

WeBWork Assessment

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What do we want to know?

- What students think of WeBWork
- How students interact with the system
- How changes to WeBWork influence interaction
- How instructors interact with the system

What students think of WeBWork: survey results

- Positive – the top of the list
 - Immediate feedback
 - Prefer WeBWork to paper & pencil homework
 - Structured system supports homework completion
- Negative – the top of the list
 - Syntax--difficult to type in long answers
 - No partial grade
 - No way to tell if answer is almost correct

UR math students, fall semester 2002, 2003, 2004, n = 2387

Roth, V., Ivanchenko, V., Record, N. (in press). Evaluating student response to WeBWork, a web-based homework delivery and grading system. *Computers and Education*.

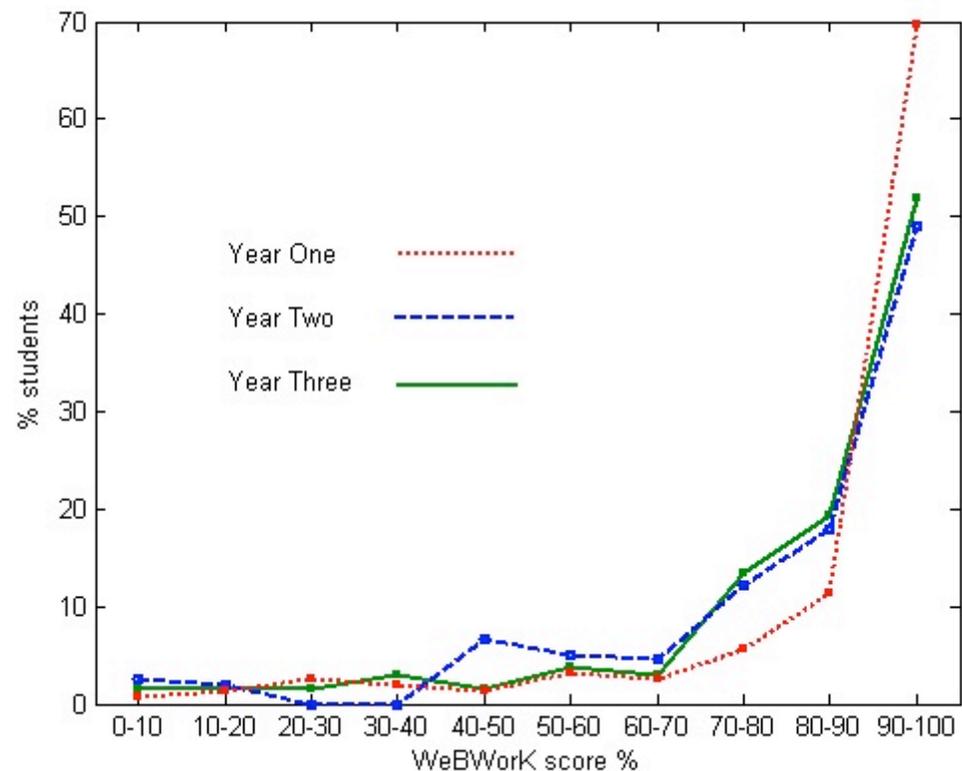
How students interact with the system

Students complete their problem sets

Score = # of successfully solved problems over the course of a semester. Each data point = % of students in the specific interval

N = 196, 158 and 135 students
Fall 2002, 2003, 2004

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How students interact with the system, continued

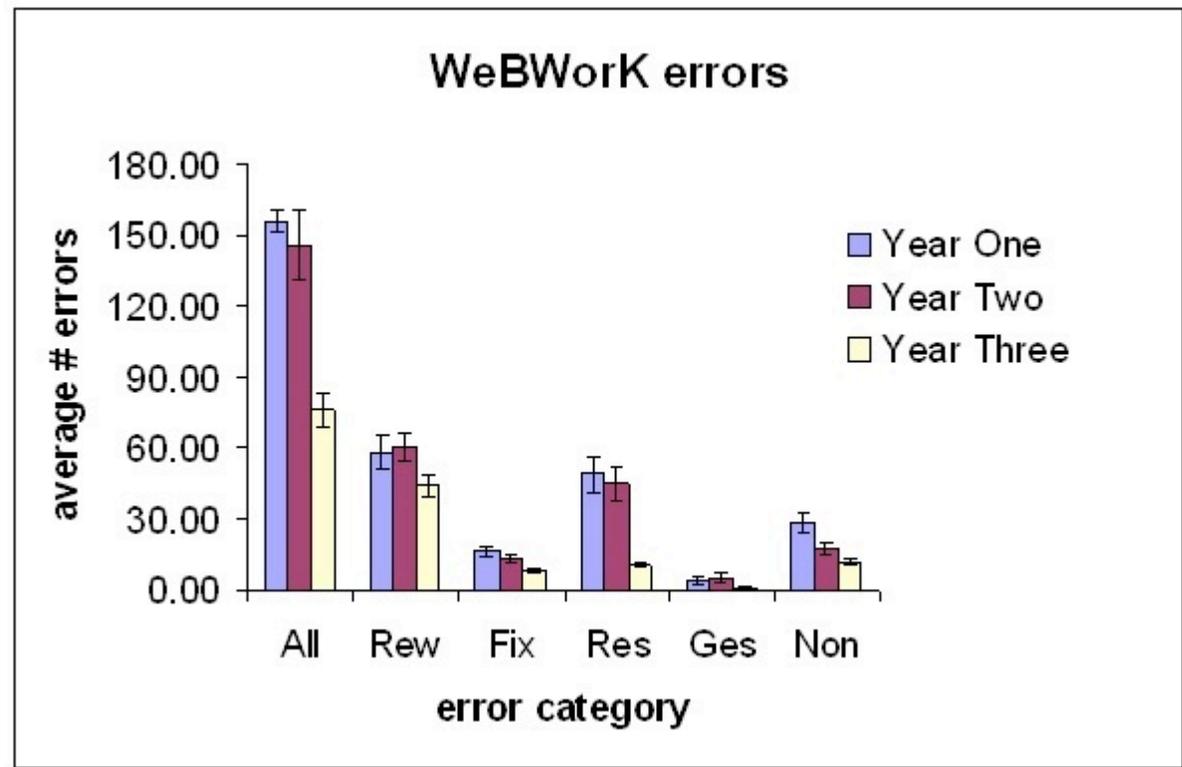
- Detailed analysis at the keystroke level for 96 Calculus 1 students (2002, 2003, 2004, A, B,C,D students in each cohort)
- Responses to error messages could be categorized
 - Reworking the problem
 - Fixing an entry error
 - Resubmitting the same or equivalent answer--a surprise
 - Guessing
 - Nonsense

How changes to WeBWork influence interaction

- Preview feature: before Fall 2003
- Resubmission alert: before Fall 2004

How changes to WeBWork influence interaction

Distribution of entry errors
Calculus 1,
2002, 2003, 2004.
Data are averaged
across 32 students
for each year and
across two raters.



Citation

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Evaluating student response to WeBWorK, a web-
based homework delivery and grading system.
Computers and Education.

How instructors interact with the system

Improvements wanted:

- Documentation (online, tutorials, community member communication, installation)
- Installation
- Problem library (organized by topic and linked to textbooks)
- Code for authoring problems
- Ranking system for problems
- Little or no IT support / Little programming knowledge
- More sophisticated problems (algorithmic steps, graphical representations, more interactive)

Contact us about WeBWork assessment

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