

SpeakEasy: A Structured Multimedia Discussion Tool for Learning

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Abstract

SpeakEasy is a World-Wide Web based structured collaboration and discussion environment. It has been successfully used to support students from middle school through university and is demonstrably more equitable than in-class discussion. In this poster/demonstration, we describe the interface and present some basic findings about the effectiveness of various interface elements.

Keywords—technologically-mediated communication, collaboration and conceptual change, design and interface issues.

Introduction

Effective learning environments both scaffold students and allow students to construct their own ideas. Computer supported collaborative learning environments must not only scaffold individual student learning, but also must scaffold group processes for effective collaboration.

Interface Overview

The SpeakEasy is a structured multimedia discussion tool. Contributions can be made either anonymously or by name, with each comment represented by an icon of the contributor's face. Each comment may be linked to related World-Wide Web pages. SpeakEasy is topic-based. Each topic for discussion contains two representations of the discourse: the Opinion Area and the Discussion Area.

The Opinion Area allows students to see who else is participating in the discussion and their overall views on the topic. Each student is allowed only one comment in the Opinion Area, which may be revised over time. In addition, a topic author may set up voting categories for a topic, in which each student must enter a numerical rating on the voting category as part of their opinion.

The Discussion Area allows threaded discussion of issues related to the topic. Each comment in the Discussion Area is categorized by the

contributor with a semantic label such as "and", "or", "but", "?", etc. A graphical overview of the discussion is provided for each subtopic.

Research results

The SpeakEasy has been extensively tested in a wide variety of settings, and has been found to be helpful to student learning. In particular

1. **Students learn the interface without extensive training.** In one study, students were able to use all features of an earlier version of the interface without training.
2. **Students participate more and more equitably in SpeakEasy than off-line discussion.** Hoadley et al. (1997) found participation rates of over 90% on-line compared to 15% out loud, with gender imbalances wiped out on-line.
3. **Student conceptions advance as a result of discussion.** In current work, Hoadley found significant improvement in students' science conceptions after peer discussion in SpeakEasy; no experts participated.

Conclusions

The SpeakEasy is a unique interface that can be used to support effective class discussion and collaborative learning. Elsewhere, we have discussed the theory of Socially Relevant Representations (Hoadley, Hsi, & Berman, 1995) to explain why this interface can support learning.

Acknowledgements

Tbanks to Marcia Linn, Alice Agogino, Doug Kirkpatrick, Alex Cuthbert, Benjamin Berman, Jeff Tran, and Adrian Agogino and the KIE research group.

This work was supported in part by the National Science Foundation under grants EEC-

9053807 and RED-9453861. Opinions expressed may not reflect those of NSF.

References

- Hoadley, C. M., Hsi, S., & Berman, B. P. (1995, April). *Networked multimedia for communication and collaboration*. Paper presented at Annual Meeting of the American Educational Research Association, San Francisco, CA. [Available at from ERIC]
- Hsi, S., & Hoadley, C. M. (1997). Productive discussion in science: gender equity through electronic discourse. *Journal of Science Education and Technology*, 10(1).
- Hsi, S. H. (1997). *Facilitating knowledge integration in science through electronic discussion: the Multimedia Forum Kiosk*. Unpublished Ph.D. dissertation, University of California at Berkeley.
- Hsi, S., Hoadley, C. M., & Linn, M. C. (1995). Lessons for the future of electronic collaboration from the Multimedia Forum Kiosk. *Speculations in Science and Technology*, 18(4), 265-277.

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