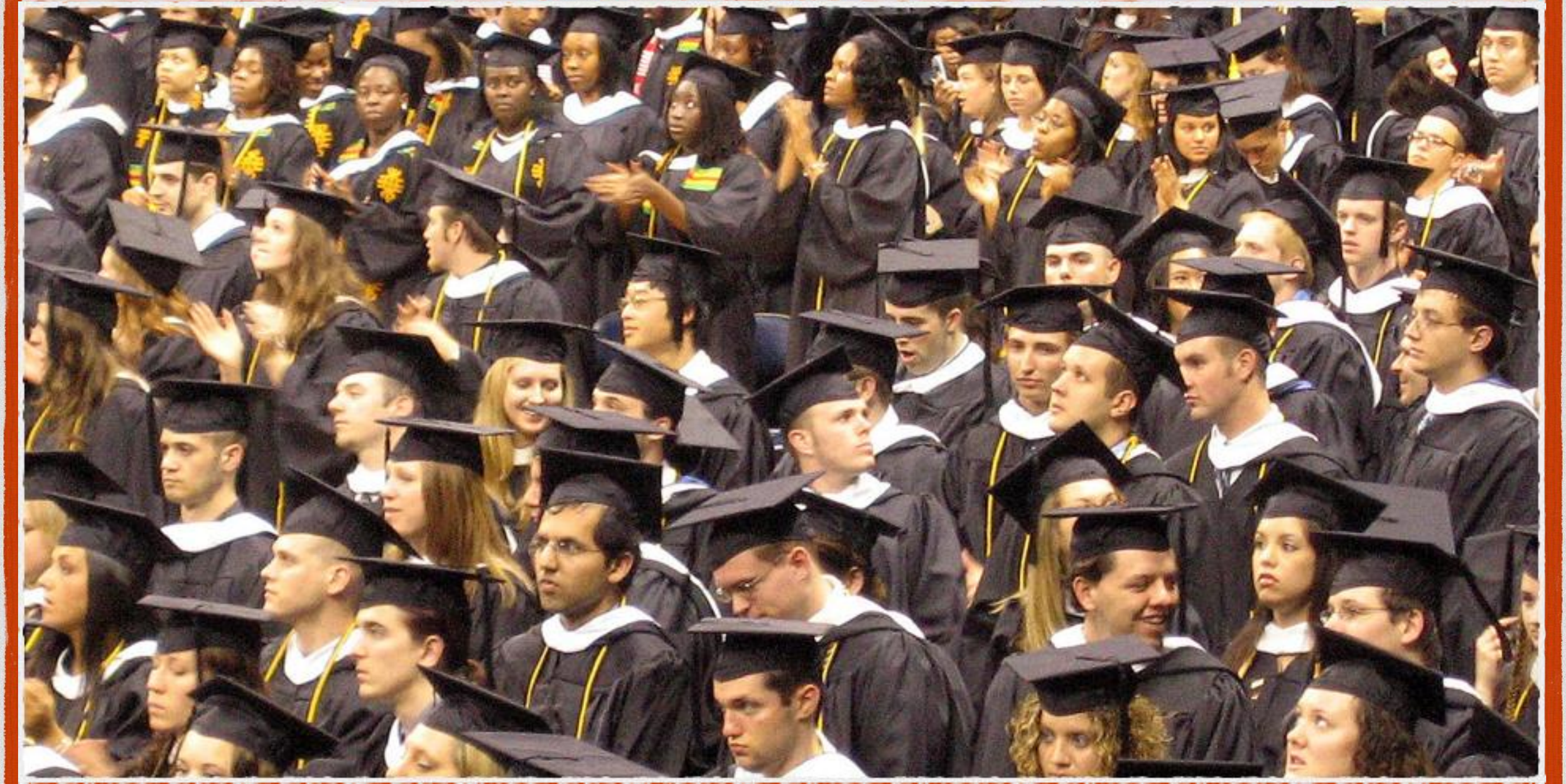

Postpositivism in online education

Is big data driving the teacher/student relationship off a cliff?

