

Integrating Knowledge-Building Discourse into Open Learning Initiative

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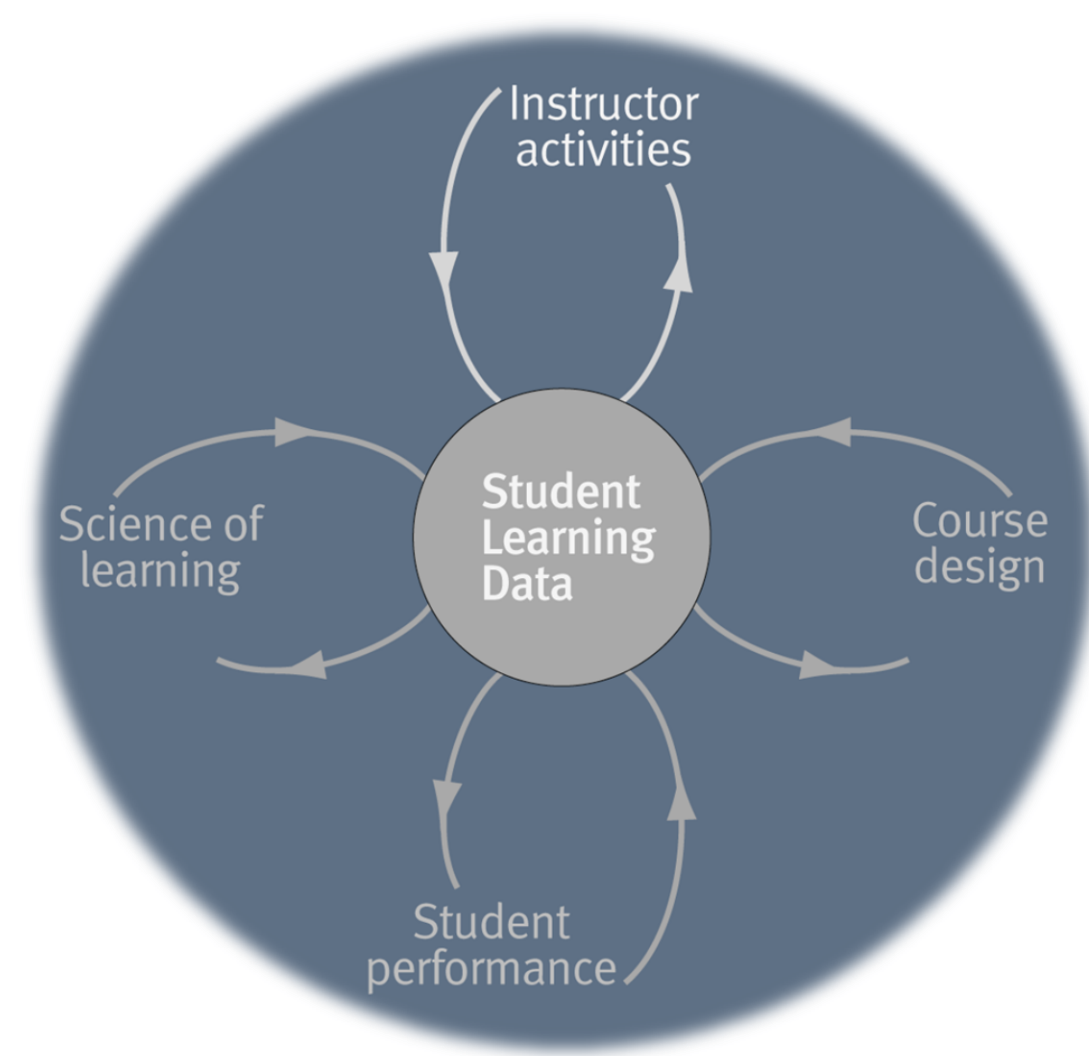
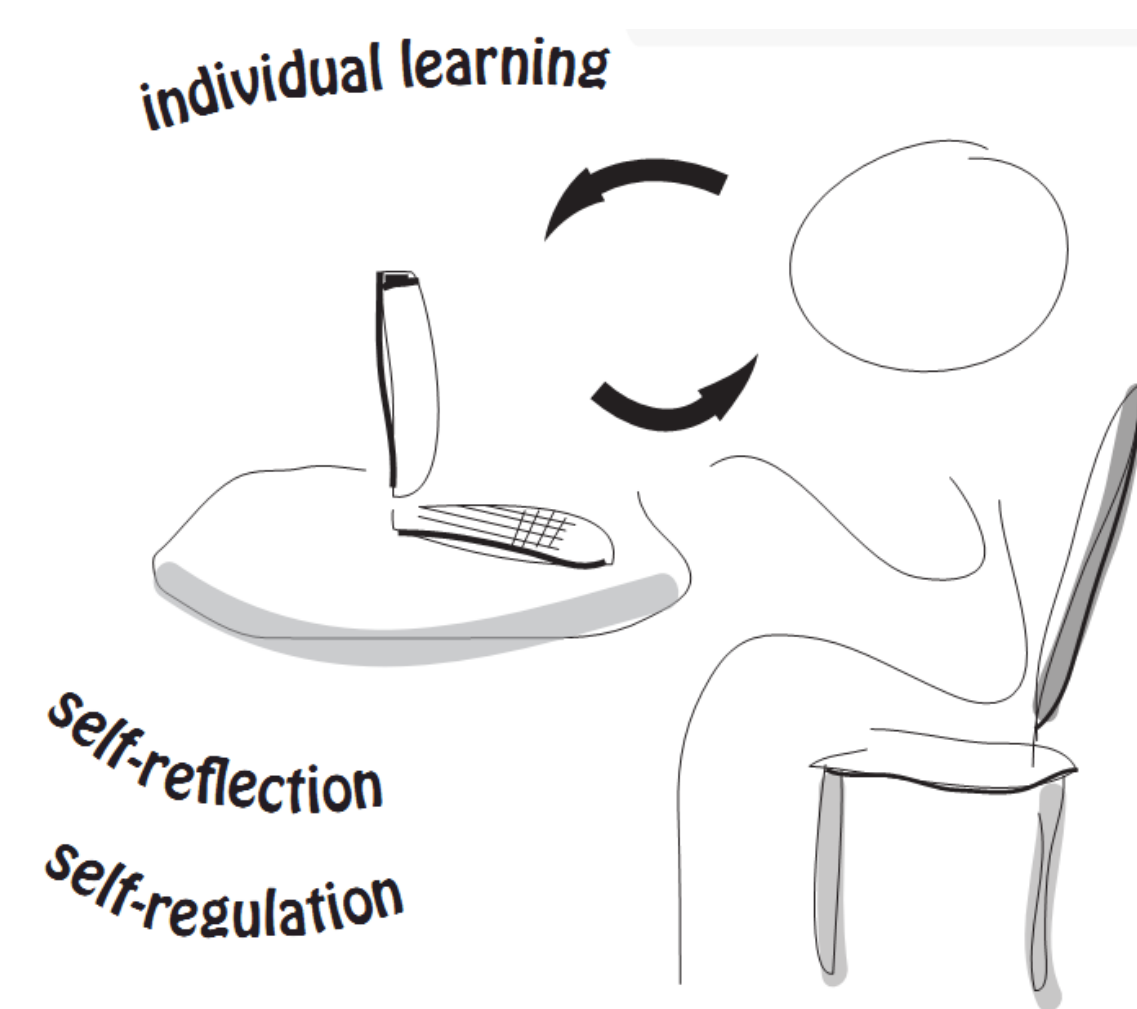


