MICHIGAN STATE UNIVERSITY

Leveraging Course Level Data to Support Teaching and Learning

Introduction

The recent focus on "big data" and analytics in higher education has largely been applied to enterprise level student success initiatives. These initiatives have the potential to positively affect student retention rates, graduation rates, and to help students plan their time at the university in ways that are efficient and effective. However, most of these initiatives seem to ignore the fact that teachers are surrounded by data every day and often have little idea about how to access these data or how to make use of them once they do have access.

Course Level Data Can...

Allow instructors to revise or "pivot" with instructional models or techniques

Help instructors be prepared to work with larger data sets emerging institutionally

Deepen and guide curricular discussions within their units, programs, school/college and institutional levels.

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Course Example: Engagement and Final Course Grades

This example shows 3 years of student (n=~125) course engagement mapped onto final course grades in an undergraduate elective course. Engagement is measured as how active a student is in the course using their visits to the course homepage as data.
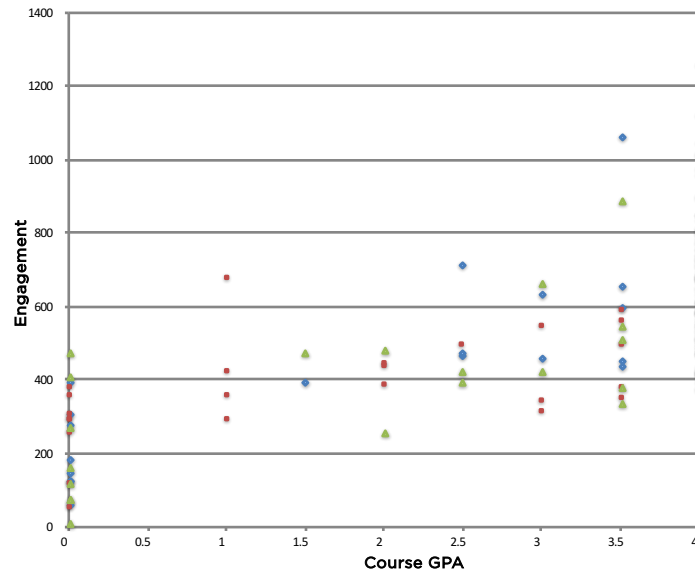
Methods & Results

For this work we tracked engagement by measuring the number of times a student passed through the homepage for the course. The course was designed such that students would pass through the homepage on their way to and from units in the course, generating a record of contacts with the homepage that provided an accurate count of how many times they were in the course and interacting with content. Results from this course indicate that being active in the course results in the likelihood of receiving a higher course grade.

Thoughts from Faculty

"Assessment data from quizzes determine what new materials I need to develop to explain concepts when the majority of students are not able to answer the questions correctly."
- Prof. A

"<course level> analytics are the easiest, cheapest, and most digestible user research I can use to improve my course, instructional material, and ability to teach"
- Prof. D.

I use data to see what parts of the content prepared for each unit seem to be utilized/accessed by students
- Prof M.

"I would use course level data at the end of the course when reviewing evaluation data or other metrics to determine what seems to have worked, which hard-to-produce components were ignored (and thus should be modified or deleted), etc."
- Prof. F.

Future Directions

How do we replicate this data collection in a different LMS?

Does the pattern hold across courses, years, contexts?

What other data produces equally usable patterns/trends