



Strategies for the Mobile Learning Environment: Harnessing Collaborative Learning within Nomadic Communities

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Planting the Seed: 2001-2004 and counting

WISH01 (01-02)	Wireless Instructional Strategies for Humanities
WISE02 (02-03)	Wireless Instructional Strategies for Engineering WISE-Bio: ... for Biology
WII03 (03-04)	Wireless Instructional Initiative for the College of Communication and Information
WII04 (04-05)	Wireless Instructional Initiative for the Institute of Agricultural Sciences
WII05 (05-06)	<i>tbd</i>

2001-2004 and counting

Distribution and Use of Wireless Technologies

	Classroom Use	Field-based Use
In-class Distribution	2001, 2002, 2003, 2004	2003, 2004
24x7 Distribution	2002, 2003, 2004	2003 2004 <i>(Enter the nomad)</i>

2001-2004 and counting

Types of Hardware Used

	2001	2002	2003	2004
laptop	✓	✓	✓	✓
digital camera			✓	✓
PDA			✓	✓
tablet				✓
GPS				✓
temp probe				✓
digital cam-pda				✓
GPS-pda				✓

2001-2004 and counting

Types of Software Used

	2001	2002	2003	2004
browser/email	✓	✓	✓	✓
productivity	✓	✓	✓	✓
course mgm't.	✓	✓	✓	✓
multimedia			✓	✓
custom (open source)			✓	
GIS				✓
content-specific			✓	✓

2001-2004 and counting

Types of Support Provided

	2001	2002	2003	2004
faculty summer institute	✓	✓	✓	✓
faculty meetings	2x-wk	2x-mo	3x-sem	3x-sem
class orientations	✓	✓	✓	✓
documentation	✓	✓	✓	✓
student tech	f/t	p/t	p/t	p/t
instructional design		✓	✓	✓
automation			✓	✓

More about support of the users and network

More about support of the users, hardware, software

More about the software and peripherals

More about the peripherals and new network venues

Methods of Assessment

- ◆ Pre-Institute Faculty Survey
 - Technology skills, current integration of technology w/instruction, experiences with CL
- ◆ Student Pre- and Post-course Survey
 - Technology skills, experience with team-based learning, user satisfaction
- ◆ Faculty Post-project Interviews and SWOT Reports
- ◆ Student Achievement Data
 - Tests, projects - individual and team-based

2001-2004 and counting

Changes in the Curriculum (and teaching methodologies)

	2001	2002	2003	2004
used existing courses	✓	✓	✓	✓
developed new courses		✓	✓	✓

The focus of these new courses is to provide collaboratively-driven, real-world, experiences.