Open Learning Initiative

Open Learning Initiative (OLI) is a prestigious open educational resources project that aims to:

- produce exemplars of online courses and course materials that enact instruction
- provide open access to these courses and materials
- develop a community of use, research & development

Learners learn by interacting **individually** with quality course materials as well as embedded intelligent tutoring system, virtual laboratories and simulations.



Formative assessment and feedback are essential for learning and instruction with OLI. Assessment is embedded into every instructional activity so that students can assess their own learning and receive immediate context specific feedback.

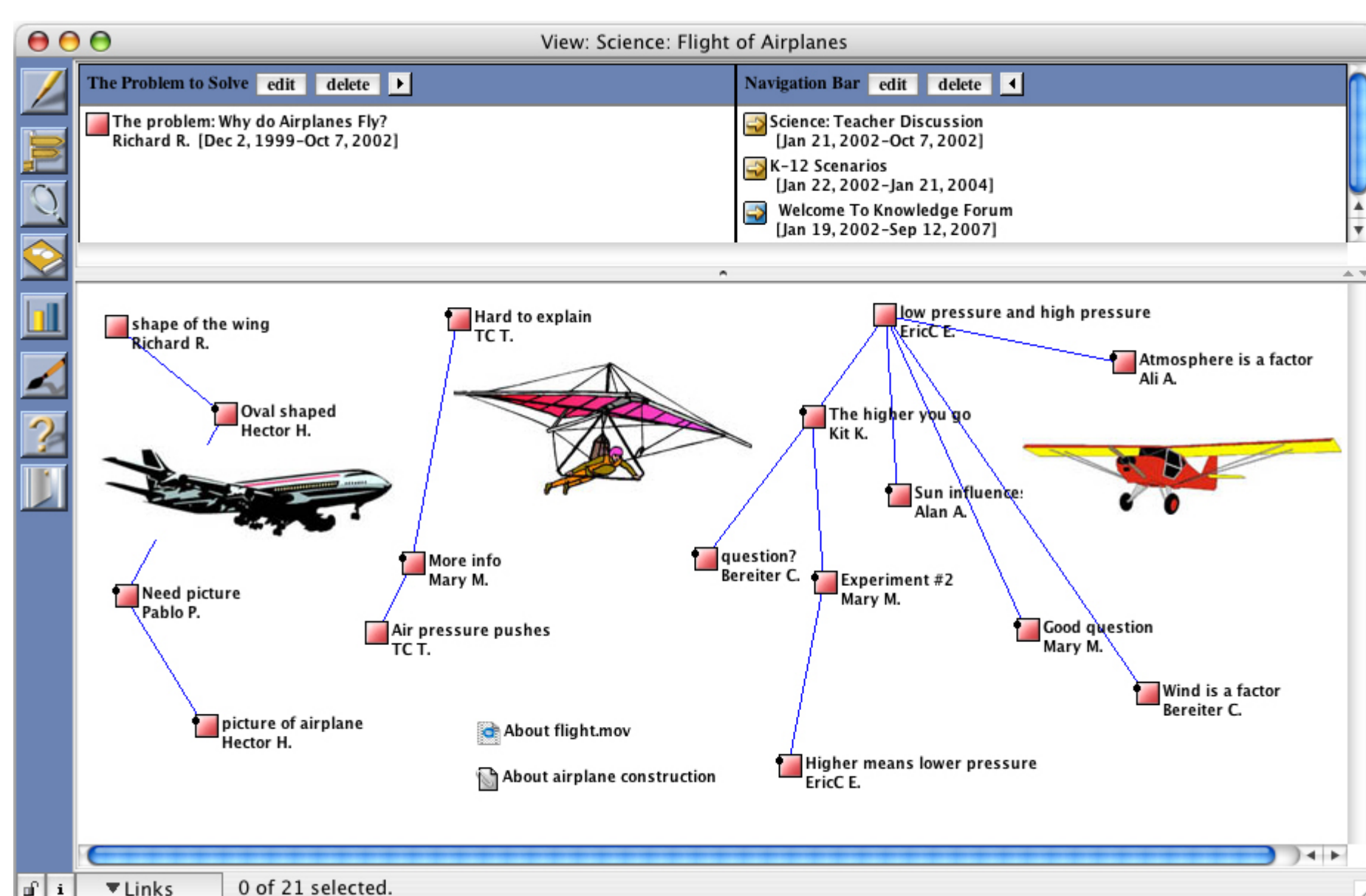
Knowledge Building

Knowledge building involves sustained idea improvement fostered by communities in which participants take collective cognitive responsibility for the advancement of *public knowledge* in their communities (Scardamalia, 2006).

- Knowledge building work focuses on *ideas* that “live out in the world” and are open to be modified and improved by anyone in the community.
- Knowledge building relies on *community discourse* to advance shared knowledge and understanding.

Knowledge Forum (KF) is a software environment that supports Knowledge Building pedagogy and the process of knowledge creation.

- KF has been used in classrooms around the world, from kindergarten to the postgraduate level. Current features in KF have produced strong educational results.
- Similar to OLI, *embedded, concurrent and transformative assessment* is also highly valued in KF and is used to inform knowledge-building discourse.



Questions

- How can we integrate Knowledge Building pedagogy and technology into OLI to address the socio-cognitive dimensions of learning, which is missing in the current OLI model?
- How can we assess the growth and spread of ideas generated by Knowledge Building discourse within the newly integrated OLI-KF environment?

