Today's EdTech: Tuning in, getting turned on, and building relationships

QR Code for my homepage

Teaching & learning resources

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WILEY

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Goal: deep, sustained learning
Challenge: how do we…

- Keep our students coming to class and AWAKE in class?
- Maintain communication with our students?
- Help develop confidence and community?
- Know where our students are struggling?
- Help students identify where they are struggling?
- Provide help when students need it? (24/7!)
- Help students who can't come to class?
- Provide abundant and timely feedback?
- Stay excited about teaching the same class year after year?

TECHNOLOGY CAN HELP!

2

Teaching & Learning is about **building relationships.**

Group input…share something you've done with your class that was GREAT. For example:

- Highly engaged students
- Students mastered a given topic
- Effective group-work strategy
- Increased interest in Chemistry

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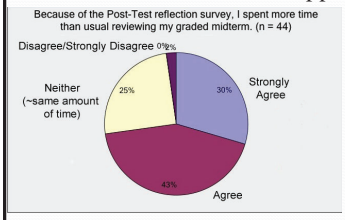
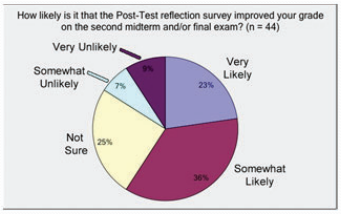
Metacognitive Exercise: Exam Wrapper

Survey given after 1st midterm exam

- Students reflect on how they prepared, mistakes made
- Students consider how they will prepare differently next time
- Extra credit offered for wrapper + exam corrections



Spent more time reviewing graded midterm?



Improved grade on second midterm?

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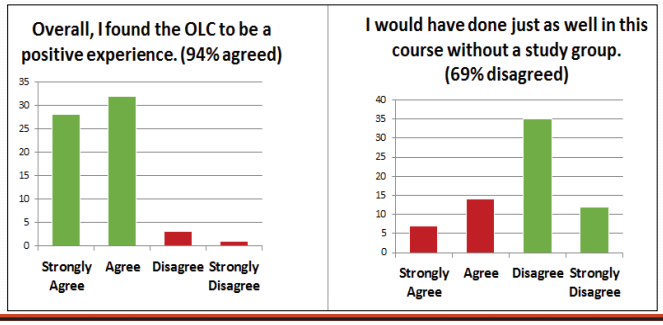
Student Study Groups:
Organic Learning Communities (OLC)

OLC extra credit required weekly meeting, Bb journal entry, end-of-term reflection on OLC experience.

How valuable was OLC study group?



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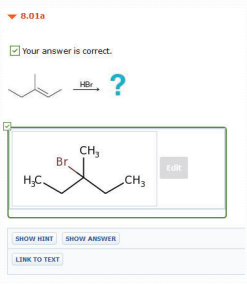
Tech-Assisted Student Learning

Online homework from publisher
(24/7 and immediate feedback, auto-grading)

- Skill-building, drill-type quizzes (can create in Blackboard)
- Adaptive learning
  - measures competency level for each SLO and customizes assignments
  - STEM: ideal for students with weak pre-requisite skills



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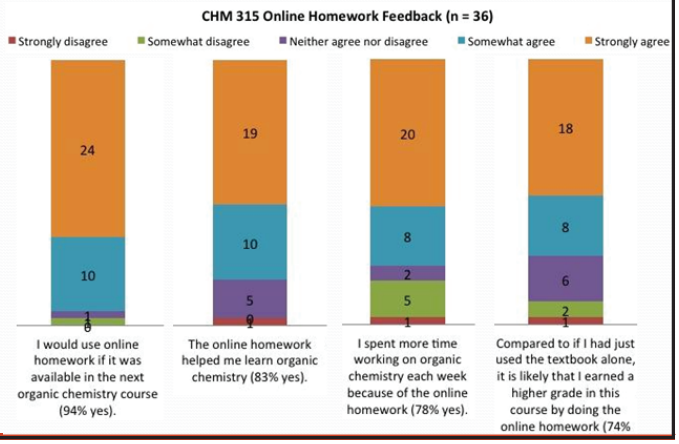
Online Homework = Favorable Feedback



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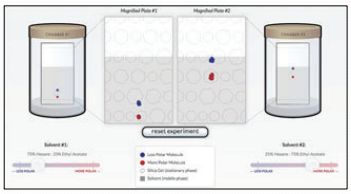
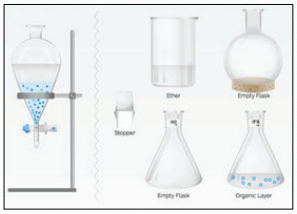
Technology for Lab Preparation

