

Using a Web-based Classroom Interaction System to Enhance Student Learning

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Classroom Interaction Systems

(slide 1 of 2)

■ PRS (Personal Response System)

- Multiple-choice questions
- Instructor feedback
- No student feedback



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Classroom Interaction Systems

■ PDA (Personal Digital Assistant) (slide 2 of 2)

■ Various question types

- Multiple-choice
- Short answer
- Ranking tasks
- Likert scale

■ Question sequences

- Branched (answer-based)
- Randomized set

■ Two-way interaction

- Feedback to/from students

K-State
InClass
Web-based
delivery
system



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Research Questions

- Did course performance improve with PDAs relative to PRS?
- Did more frequent users of PDAs perform better than less frequent users?
- What were students' attitudes toward the impact of PDAs on their learning?

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Research Context & Participants

- Elementary Education Majors
 - Very few have experience with technology
- Classroom Interaction System
 - Fall 2003 (N=63) PRS
 - Fall 2005 (N=87) PDA
- Pedagogy
 - Peer Instruction during lecture
 - Learning Cycle in Activities Center

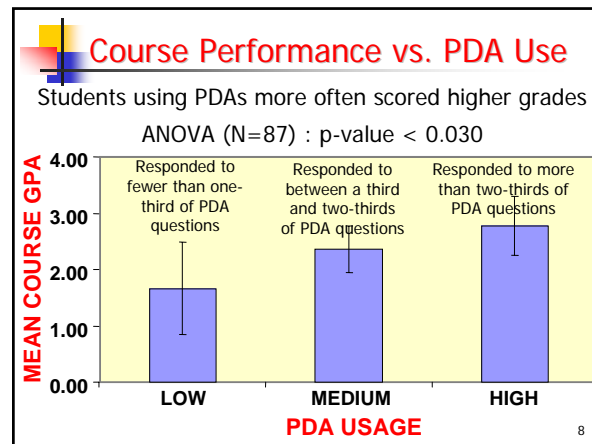
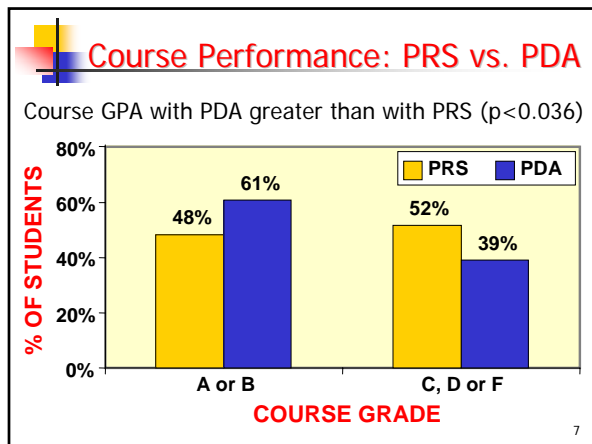


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Data Sources

- Course grades with PRS : Fall 2003 (N = 64)
- Course grades with PDA : Fall 2005 (N= 87)
- Data logs of PDA use: Fall 2005 (N=87)
- Student Survey: Fall 2005 (N=87)

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- ### Student Survey Ratings
- Percent who agreed or strongly agreed
- Responding to questions in class using the hand-held computers was useful to my learning (63%);
 - Interacting with other students while discussing the questions in class was useful to my learning (61%);
 - The hand-held computers help the instructor clarify what we do not understand (79%);
 - This experience with hand-held computers has made it more likely that I will use this type of technology in my own teaching (65%).

- ### Conclusions
- Did course performance improve with PDAs relative to PRS?
 - Yes. Statistically significant improvement in course grades with PDA vs. PRS for same course, similar students.
 - Did more frequent users of PDAs perform better than less frequent users?
 - Yes. More frequent users of PDAs secured higher course grades than less frequent users.
 - What were students' attitudes toward the impact of PDAs on their learning?
 - A majority of students strongly or very strongly agreed that PDAs positively impact their learning.

- ### Limitations & Future Work
- Correlation is not causality
 - PDA use correlation with higher performance does not imply PDAs causes higher performance.
 - Investigate how PDAs are used, not just how often they are used
 - Certain ways of using PDA may be more beneficial to student learning than others.

THANK YOU

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