"Big Ideas Tool" as a new feature of Knowledge Forum

Bodong Chen, Maria Chuy, Monica Resendes & Marlene Scardamalia
Ontario Institute for Studies in Education, University of Toronto.

Introduction

Foundational to Knowledge Building pedagogy is the view that ideas ought to be at the centre of educational endeavours and continually improved through a social process, with members sharing responsibility for advancing not just individual but group knowledge. (Scardamalia, 2002; Scardamalia & Bereiter, 2003).This objective has informed the design of Knowledge Forum, software that supports the pedagogy and the process of knowledge creation. Current features in Knowledge Forum, such as theory-building *scaffolds* and *rise-above* notes and views have produced strong educational results. However, in order to support the advancement of community discourse to higher and more sophisticated levels, these functionalities require a number of design improvements in order to move beyond current frontiers.

Research Question

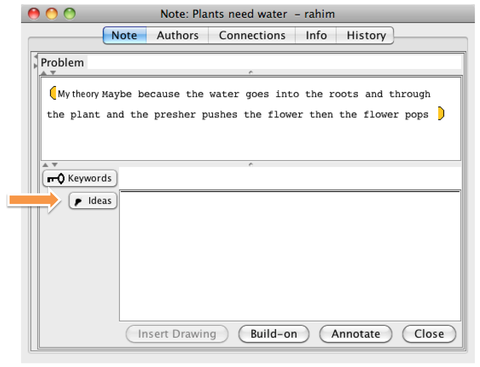
How can we help students move from the first-level processes of reading and posting ideas in Knowledge Forum to higher-level ones such as creating rise-above contributions? Is there a way to facilitate the process of identification and evaluation of big ideas within complex knowledge spaces? What design improvements can help students develop better and bigger ideas in their community space?

To initiate an effort to answer these questions, we designed and implemented a new tool, namely the "Big Ideas tool," in Knowledge Forum. Our first pilots were conducted in two grade 5/6 classes from a lab school. Feedbacks from students and teachers were collected and will be incorporated to the next round of refinement of this tool.

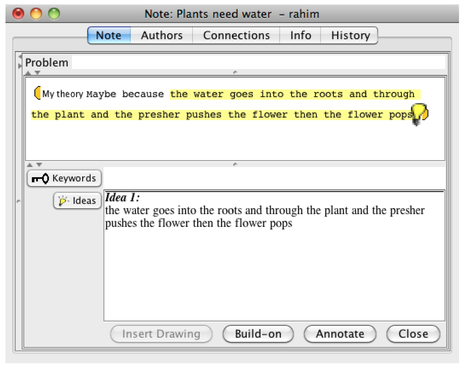
Implementation of the Big Ideas Tool

The Big Ideas tool aims to uncover a fundamental and vital competence for idea-centered work of students – their ability to identify big ideas in texts. By integrating various functionalities such as highlighting, tagging, and visualizing ideas, this tool enables students to identify and evaluate the community's best ideas, link promising ideas with external resources, and assess their "improvement progress." These three aspects are important first steps for advancing the frontiers of their knowledge.

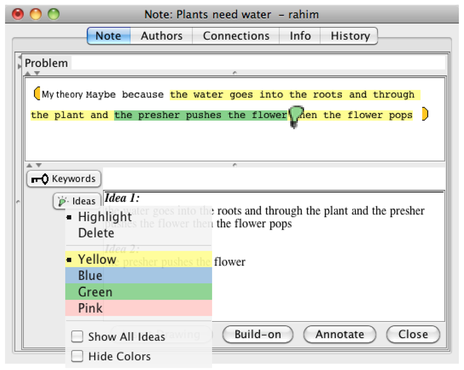
Current functionalities of the Big Ideas tool are illustrated in the following screenshots.



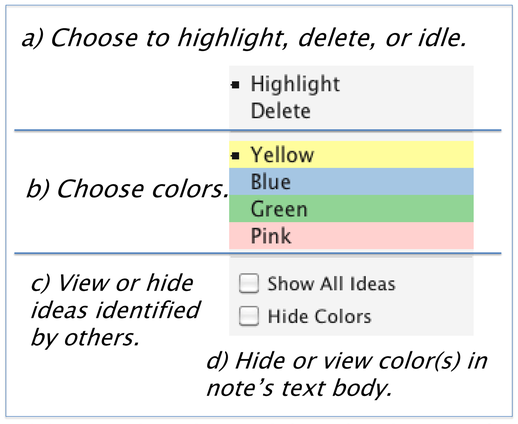
(1) Open a note – see the "Ideas" button



(2) Highlight an idea (with default color)



(3) Highlight ideas with different colors

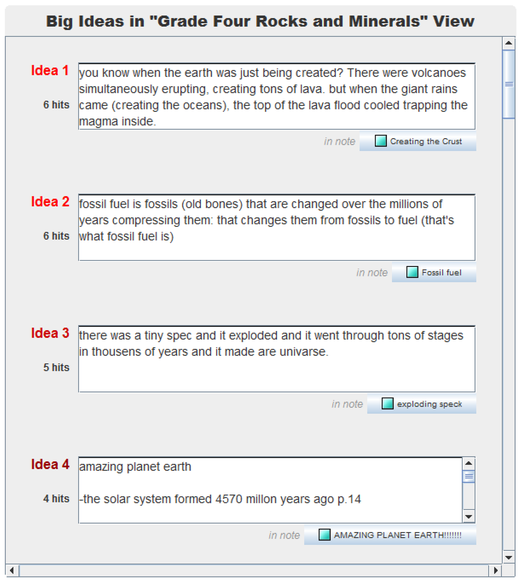


(4) More functions of the Big Ideas tool

Results

We performed two separate pilots in two grade 5/6 classrooms both with 22 students and one teacher. Both of the pilots last for 45 minutes and were composed of three sessions: 1) we firstly introduced this tool to students and teachers, 2) students read a grade 4 view and highlighted "big ideas" from it with Big Ideas tool, and 3) students and teachers discussed and commented on this tool.

During the two pilots, students highlighted 45 ideas from 207 notes.



5) Ideas highlighted in a view

Within the idea list, 21 ideas were highlighted at least twice, showing a certain level of consensus on where big ideas were even though students had only about 20 minutes to read and highlight ideas.

Feedback from students and teachers in the pilots are promising. First of all, students learned how to use this tool quickly. Students and teachers thought this tool would be very useful in "helping them easily find information without going through every note and see other people's interests as well." They also liked the colors and came up with an idea of using colours to code different kinds of information. In terms of further improvement on ideas, a few students expressed a wish to be able to directly build on ideas but not original notes to create rise-above contributions.

Conclusion

The present study introduces an initial effort to facilitate idea improvement in knowledge building communities. Future studies are clearly required to improve the tool and further test its effectiveness in practice. Next level efforts will be aimed at helping students create integrated accounts of big ideas and support next-level knowledge efforts. Toward this end, the next version of the "Big Ideas tool" is envisioned to support more functions for high-level work with ideas, including 1) tag or code ideas; 2) visualize ideas; 3) analyze social-network relationships for idea-centered activities; 4) analyze semantic relationships between the big ideas; 5) create public community knowledge and personal idea libraries; and 6) link ideas with authoritative sources.

Reference

Scardamalia, M. (2002). "Collective Cognitive Responsibility for the Advancement of Knowledge". In: B. Smith (ed.), *Liberal Education in a Knowledge Society*. Chicago: Open Court, pp. 67-98.

Scardamalia, M., & Bereiter, C. (2003). Knowledge Building. In *Encyclopedia of Education*. (2nd ed., pp. 1370-1373). New York: Macmillan Reference, USA.