David S. Noffs Ed.D.
June 2016

Postpositivism in online education

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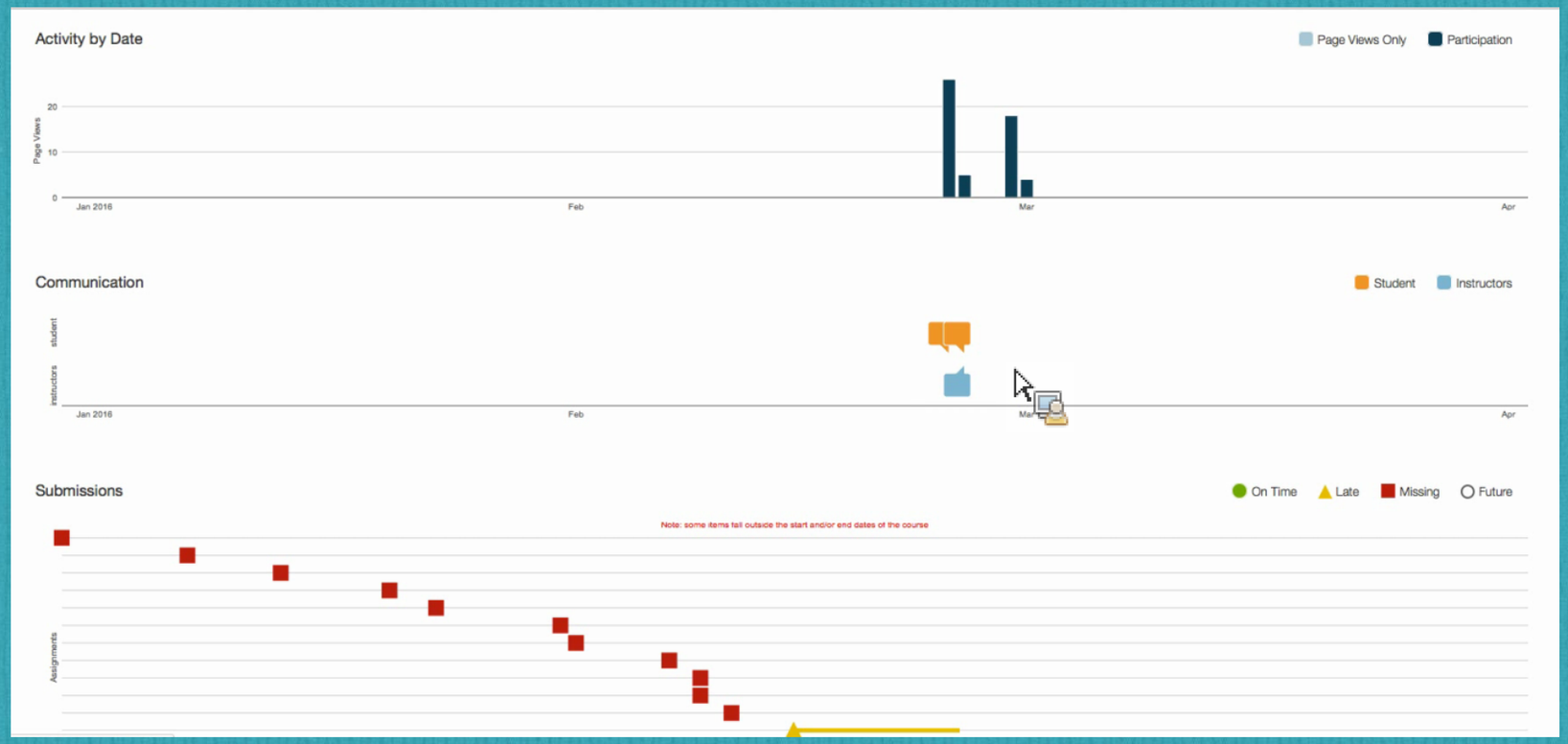
