

**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.