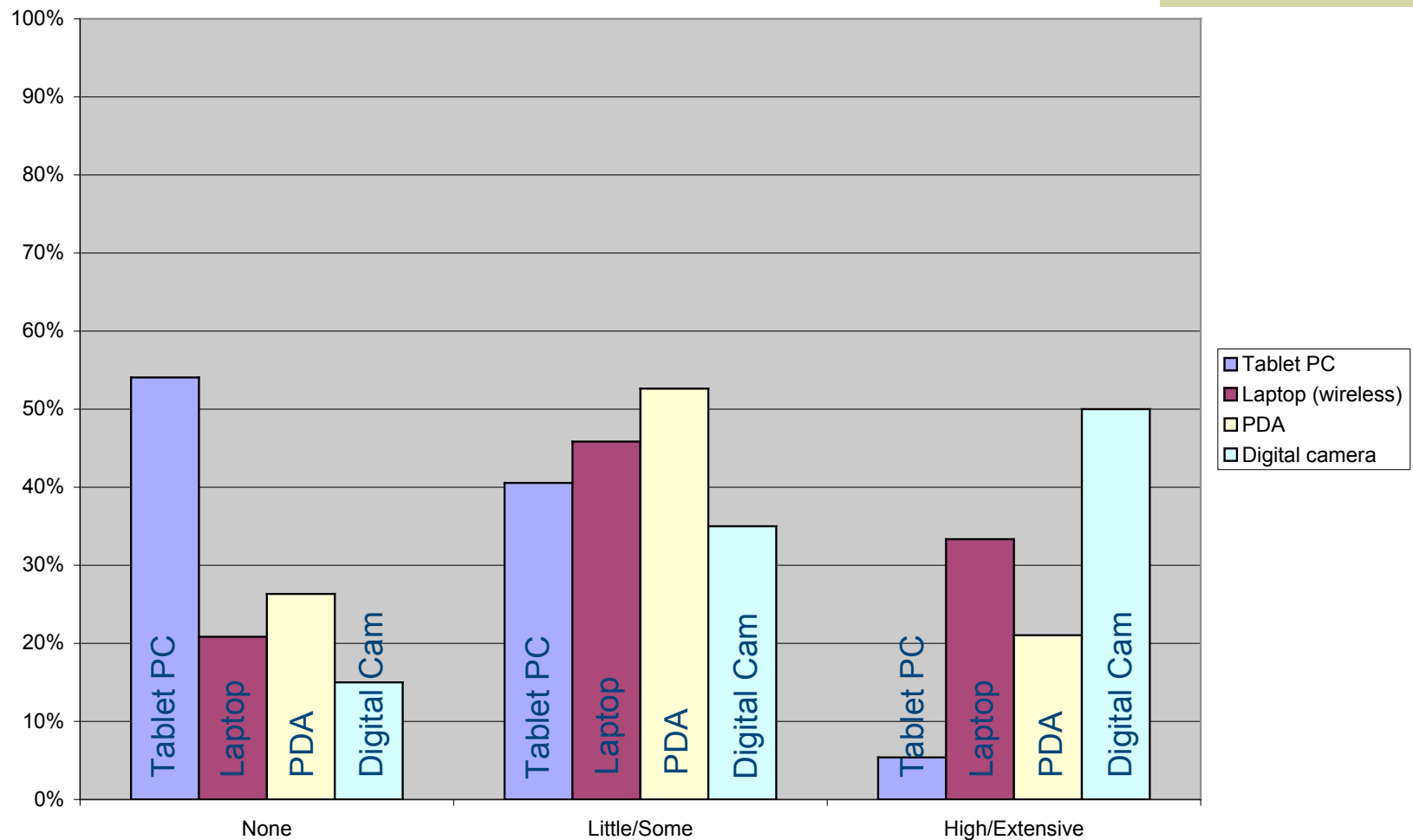
Types of Activities (WII04)

- ◆ **Plant Entomology**
 - Partnered PhD and MS students to research and prepare real grant proposals.
- ◆ **Plant Genetics**
 - Utilized webquests to solve scientific problems related to GMOs (genetically modified organisms). Working in teams of four, they collaborated on a 15-page paper and presented it.
- ◆ **Food Science Technology**
 - Used PDAs and temperature probes to gather on-site data (restaurants, groceries, etc.).
 - Used PDAs to track nutritional and wellness data.

Types of Activities (WII04) *con't.*

- ◆ **Plant Pathology**
 - Gathered images and data of diseased plants from the field, uploaded to central Ag Extension db for on-demand analysis and distance diagnosis. (Spr05: Use GPS coordinates to locate specimens.)
- ◆ **Biosystems Engineering and Environmental Sciences**
 - Using GPS to gather data in the field, return to the lab, input data using GIS s/w for analysis. (Spr05)
- ◆ **Forestry Wildlife and Fisheries**
 - Gathering weather and geographic data in the field to populate fire modeling software for analysis. (Spr05)
 - Using handheld GPS to gather coordinates and map state hiking trails and import into GIS to document topographically.

