- ▣ Computer Science/Information Technology students have become “rock stars” on campus.
- ▣ The Optimist



Issues

- ▣ Ownership
- ▣ App publication
- ▣ Hardware & Software availability
- ▣ Too much demand (for students and for course)

Future of Mobile Computing



- ▣ Concentration in Mobile Development
- ▣ Moving Mobile Computing courses online to better handle the demand
- ▣ Cross-Platform Development
 - Anscas Mobile's Corona
- ▣ Mobile Game Development
 - Unity 3D & Corona

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