

## **SNAPP: Graphing Student Interactions in a Learning Management System**

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One of the more vexing problems in teaching fully-online classes concerns the development of community. As Rovai (2001) identified, online courses must combat feelings of isolation and impart a sense of personal and individual attention. To create a sense of belonging and togetherness, instructors typically need to surmount numerous technological hurdles inherent in online delivery, not least of which is the inescapable conclusion that the one factor most basic to the formation of community-face to face interaction-is by definition absent in an online class. Many new tech-based teaching tools have been developed in an attempt to ameliorate the digital alienation and promote interaction, such as discussion boards, synchronous chat rooms, and emerging media like wikis, blogs and podcasts, as well as virtual worlds, such as [Second Life](#). As the frequency of interaction grows, so does the sense of belonging to a learning community (Dawson, 2008).

Yet as difficult as it is to craft a community among online learners, it is even harder to measure where and when the community is functioning (and perhaps more crucially, to know when it is not). Most Learning Management Systems (LMS) usually provide crude frequency data, so instructors will know how often students are visiting pages, and perhaps reading or posting information. However, what is lacking in this less-than-dynamic system is an overview of the type, amount and direction of activity, which students' may be engaging (Mazza & Dimitrova, 2007).

The tracking tools merely report the number of posts, but it is possible that students are replying only to the instructor's prompt and not to each other. Also, engagement alone does not necessitate or guarantee learning. Although the importance of engagement has been elevated, as many U.S. universities are using the [National Student Survey of Engagement](#) (NSSE) to gain a perception of student engagement, this is only part of the picture. The type, richness and interconnected engagement, within an authentic context, "in response to what students have learned" are critical (Bowen, 2005).

A new technology teaching tool from the [University of Wollongong](#), Australia, provides a graphical representation of student activity in the discussion board of an LMS. Called SNAPP (Social Networks Adapting Pedagogical Practice), it is added as a plug-in to the browser and when clicked while the LMS discussion board is on the page, it analyzes the posts and constructs a map of student interactions.

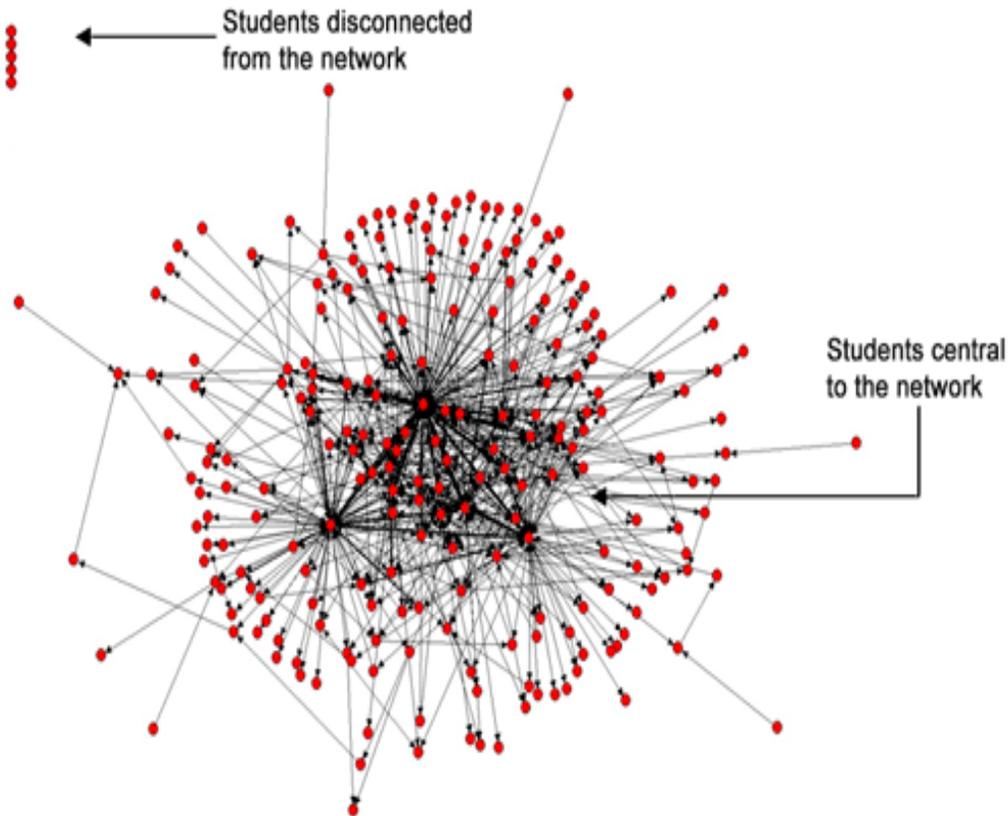


Image copyright University of Wollongong.  
Student names have been removed for publication.

The image provides a visual argument for the interconnectedness of highly active students, and the alienation of students who do not reply to others (or whose posts engender no replies from others). Disconnected students are easier to spot, offering perhaps an unprecedented opportunity to intervene early before trends become habits that might be damaging to their learning.

Each arrow of interaction also includes the frequency of interaction in this direction (for example, one student replied five times to various posts by another student, with the "return arrow" indicating that the second student only replied once to posts by the first student).

Comparing SNAPP diagrams across different forum topics may also be valuable in assessing how effectively discussions shift between models. For instance, if one topic was instructor-centric, and the next designed to be more balanced between student interactions, SNAPP diagrams will make the progress explicit. Similarly, how well students collaborate online in groups can be gauged.

The [SNAPP Web site](#) lists these benefits to the program:

- identify disconnected (at risk) students;
- identify key information brokers within your class;
- identify potentially high and low performing students so you can plan interventions before you even mark their work;
- indicate the extent to which a learning community is developing in your class;
  
- provide you with a “before and after” snapshot of what kinds of interactions happened before and after you intervened/changed your learning activity design (useful to see what effect your changes have had on student interactions and for demonstrating reflective teaching practice e.g. through a teaching portfolio); and
- allow your students to benchmark their performance without the need for marking.

SNAPP works on multiple LMS's, including [BlackBoard](#), WebCT Vista, WebCT CE, [Sakai](#), [Moodle](#), and [Desire2Learn](#). The software is free to download and requires Internet access to perform its functions.

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## LINKS

**SNAPP home page: Learning Networks / Seeing Networks. University of Wollongong, Australia.**<http://research.uow.edu.au/learningnetworks/seeing/about/index.html>.  
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