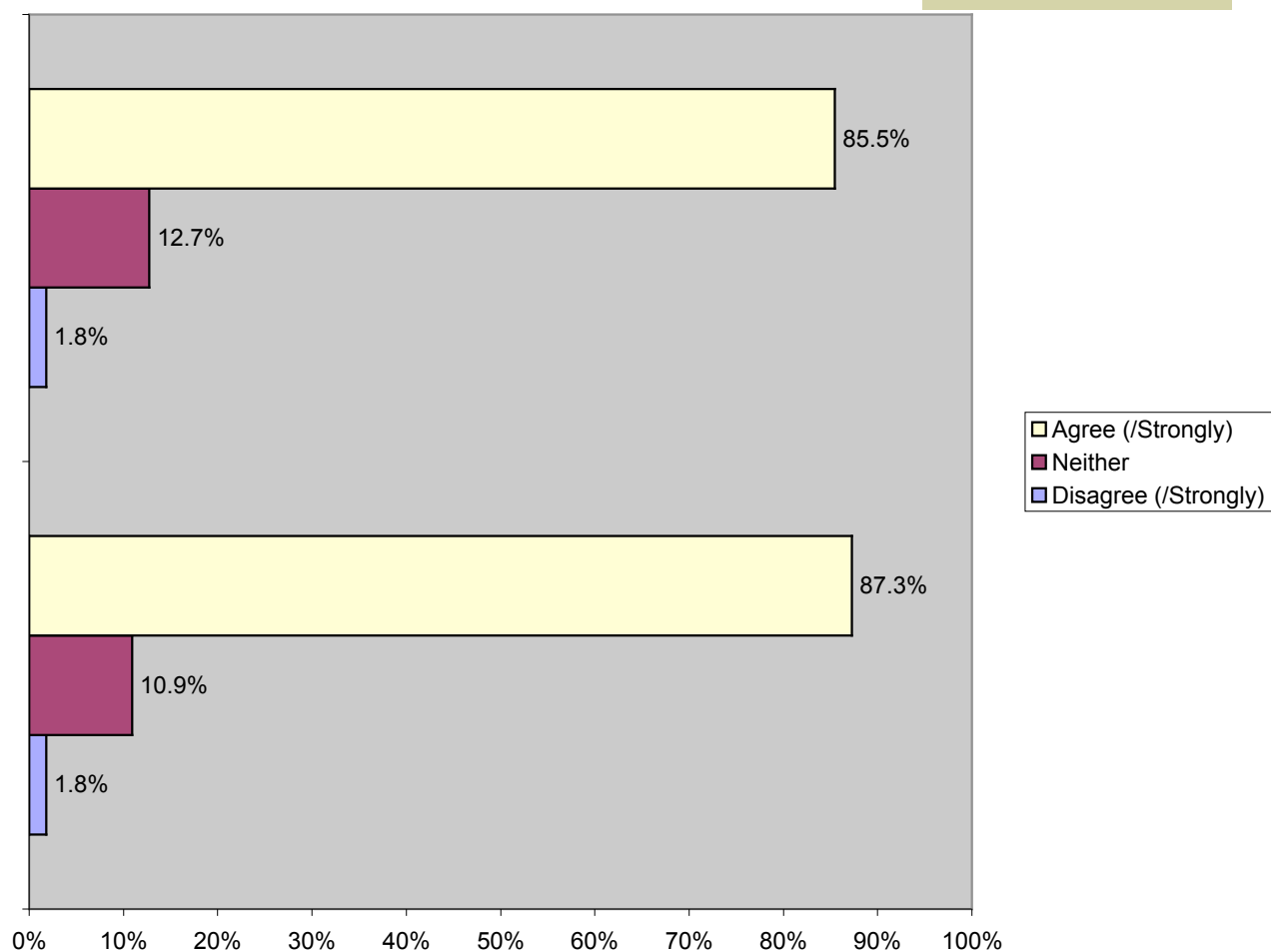
Student Data (WII04): Experience/Comfort Level with H/W



Student Data (WII04): Using the Equipment

Having access to the Wii equipment in this class has improved my educational experience.