- **Online Quizzes** (Blackboard): 27/7, instant feedback, formative assessment
- **Animations** (with worksheet) TLC | Extraction





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Technology for Lab Preparation

http://www.cpp.edu/~lsstarkey/ochemlab

Online Tutorials
- Adobe Presenter (Pp plug-in)
- Flash/HTML5 animations
- filming of demos
- over 38,500 worldwide visitors to website since 2008

All Time		
United States	33,512	86.62%
Canada	675	1.74%
India	471	1.22%
Philippines	439	1.13%
United Kingdom	214	0.55%
China	136	0.35%
Thailand	131	0.34%
Iran, Islamic Republic of	130	0.34%
Malaysia	125	0.32%
Japan	121	0.31%

Benefits: unlimited time, asynchronous, reviewable, available in the future (website/YouTube vs. LMS)

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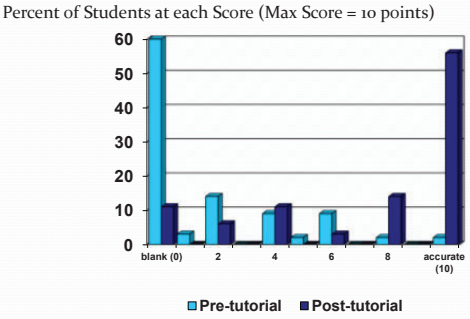
Assessment of Technology

Prelab Quiz: Sketch Distillation Apparatus



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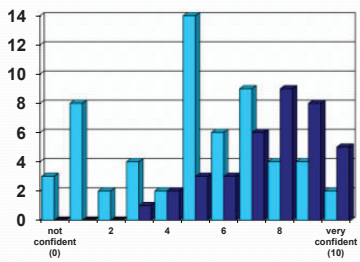
Assessment of Technology

Prelab Survey: Confidence in Running Distillation Experiment



Mean = 5.0 Mean = 7.6

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Tech-Enabled Classroom Engagement

iClicker (CRS)

- transition/wrap-up, formative assessment, exam review
- Library for Organic Chemistry Active Learning online repository: LOCAL

Kahoot getkahoot.com

- gameshow-style M/C questions using mobile devices
- good for syllabus quiz, exam review)

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Tech-Enabled Classroom Engagement

YouTube demos, simulations, animations
- free, no hazards, can pause/watch later, etc.
- find resources: PhET, MERLOT.org
- can support a flipped classroom model

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Making videos for the flipped classroom & beyond

- Online lectures – search YouTube, Educator.com, EdX
- Create your own! "Old school-style" recording of narrated homework solutions (iPhone) 3D sketch reagent table
- Latest technology: transparent lightboard! (how it works)
- Record and edit videos with Camtasia (screen capture/voice)
  Tutorials: http://tiny.cc/CreatingPedagogicalVideos
  Examples: Engineering tutorial and solved problem
- Lecture-capture w/iPad apps - can export videos to YouTube
  Explain Everything Cyclohexane and Doceri Reagent Table

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Sharing your work

- Private (LMS) or Public (webpage link, MERLOT)
  - Include captioning for accessibility (Hablas Español? Si!)
- Maximum exposure: make a YouTube channel!
- ChemistryConnected, created in 2012, has over 500,000 views and over 1,000 subscribers
  - Pre-lab tutorials, TLC & Extraction animations, solved problems, demos of elementary school science activities
  - Over half the views have come from outside the U.S. (200 different countries)

http://www.youtube.com/user/ChemistryConnected

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Making it Academic – SoTL Research

Turn your innovation into a research project!
- Formulate a question
- Collect data (can be a great "wow" factor)
  - Get IRB approval (Human Subjects)
  - Pre- vs. Post-Intervention
  - Quantitative and Qualitative data
- Perform assessment; analyze data
- Share results with colleagues and the world!
  - Conference paper, Ed. Journal article, RTP

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Getting Buy-In and Support from Students, Faculty, Institution

- Poorly implemented interventions unlikely to succeed
  - If you are enthusiastic, students are likely to be too
  - Explain WHY you do what you do – pedagogy matters!
- Share data and testimonials and data with colleagues – encourage a SoTL-supportive culture
- Institutional $upport: workshops, summer institutes, release time, mini-grants, free iPads (!), Faculty Learning Communities (clicker, SoTL, technology)
- Collaborate with research students, other institutions…

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Take-Home Message

Variety in Teaching = Engaged Students

- Audiovisual presentations blows away text
- Interactive lessons exercise different "muscles"
- Teaching to learning styles is a "neuromyth," but audio & captioning helps ALL learners
- Online tools offer asynchronous and mobile delivery, pause button, unlimited replay, etc.
- **Most students need more than textbook support!** Online homework and adaptive learning tools enable immediate feedback/ formative assessment

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