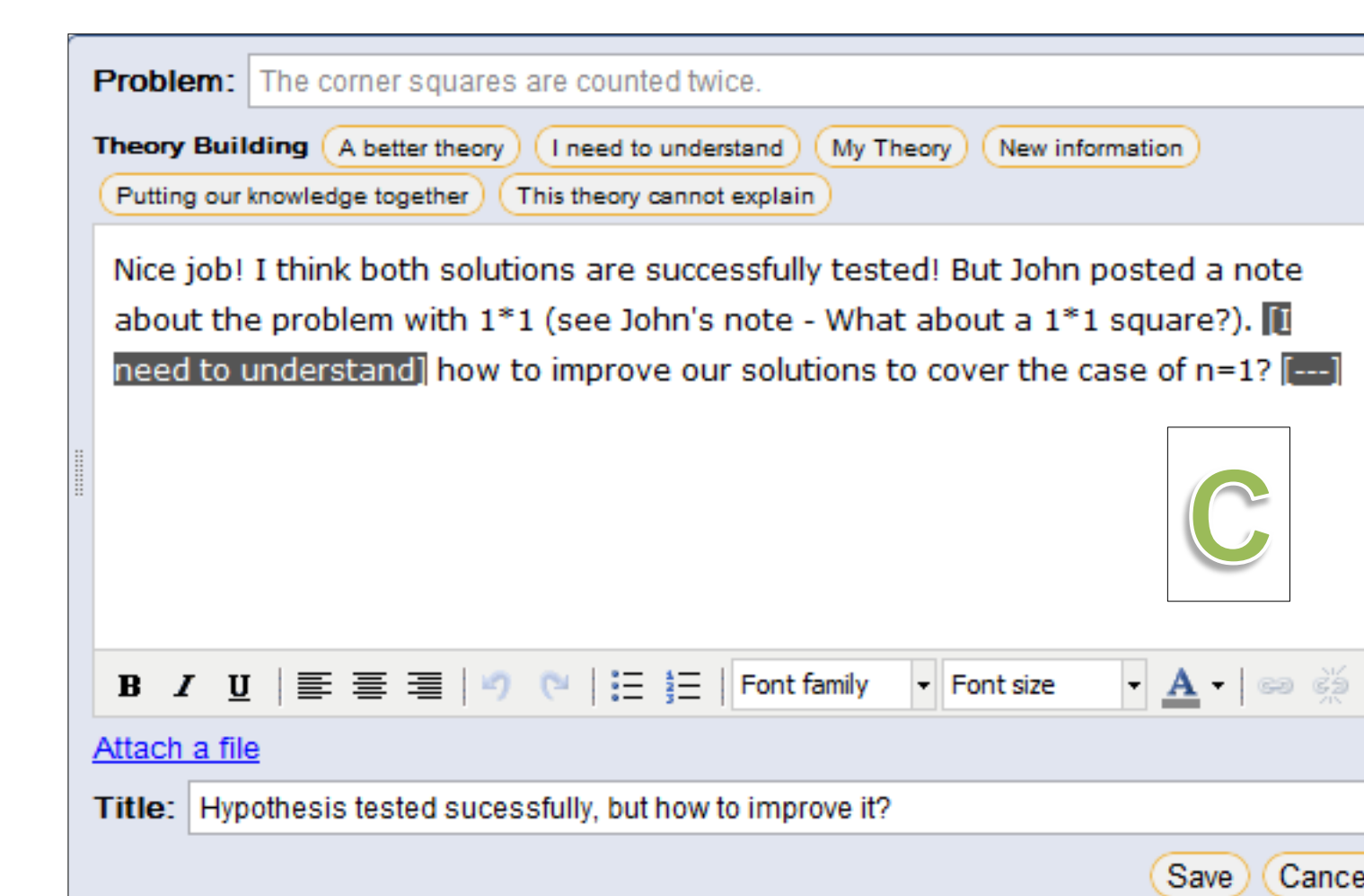