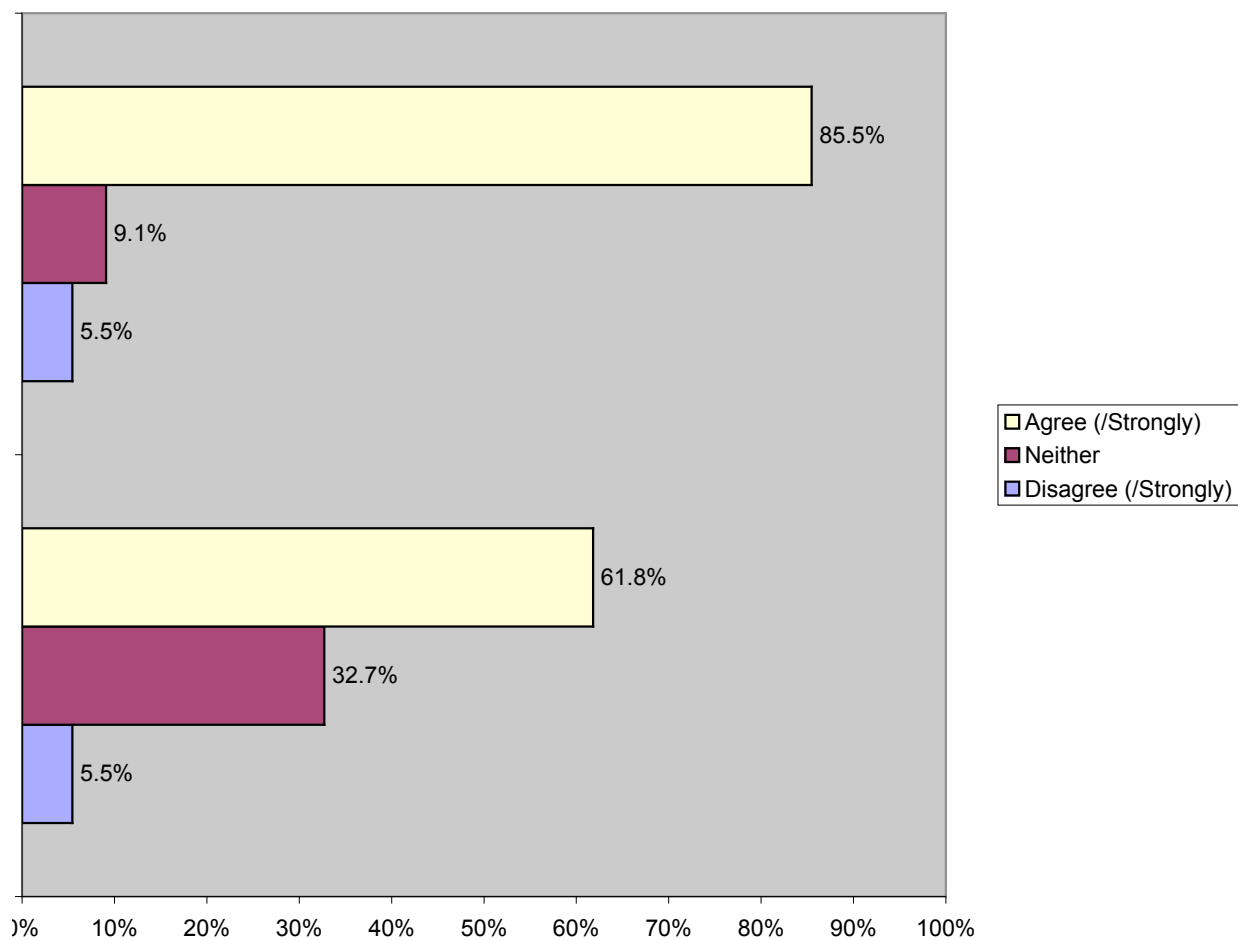
My comfort level using the Wii equipment has increased during this class.



Student Data (WII04): Working in Groups

Working in groups in this class has improved my educational experience.