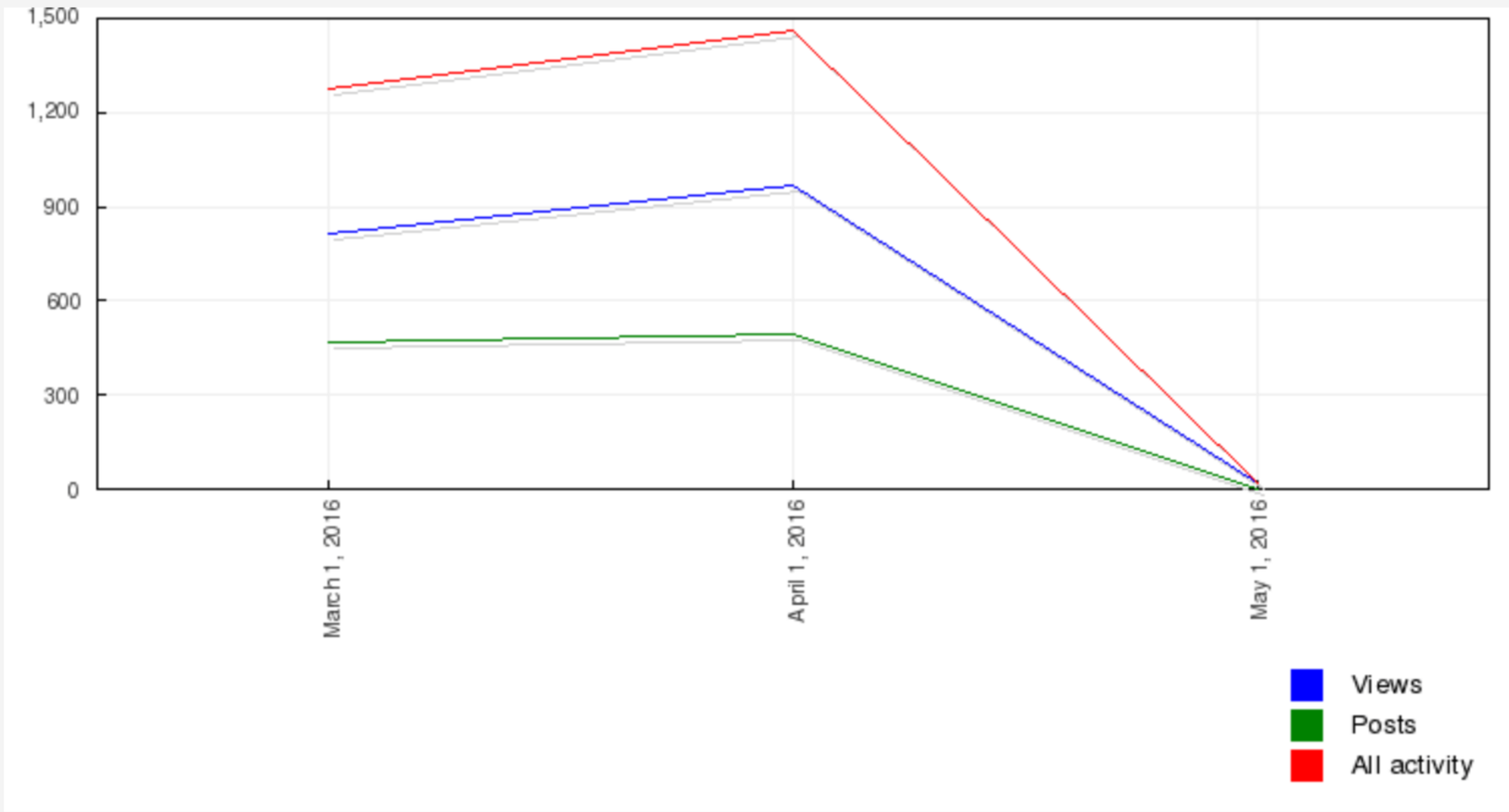
“The politics of data, the politics of evidence, cannot be separated from the ethics of evidence.”