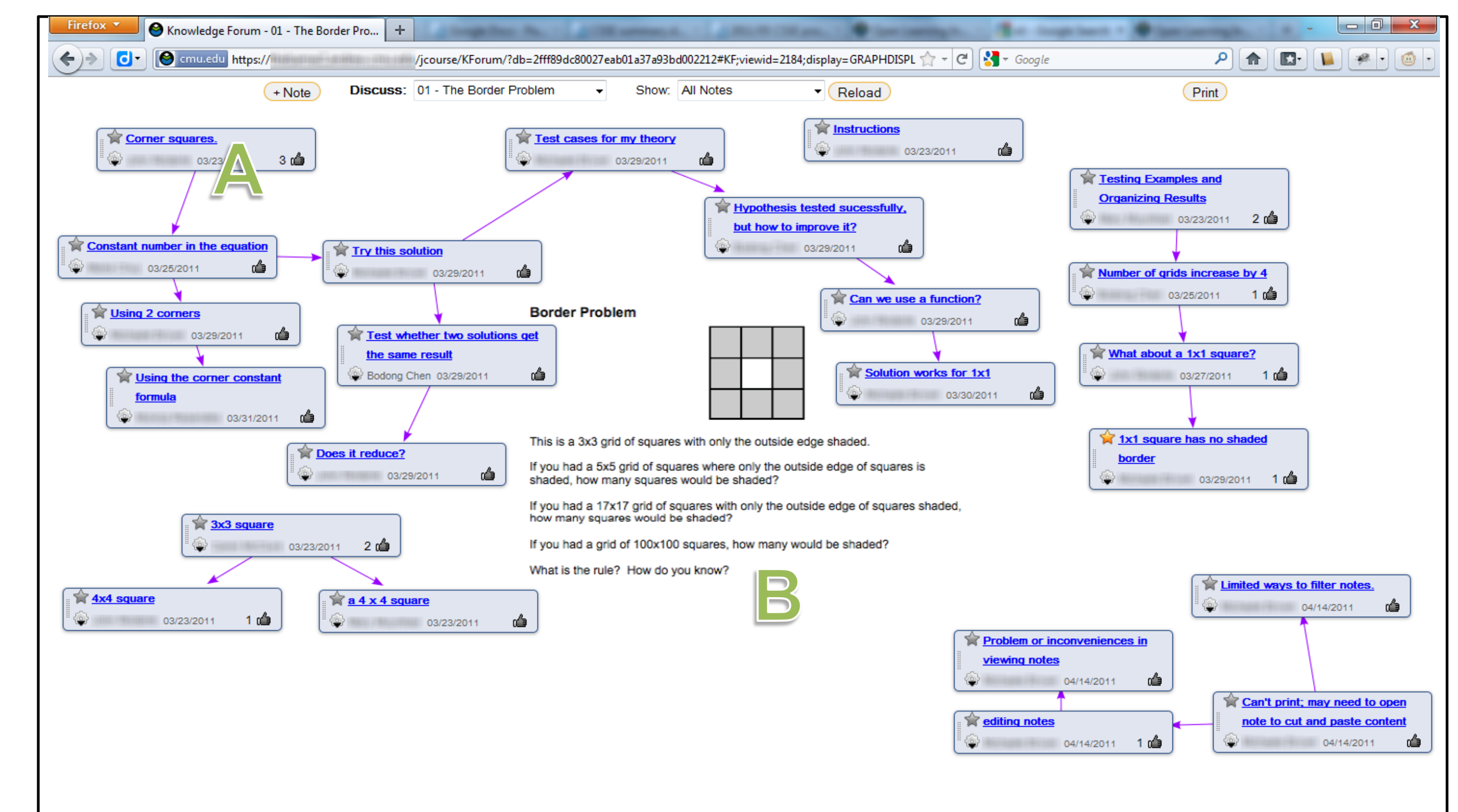
Newly Integrated OLI-KF Environment

