

**Dagstuhl Breakout Session:
Education as a vertical application area for ubiquitous computing.**

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There were two main themes:

1. how ubicomp tools could be used to contribute to the live lecture experience in particular, and secondarily, to the on-line experience.
2. how the capture capability of smart environments might help provide content to the educational experience.

Lecture Experience:

Powerpoint is not a particularly good teaching tool.

5yr Scenario:

We envisioned the following functionality (which closely parallels the eClass project from Georgia Tech see <http://www.cc.gatech.edu/fce/eclass/index.html>).

Projected White Board

Students can contribute/annotate both privately (on their own tablet) or publicly under control of the instructor

Synchronize pen strokes w/ audio channel.

Plug ins for all manner or special tools: diagramming, simulators, etc.

Students all have pen based tablets during lecture

Can we do it?

Yes.. basically demonstrated by Aboud et. al.

Things to be concerned about (technical issues):

Wireless contention due to synchronous demand for I/O

Usability by non-tech savvy lecturers

Security and Control of the classroom.

Note: I am currently using and improving a Java tool for electronic lecture. I would like to throw it into the public domain for improvement by other interested parties. All of the lectures for this class:

<http://www.cs.washington.edu/education/courses/cse466/CurrentQtr/PubSchedule.htm> will be published using this tool. I will send out a message when the open source server is set up.

Will we do it?

Yes if it can serve to reduce the overall cost of education...amortize it over a larger group. This requires that the same tools contribute to improving the remote learning experience as well.

Should we do it?

Risk of reduced student to student interaction (staring at their devices instead)

Risk of increased digital divide (have and have-nots)

The longer term view:

How can smart environments (smart biology labs, smart engineering labs, smart doctor's offices, etc) contribute real content to support education in the related fields.