(Denzin, 2015)



Sample Canvas Assignment Analysis

David Noffs



Period ending (Month)	Views	Posts	All activity
May 1, 2016	19	0	19
April 1, 2016	965	495	1460

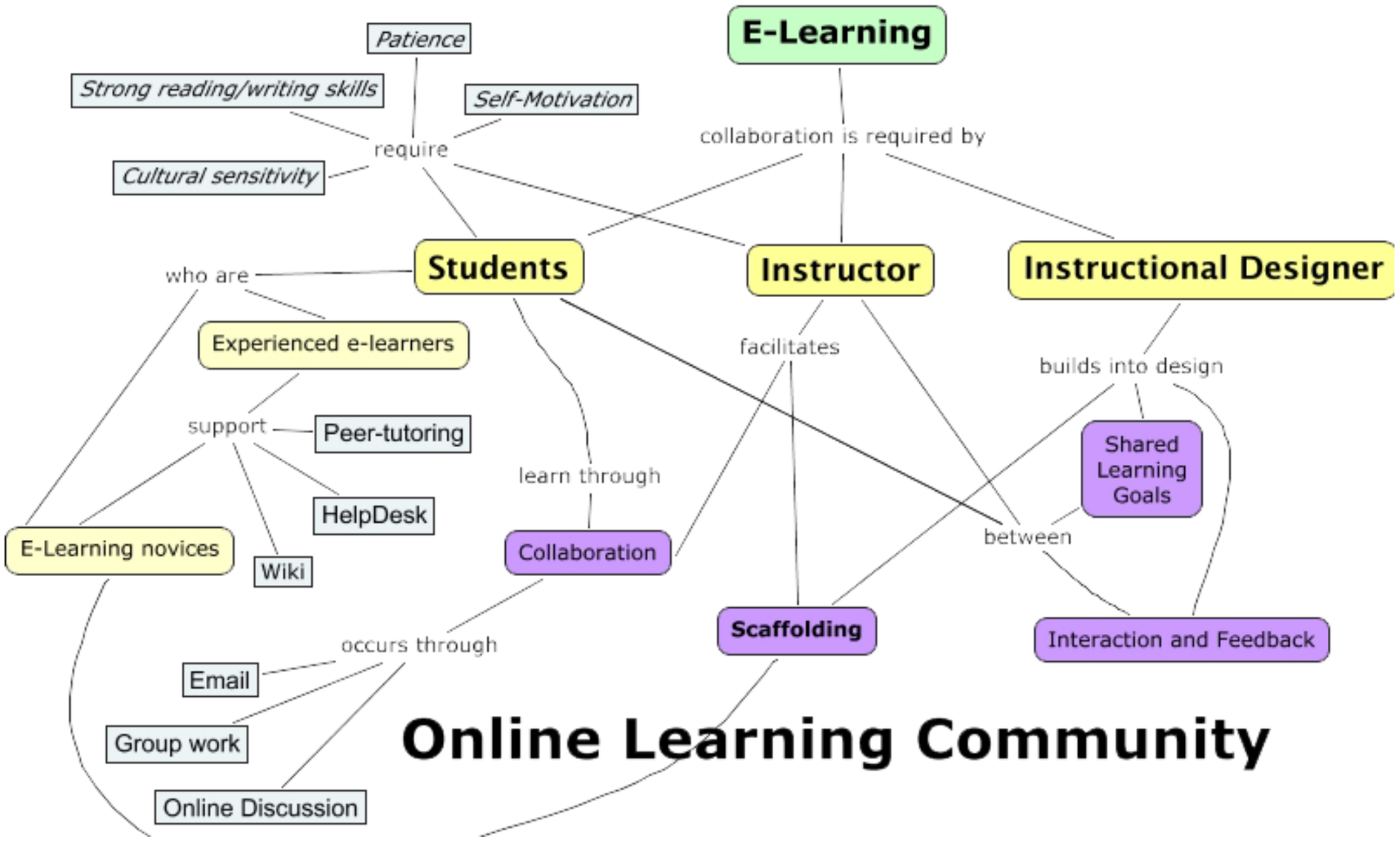
Sample Moodle Forum Analysis

“The measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs”

(Siemens & Gašević, 2012)

Some more terminology

- Data analysis - the viewing, inspection, and organization of data
- Data mining - the viewing, inspection, and organization of data for the purpose of predictive analysis
- Predictive analytics - using data to predict the future of something
- Big data - “datasets whose size is beyond the ability of typical database software tools to capture, store, manage and analyze” (McKinsey Global Institute, 2011). Often used for predictive analytics and metadata-analysis


E-Learning
Patience
Strong reading/writing skills
Self-Motivation
require
Cultural sensitivity
collaboration is required by
Students
Instructor
Instructional Designer
who are
Experienced e-learners
facilitates
builds into design
support
Peer-tutoring
learn through
Shared Learning Goals
HelpDesk
E-Learning novices
Wiki
Collaboration
between
Scaffolding
Interaction and Feedback
occurs through
Email
Group work
Online Discussion
Online Learning Community

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Welcome to the Online Public Access Catalog!
Please select one of the options below.

