

# **Maximising the teaching and learning opportunities for higher education students at risk – a learning analytics case study in the sciences**

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The primary aim of the study was the deployment of information technologies that provide learning analytic data on students enrolled in large science first year subjects. These data contain valuable learning progression and experience information to academics, part-time teaching staff, and professional staff on students' engagement, motivation, and progression in real time so that suitable interventions can be made on students at risk of failing subjects. Learning analytics (LA) is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs. No new data has been captured to get learning analytics started at the University of Wollongong – existing information is being utilised from point-of-service information systems and Moodle subject sites. As students make use of the subject Moodle sites, information is automatically gathered about learning resource use, time on task, assessment item activities and student involvement in online forums. Each student leaves 'electronic breadcrumbs' within these systems as they go about their student journey and these are consolidated in the learning analytics data warehouse. LA then aims to draw data from these diverse systems to provide actionable intelligence visualisation for staff to make decisions on. The learning analytics have been deployed in four first year subjects, which have a combined cohort of some 700 students and contain some 50 activities, assessments and resources to monitor. The study concluded in November 2015 covering some 26 weeks of teaching and with 10 visualisation reports having been created and analysed. The key findings will be presented and discussed.