



M2B System: Learning Analytics Platform for Digital Learning in the University Education

Challenge and Solution

Contemporary learning is characterized as a self-regulated and self-directed collaborative process where students also learn from reflection and peer-assessment. As other educational movement, modern e-books that are enhanced with smart learning objects are open to multiple uses. In addition, learning processes leave many traces that can be used in learning analytics to support effective collaboration between peer students and orchestration or scaffolding by the teacher(s). Our challenge is to connect contemporary learning movement and learning analytics, using learning logs saved on learning support system, in order to improve learning and teaching environments.

Therefore, we deployed M2B system (Moodle, Mahara, and BookLooper: M2B), and provides development of teaching and learning support tools are based on the above system stack. These plug-ins can access every learning log in the database. These plugins support teaching and learning. For example, active learner dashboard visualizes learning behaviors, in order to promotes reflection and learner's learning awareness. Real time analysis tool visualizes the gap of the ebook page that learners read and teacher explains in the class, in order to control class procedure speed. We developed and provides other plugins on M2B for the teaching and learning support.

Learning Impact Outcomes

As of July 1st, 2016, Moodle is used in 713 courses, Mahara 89 courses, and BookLooper 41 courses respectively in Kyushu University. More than 10,000,000 records have been accumulated in BookLooper logs so far. The plugins that we provide promote reflective learning and teaching, self-regulation, and learning performance. Our research plan of learning analytics research based on M2B system was accepted as the Large Facility Large Scale Research Project Master Plan 2017 by Science Council of Japan, which is the representative organization of the Japanese scientist community.

Return on Investment

M2B system with plugins allows teachers and teaching assistants to know what points the students don't understand prior to the class without cost. The instructional design using M2B system raises students' learning awareness, then increase preparation and review time for class. M2B system shortens the time for instruction improvement. it reduces the number of students at risks, e.g., course failure, dropout from the University). The income from the students' tuition may decrease if there are many dropout students.