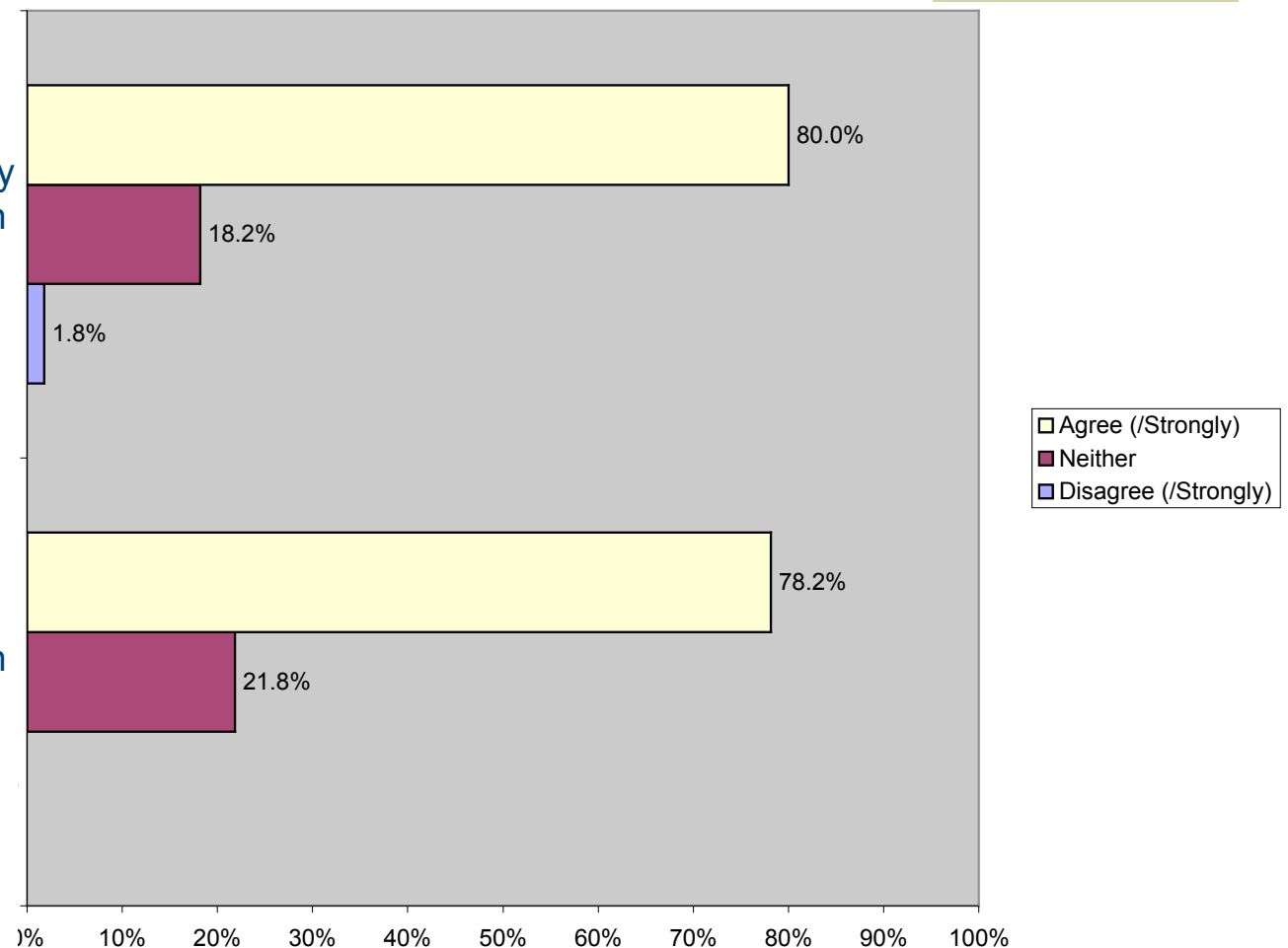
My comfort level working in groups has increased during this class.



Student Data (WII04): Assessment of Group Work

Everyone has been fairly graded on group work in this class.

I have been fairly graded on group work in this class.



Student Data/Comments (WII04)

- ◆ “Being able to use the pda for the diet and exercise program really helped in my understanding of foods and what they are made of.”
- ◆ “Access to email, online notes, research, and Blackboard was beneficial.”
- ◆ “Being able to transfer files quickly while working on different aspects of the same project was great.”

Student Data/Comments (WII04)

- ◆ “The ability to do work, computer work anytime, anywhere was the best part.”
- ◆ It was great to have access to the dendrology website in between classes.”
- ◆ “Having access to the equipment and the wireless network greatly enhanced my learning experience.”

Faculty Data/Comments (WII04)

- ◆ “The Ph.D. students also all said that they learned to trust the Masters students more, they learned that they were willing to give up some of the work and that they would get a quality product back.”

Faculty Data/Comments (WII04)

- ◆ “I think one of the advantages of having that group of students that had interacted with each other when it came time for the presentations, there was a lot more exchange from the audience and groups than I see sometimes, because they were used to conversing with each other, they weren't shy about asking questions and sometimes grilling their cohorts up in front of the room. Which I thought was good, because it made them bring out more of their point of view.”

Faculty Data/Comments (W1104)

- ◆ “They talked about the fact that they learned additional information about these pathogens which we didn't have time to cover in class. In fact, some of the pathogens we didn't cover in class at all; what they learned they did in putting together the web pages.”

Faculty Data/Comments (WII04)

- ◆ “There's no question in my mind that it improved their problem-solving skills and their teamwork skills, and you could see that as they went along.”