1. TITLE Keywords
2. Exact TITLE
3. AUTHOR Browse
4. SUBJECT Keywords
5. SERIES
6. SUPER Search
7. Newspaper Keyword Search
8. Newspaper Subject Search
9. Best Sellers and Award Books
10. Additional Searches
11. Review Patron Record
12. Logoff

Enter your selection(s) and press <Enter> :

S=Shortcut on, BB=Bulletin Board, ?=Help

Home

Modules

Canvas Learning Center

View Course Stream

Coming Up View Calendar

Nothing for the next week

1. Welcome to Canvas & Useful Forms

2. Workshops, Consultations, & Mini-Consultations

3. Designing Your Course

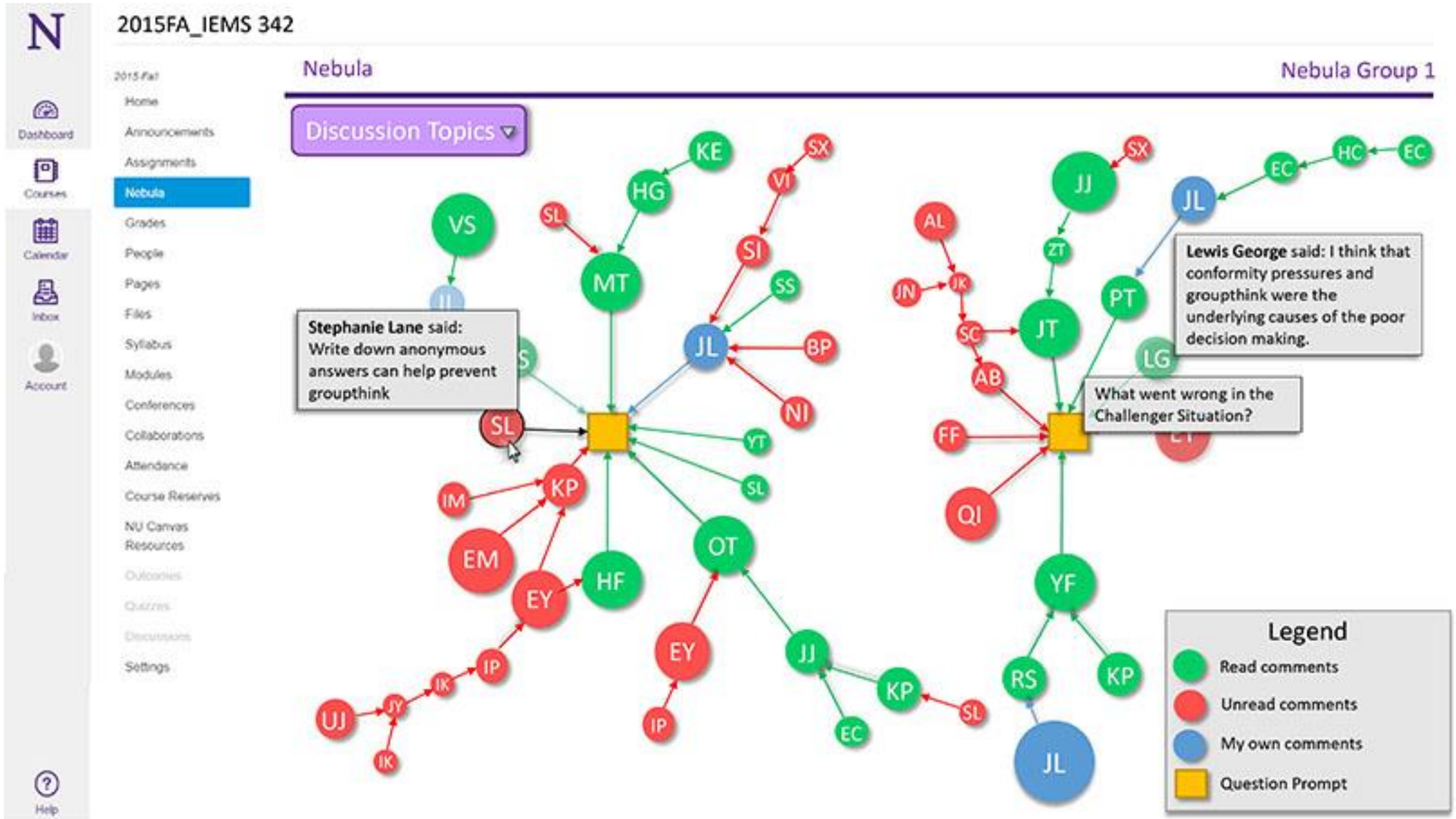
Canvas Course Analytics

- Available Information:
- Activity by date; Assignment submissions; Grades by assignment Sortable Student Report: click on each student’s name for an individual report including activity by date, participation, submissions, and grades.
- Course Statistics
- Available Information:
- Total discussions, assignments, active students, and quizzes; Assignment usage report; recently logged-in users; File storage
- Student Interactions Report
- Available Information:
- Last student interaction; Student’s current score; Student’s final score; Ungraded assignments; ability to directly message students.
- Ed Tech Tool Analytics

