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STUDENT-PULL INSTEAD OF INSTRUCTOR-PUSH: IN PREPARATION FOR A STUDENT LEARNING DASHBOARD

FACULTY POSTER ABSTRACT

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A typical model of blending in-class learning with technology-enabled student experiences outside class makes use of a course management system (CMS)¹, such as Blackboard. In this model, all the course management work is exclusively performed by the course instructor. Some attempts have been made to steer away from having the online content and activities be created, maintained, and monitored solely by the instructor. Discussion boards, student breakout groups, and student portfolios are examples of shifting some responsibilities to the students. However, the instructor continues to be the main arbiter of these activities, and tools that support student contributions are entirely under the control of the same, monopolistic CMS.

Structuring student experiences outside class in this top-down, instructor-push fashion is increasingly contradicting a decentralized, learner-pull culture of today's social media and cloud computing [1]. The question of interest to this poster is how instructors could design a course learning environment that is *affordable* and *learner-directed*. Learner-directed means that students determine how they participate in activities and what featured artifacts represent their learning. Affordable means that the software tools and cloud services with which students personalize their learning are free and convenient.

In this poster I report on my experience with moving out of Blackboard a few years ago and opting for social media tools and cloud services [2], with which students and I have experimented to improve student engagement and social interactions around learning in the course. Learning outside a CMS is starting to gain momentum [3-6]. One of the best ITiCSE 2010 Working Group reports, *Tools for "Contributing Student Learning"* [7] has conducted a large-scale survey of the recent computing education literature to analyze tools that students use to create content, collaborate, share, and peer review. The study reaffirms that these activities have been shown to be beneficial to student mastery of the material and student reflective, critical, and creative skills.

The social media tools and cloud services that help me gauge student learning activities and artifacts are Piazza, Google Sites, Google Code, and MediaWiki.

¹ I am reluctant to use the alternate name of "learning management system", which commercial CMSs have adopted, as I do not know of any educational research that defines *learning management* and the functionality of such a system, if one exists.

- Piazza (piazza.com) is a free online gathering place where students come together to learn through the means of questioning, answering, commenting, and following-up on unresolved problems. The instructor guides the conversations by raising questions and vetting relevant questions or answers. Piazza software has effective analytics that I easily tie into assessing student engagement outside classroom.
- Google Sites (sites.google.com) is a free site creation tool with wiki revision history controls. Students use Google Sites to create online portfolios to assemble learning artifacts (solutions to assigned homework and projects, self-evaluations, status reports, reflections, revisions, and others). Only the student and I have access to a student portfolio. My use of the portfolio is to provide formative and summative assessment for the featured learning artifacts.
- MediaWiki (www.mediawiki.org) is a free wiki software that students use to document their team projects openly and collaboratively, both software development work products and project management activities.
- Google Code (code.google.com) is a free service for hosting open source student projects. Version control, issue tracking, and membership controls allow students to fully manage their projects with the help of the Google cloud.

The main advantage of replacing an instructor-controlled content management system with a suite of tools and services that are under student control is to extend learner centeredness to what happens online, outside classroom. I see these tools and services as precursors of a student learning “dashboard”. The term is borrowed from multiplayer online games, such as World of Warcraft, to denote the variety of controls with which students and instructor can gauge what and how much is learned.

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