

CASE STUDY B: Analysing use of the VLE at the University of Maryland, Baltimore County

John Fritz, Assistant VP for Instructional Technology and New Media at the University of Maryland, Baltimore County (UMBC) points to the low level of American graduates and the high drop-out rates – and also that students need to take responsibility for their learning (Fritz, 2011). While VLE usage was growing across the University there was no evidence that this was linked to improvements in learning. Referring to work carried out at Purdue University and California State University, Chico, Fritz also wished to examine the correlations between VLE data and final grades. However he extended this to look at interventions and how best to use the predictions to support students. A further stage of the research involved examining the data to identify effective teaching practices with a view to enhancing future provision.

Key takeaway points

- » Students who obtain D or F grades at UMBC use the VLE around 40% less than those with C grades or higher; this finding remains constant, year after year
- » Students who used a tool to compare their VLE activity with that of other students were 1.92 times more likely to be awarded grade C or higher compared with students who did not use it
- » Analytics helped identify a particularly effective teaching strategy using a specific VLE tool
- » Innovations which led to improvements in student performance on one course appeared to lead them to perform better in subsequent courses too

Measuring VLE activity

Fritz (2011) compared final grades for a course with VLE activity – a crude measure of the number of hits made by a student. It was found that in a sample of 131 courses, students who obtained a D or F grade had been using the VLE on average 39% less than students with C grades or higher. This is a crude metric compared with the model developed by Whitmer, who cleaned the data considerably before presentation and prioritised the different types of activity e.g. forum usage. However Fritz reports in a later paper (Fritz, 2013) that this figure remains constant at around 40% from 2007 onwards.

A tool for students to compare their activity with others

A question arising from this finding was whether this discrepancy between usage patterns is constant during the entire course. If students obtaining a D or F had been told about how their VLE usage compares with that of better performing students would they have changed their behaviour? So a “Check My

Activity” tool was developed to enable students to compare their activity in the VLE on a specific course with a summary of activity undertaken by the other students. Meanwhile when grades are posted by faculty, the students can see how their activity compares with others obtaining the same, higher or lower grades. They can see to what extent other students have used individual VLE tools compared to themselves.

In 2008 and 2009 Fritz and his colleagues surveyed students on three courses about their use of the tool, and found similar results. They found that 28% of students on one of the courses were “surprised” by how their activity compared with the rest of the class.

Subsequent adoption of the tool when it was made available to students across the institution was initially slow. A publicity campaign increased its use dramatically however, as did placing it prominently in the gradebook of the VLE. During the 2009-10 academic year, there were 45,000 visits (from a university which has approximately 12,000 students) with students spending on average 1 minute 15 seconds per visit. Fritz expresses a concern that use of the tool may be “a case of the rich getting richer” i.e. those students who are already doing well will be quick to use any tool which helps them monitor their behaviour.

Research on the 2010-11 cohort of freshmen and transfer students showed that 92% of them used the VLE, and of these 91.5% used Check my Activity. Those who used the tool were 1.92 times more likely to be awarded grade C or higher compared with students who did not use it.

Fritz points out that at that time there was very little literature available on how best to intervene with students as a result of the analytics – with the exception of literature on the Purdue Signals programme. He is particularly concerned about privacy issues in analysing the use of the tool, and advocates adding two checkboxes on the tool:

1. It's ok to track my usage of this site.
2. It's ok to follow up with me for an informational interview.

Future enhancements planned for the tool included view of the frequency and duration of VLE tool usage compared with others, alerts sent to individuals when their activity drops below the level associated with students who obtain the grade that students wants to achieve. It also allows students to share the information with staff, and to give them permission to intervene when their activity drops below a certain level.

Fritz believes that the feedback given to the students through the tool may be saying to students “what they would not (or could not) initially hear or accept from a professor or academic advisor through a personal intervention”. Additionally the Check My Activity tool may be able to build on students’ “obsessive status-checking tendencies” to provide them with feedback which would be expensive to do via a human.

Using analytics to identify effective teaching strategies

Subsequently, Fritz and his colleagues examined the VLE log files in order to explore at a more fine-grained level, the relationship of final grades to specific types of VLE activity. Analysis of the most active Blackboard courses identified one course, Econ 122, where one instructor had achieved particularly high levels of participation from his students. He used the “adaptive release” feature where students could not access the assignments until taking quizzes about the course content. It was found that students on the sections of this course which utilised adaptive release gained final exam scores typically 20% higher than in other sections. It was also found that students taking the course where this feature was used were performing better in the subsequent course, Econ 301, than those who were not. The analytics led to an important conclusion: enhancements to a prerequisite course through effective implementation of a VLE tool may lead to students performing better in subsequent courses as well as the course itself.

Other courses using the adaptive release feature also reported improvements in results. Fritz draws the conclusion that which VLE activity consistently correlates with attainment, particular types of VLE activity may encourage better engagement, which itself results in better grades.

References

- Fritz, John. (2011) Classroom Walls that Talk: Using Online Course Activity Data of Successful Students to Raise Self-Awareness of Underperforming Peers. *Internet and Higher Education*, 14(2), 89-97
- Fritz, John. (2013, April) *Using Analytics at UMBC: Encouraging Student Responsibility and Identifying Effective Course Designs* (Research Bulletin). Louisville, CO: EDUCAUSE Center for Applied Research <http://www.educause.edu/ecar>