Interactive Learning Toolkit

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6 Jun 2003
Peer Instruction
- Improves student understanding
- Makes classroom learning more engaging

Using technology to help pedagogy
- Interactive learning toolkit
What is Peer Instruction?

Main features:
- Pre-class reading
- In class: depth, not coverage
- ConcepTests
What is Peer Instruction?

- Move the information transfer out of the classroom:
  - Assignments on reading material before class

- Strategy:
  - 2 questions on content
  - 1 feedback question
  - Graded on effort (semi-automatic)

- Use web-based reading assignment to help students think about what they read

- Find out what needs attention in class

- Get to know the students
What is Peer Instruction?

- Use classroom to deepen and broaden understanding
- by identifying key ideas
- and giving students opportunity to think

Strategy:
- Frequent suitable ConcepTest questions
- Rewards for participation
- Adjust lecture based on feedback from question
How can technology help?

- **Information collection**
  - Collect student responses in classroom and outside

- **Information distribution**
  - Deliver materials and information to students

- **Information presentation**
  - Discover connections between all the different pieces of information that go with a course
Create a calendar-based lecture schedule
Peer Instruction in ILT

- Pull in ConcepTest questions from a database
- Create new ones yourself and add to the database
Peer Instruction in ILT

1. A charged object is brought near an uncharged metal object. Negative charges accumulate on the side of the uncharged object nearest to the charged sphere, positive charges on the opposite side. On the uncharged metal object, the potential is

$V^?$

1. largest on the positive side
2. largest on the negative side
3. largest in the middle
4. the same everywhere

Answer

2. A cylindrical piece of insulating material is placed in an external electric field, as shown. The net electric flux passing through the surface of the cylinder is

- Student view of lecture automatically created
- And published to students when specified
Peer Instruction in ILT

- Upload PRS session files
- Automatically grade students for participation
- Grade questions for effectiveness
Peer Instruction in ILT

Benefits

- Automated grading (effort-based) of students
- Automated attendance recording
- Instant feedback to instructor
- Ever growing database of questions
- Systematic method of assessing quality of question
Create reading assignments schedule based on the lectures
Add questions to the assignment
Reading assignments in ILT

Students can answer the assignment when it is available to them.
Students’ work, face and names are all connected
Reading assignments in ILT

- Quickly respond to students’ queries
- Build responses from previous responses to other students
- Automatically generate FAQ on student site
Reading assignments in ILT

**Benefits**
- Better use of class time
- Connects names, faces and work
- Increases student faculty interaction
- Study resource for students
By connecting every element of the course together with the student, ILT makes it easier to get to “know” a large class.
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A simple grade book which keeps a record of student scores in different assignments.
Email

Received: Thu, 20 May 2003 12:48:58 -0400
Subject: re-grades

Hi Prof Mazur,

I hope your summer has started well. I didn't expect to be writing you after the email I sent last week, but I picked up my re-grades and met with Veronica yesterday afternoon, and I'm not satisfied with at least one of the re-grade responses I received. The grader suggested that I should "count myself lucky" to receive the few points that I did, but I know that others gave exactly the same answer I did and received full credit for their answer (in short, the last problem on the final exam did not explicitly ask for an explanation and so I did not give one; initially I was given no credit while my roommate and others who worked with me were given full points). Because this is just a matter of a few points on a problem set, I was prepared to ignore it, but talking with Veronica about the course's grading showed me just how much a few points can matter. I can't be sure whether this three point change would make a difference in my grade, but I thought I should at least check in with you.

Many thanks,

Liz

Elizabeth L Quinn

To: elizabeth.quinn@fas.harvard.edu

Cc: [edit]

Subject: Re: re-grades

Dear Elizabeth,

[Message does not require response]
Making it easier for the instructor

Calendar-based schedule means the application can advise instructor on the course elements that need attention
Ability to “clone” a course saves an enormous amount of time the second time the course is taught!
Summary

- Reduce time spent in non-instructional activities
- Implementation of tools for research-based pedagogies
- Features field tested in classrooms
- Modular implementation
- Students have easy access to study materials
- And have new avenues of interaction with instructor!
Acknowledgments

This work is funded by:

NSF Distinguished Teaching Scholar Award
DEAS Information Technology Group

For more information please visit:
http://mazur-www.harvard.edu
http://www.deas.harvard.edu/galileo