Demonstrations

OSBLE+: A Next-Generation Learning Management and Analytics Environment for Computing Education

Daniel M. Olivares, *Washington State University*

Christopher D. Hundhausen, *Washington State University*

Contact: daniel.olivares@wsu.edu

In order best to support learning analytics in computing education, learning management systems (LMS) should be interfaced with computer programming environments, in which computing students spend much of their time. To this end, we have developed OSBLE+, an outgrowth of the OSBLE (Online Studio-Based Learning Environment) LMS we have been developing over the past eight years. OSBLE+ supports two innovations that make it particularly well-suited to supporting learning analytics in computing education. First, it connects to the Microsoft Visual Studio computer programming environment via a plugin that gives it access to all programming process data within Visual Studio, including edits, compilation attempts, compilation errors, debugging attempts, and run-time exceptions. This enables OSBLE+ to provide students and instructors with a visual analytics environment in which they can explore, compare, and contrast the programming activities of students in the class. Second, the plugin turns Visual Studio into a social programming environment by injecting into it a social media-style activity stream, which enables students (a) to pose and answer programming questions, and (b) to see and explore the programming activities of their peers. Students' social activities within the activity stream are sent to OSBLE+, and are subsequently included as data in the visual analytics environment. OSBLE+ is open source and freely hosted at <http://plus.osble.org>. While OSBLE+ presently interfaces only with Visual Studio, a plug-in for the Eclipse programming environment is under active development.

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