YellowDig: From Homepage, click “Board Metrics” on right hand side. Zaption: From Homepage, hover over lesson and click on graph button that appears on right hand side.

Source. Wickham, J. (2016). Canvas Analytics Quick Start Guide. Retrieved from http://dl.sps.northwestern.edu/learning-tech/canvas-guides/

Could this be the future of learner-centered education?



So who owns student data?

“Analytics in education must be transformative, altering existing teaching, learning, and assessment processes, academic work, and administration”

- George Siemens and Phil Long (2011) discussion the emergence of an “Intelligent Curriculum”.

The Power of Predictive Analytics

Smart universities are turning to new data sources to identify those students who need a nudge toward success.

By Dian Schaffhauser | 09/25/13

Photo: iStockphoto

The promise of predictive analytics in higher ed continues to entice--for good reason. It can change student lives. In the two years that the American Public University System has been applying predictive analytics to its online learners, for example, the dropout rate has fallen by 17 percent. To achieve this result,

Article by Dian Schaffhauser available at CampusTechnology.com
https://campustechnology.com/Articles/2013/09/25/The-Power-of-Predictive-Analytics.aspx#comment-1069230900

Siemens and Long propose the following cycle to reflect analytics in learning:

TABLE 1: LEARNING AND ACADEMIC ANALYTICS

TYPE OF ANALYTICS	LEVEL OR OBJECT OF ANALYSIS	WHO BENEFITS?
Learning Analytics	**Course-level:** social networks, conceptual development, discourse analysis, "intelligent curriculum"	Learners, faculty
	Departmental: predictive modeling, patterns of success/ failure	Learners, faculty
Academic Analytics	**Institutional:** learner profiles, performance of academics, knowledge flow	Administrators, funders, marketing
	Regional (state/provincial): comparisons between systems	Funders, administrators
	National and International	National governments, education authorities

- Course-level: learning trails, social network analysis, discourse analysis
- Educational data-mining: predictive modeling, clustering, pattern mining
- Intelligent curriculum: the development of semantically defined curricular resources
- Adaptive content: adaptive sequence of content based on learner behavior, recommender systems
- Adaptive learning: the adaptive learning process (social interactions, learning activity, learner support, not only content)

Penetrating the fog: Analytics in Learning and education. Available at: http://er.educause.edu/articles/2011/9/penetrating-the-fog-analytics-in-learning-and-education

“…even though learning analytics offers powerful tools and practices to improve the work of learning and assessment, well-considered principles and propositions for learning assessment should inform its careful adoption and use. Otherwise, learning analytics risks becoming a reductionist approach for measuring a bunch of ‘stuff’ that ultimately doesn't matter. In my world, learning matters”

- Melanie Booth (2012).

Open Learning Initiative founder at Carnegie Mellon University, Candace Thille also has concerns… she says that,

- Colleges should have more control over this field. “And a core tenet of any business is that you don’t outsource your core business process,” she notes.
- Companies aren’t as well equipped to develop and test new teaching algorithms as colleges are.As she puts it, “You have a very quick feedback loop, where the research informs the practice and the practice informs the research.”
- When companies lead the development of learning software, the decisions those systems make are hidden from professors and colleges.