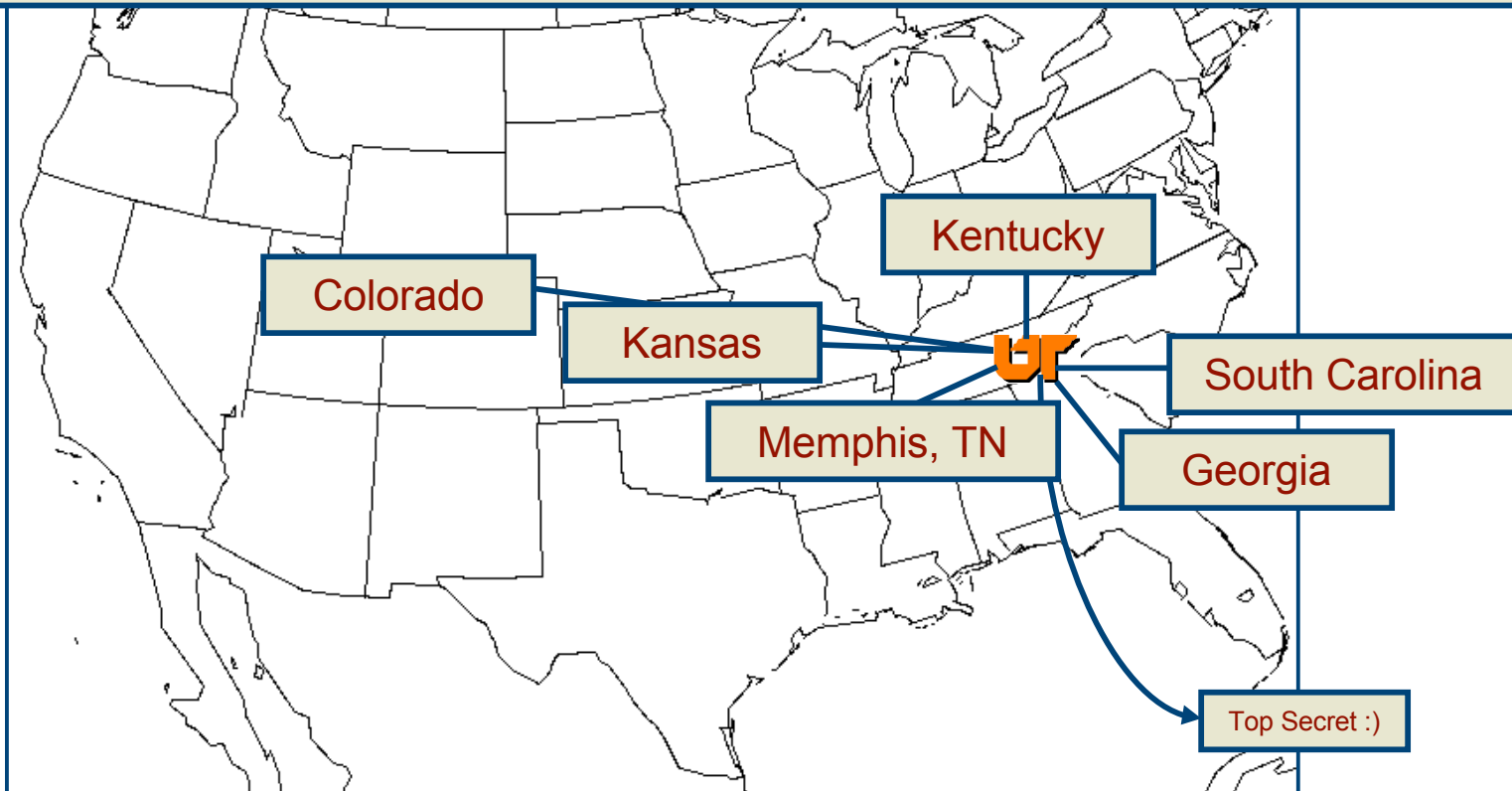


Observed Outcomes/Themes

- ◆ Application of course content to professional realms.
- ◆ Desire to increase the integration of technology into the curriculum experienced through the project.
- ◆ Students engaging to educate/help each other (language barriers and content experiences).
- ◆ Efficiency increased as the semester progressed (in technology use and group work) .
- ◆ Student leadership patterns emerged from group experiences where leaders and motivators were often separate roles.

So, where do we go from here?

Wherever the nomad takes their learning environment.





The University of Tennessee's
Innovative Technology Center

Wireless Instructional Initiatives Project

For More Information:

Visit us: <http://itc.utk.edu/grants/wii2004/default.shtml>

Email us: wii@itc.utk.edu

Call us: 865-974-9670