Up to the present moment, our engineering team has implemented a new browser-based open source version of Knowledge Forum as a substitute for an older Java-based client.

For our first attempt at integration, we directly embed Knowledge Forum into OLI as a discourse component beside learning content. Students could use this collaborative space for discussion on course materials and group projects.



Similar to the Java-based version of Knowledge Forum, the new version also presents the discourse space in a visual way, in contrast to traditional threaded discussion environments. The interface features two basic components: views and notes.



A An unopened KF note

B A view with graphical background

C An open KF note
(in editing)

Next Steps: Pilot Studies

Pilot studies: Two design experiment studies (Barab & Squire, 2004) are currently being conducted, to test and improve the pedagogical and technological integration between two environments.

Participants and Educational Context: Participants are students and instructors from two community college classes in Pittsburgh and Santa Ana. The study is covering one month of their work in the *Introduction to Statistics* OLI course that includes the following educational components: (i) continuous individual learning of OLI content, (ii) concurrent discussion of statistics problems in KF-OLI with other members of the group, and (iii) classroom discussion of statistics questions posed during individual learning but not resolved throughout KF-OLI discourse.

Datasets: Two sets of data will be collected throughout the study. The first dataset comes from analytic tools in both OLI and Knowledge Forum and will be used to inform the design of teacher practices. The second set of data to be examined concerns the teacher's feedback that will be collected during interviews and virtual group meetings.

Expected Results: The results will provide an important contextual layer with regards to classroom practice and implementation, and will inform further improvements in the technical and pedagogical integration of the two environments.