GroupSpaces for Laptop Collaboration
From research lab to informal learning spaces

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Abstract

1. A model for interdepartmental collaboration and knowledge transfer
2. A way to address evolving student and academic needs
3. A scalable solution for real-time, co-located collaboration needs for laptop users (7)

EDUCAUSE e-book: Learning Spaces
www.educause.edu/learningspaces
Outline

• Brief history
• What are we interested?
• GroupSpace components
• TeamSpot technology & features
• Locations & space designs
• Challenges, current status
• Discussion
Interactive Workspaces Project

- Stanford Computer Science dept, Prof. Terry Winograd
- Ubicomp Room
- Multiple devices, OSs
- iROS meta-OS, event heap
- iwork.stanford.edu
TeamSpace Project

- Wallenberg iSpace
- The TeamSpace client
- Meyer Library installation
- Physical space design
- iwork.stanford.edu/download.shtml
From pilot to production

- Initial user studies
  - Metaphor of public vs. private workspace
  - Real-world vs. experimental tasks & teams
- Stability, UI, support issues
- Commercial version: TeamSpot
- Residential pilots
- www.tidebreak.com
From TeamSpot to GroupSpace

- Business Development office...
- Broader concept than software
- Integrated look at learning spaces in libraries, Student Computing, residences
- Current focus on assessment and evaluation
Why are we interested?

- Evolution of technology-enhanced informal learning spaces
- Mobile and pervasive computing
- The NetGen learner
- Curricular changes, the new literacy
- Evolution of our learning models
- Filling institutional gaps
The NetGen learner

• Mobile, pervasive, 24/7 computing
• NetGen/Millennial traits
  – Tech fluent
  – Multitaskers
  – Content creators
  – Bias toward collaboration
• Student survey data
Curricular change

• New media in the curriculum
  – New requirements & literacies
  – Presentations

• Collaborative pedagogies
  – Project based learning
  – Problem based learning
  – Extreme programming
  – Peer editing

• Academic support
  – Tutoring
Evolution of learning models

- Learning takes place 24/7 (time)
- Most learning in informal contexts (space)
- Learning is active and social
- Opportunities for active, social learning lead to student success
- Seamlessness of formal & informal learning spaces leads to student success
Filling institutional gaps

• Disconnects between Digital Native learners and Digital Immigrant teachers?
• Disconnects between available learning environments and learning needs
# How we collaborate

<table>
<thead>
<tr>
<th>TIME</th>
<th>SPACE</th>
<th>Same place</th>
<th>Different place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same time</td>
<td>Same place, same time</td>
<td>Same place, same time</td>
<td>Different place, same time</td>
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<tr>
<td>Different time</td>
<td>Same place, different time</td>
<td>Different place, different time</td>
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GroupSpace Components

• Space and facility
• Furniture
• Whiteboard
  – Analog with capture
• Presentation equipment
• Large community display(s)
• TeamSpot Collaboration Software
TeamSpot Collaboration Software

- Most important component of GroupSpace
- Suite of software tools
- Features of note
  - Connect laptops to a group session
  - Take over a shared display
  - Transfer files between machines
- New paradigm for collaboration
Traditional Methods of Collaboration

• Combining various tools manually
  – IM
  – Email
  – Network space
So Why TeamSpot?

• TeamSpot is a single solution to many of these challenges
  – Version control
  – As little or as much as you need
  – GroupSpace == GroupTime
    • Speed and efficiency
New Paradigm

Greater than sum of parts
• Pointer redirection from your laptop to community screen
CrossWarp

• Transfer documents, URLs, and other files from your laptop to community display via drag and drop

• Also transfer between connected laptops
Other Features

• **CrossPaste**
  – Copy and paste text and images directly from your laptop to the shared document

• **Annotate**
  – Whiteboard-style interaction

• **Action Archive**
  – Session log
GroupSpace Locations
Meyer Library

- Main technology building
- GroupSpace located on 24-hour lobby
- Installed in Spring 2004
Meyer Library

• V-shaped tables
• 2 displays
Residences – Toyon Hall

- 200 sophomores
- Moose Room
- Installed Winter 2006

Toyon Moose Room
Residences - FroSoCo

- Freshman & Sophomore College
- 200 residents
- Originally in computer cluster

FroSoCo Computer Cluster
Technical and Administrative Problems

• Definition of “ease of use”
• Ease of use != Ease of administration
• Laptop required for use
• Stability and upgrades
• Cables, power, networking
• No keyboard & mouse
• Lack of on-site, FTE support in residences
Programmatic Problems

• Marketing
  – If we build it, will they come?
  – If they don’t come, what will we do?
• Threshold to use
• Training issues
• Establishing space identity
Internship Program

- Winter through Summer 2006
  - 3 paid interns
  - 10 hours/week each intern
- Learning, Design & Technology (LDT) program in School of Education
- Goals
  - Increase usage
  - Form relationships with courses & programs
  - Design and implement usage studies
  - Recommend programmatic and possibly technical changes
Ongoing Effort

- Marketing/user education
- Strengthen relationships with programs
- Continuing to refine and evolve
- Working with other schools: Emory, MIT, Univ. of Washington, etc.
- Refocus interns on assessment
Discussion

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