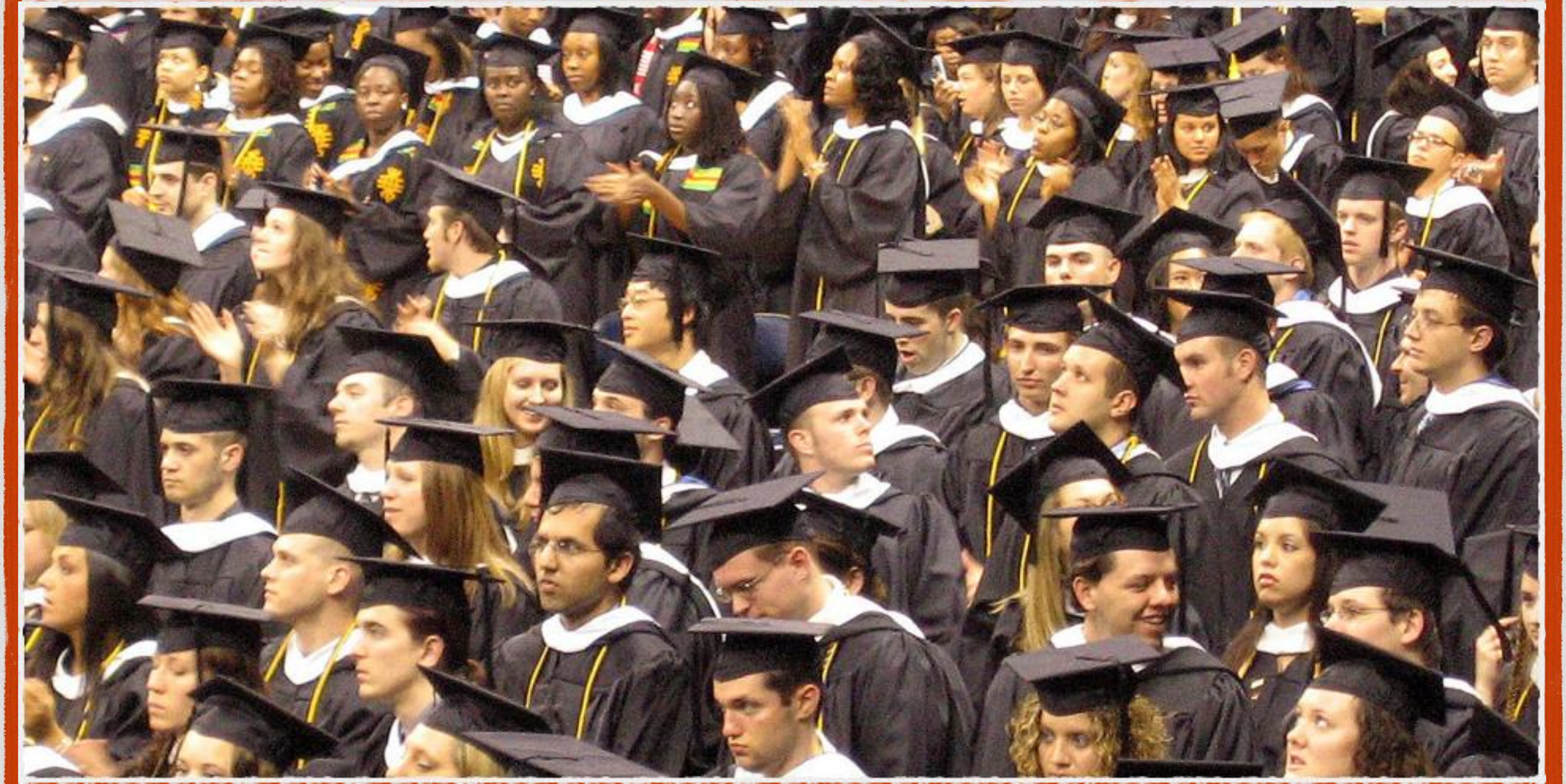
One Learning Management System site tells us that learning analytics tools will help,

- To identify at-risk students
- To increase student retention
- To predict likelihood of college readiness
- To shorten time to graduation
- To improve student engagement and satisfaction
- To understand instructor effectiveness
- To determine course effectiveness and identify areas for curriculum improvement
- To better prepare students for further study or their chosen vocation
- To understand how current technology is being used
- To analyze data for benchmarking and research
- To report on financial aid requirements
- To measure effectiveness of learning strategies, such as competency-based education (CBE) (i.e., outcome achievement, time to completion, ROI, student progress dashboards, etc.)

The Learning Analytics Blueprint. Available at: http://content.brightspace.com/wp-content/uploads/Learning_Analytics_Blueprint_Guide-1.pdf?postID=33525

“And here, the fog of postpositivism lingers. It is clear though, that as data become a commodity they carry the weight of the scientific process”

(Denzin, 2015; see also Charmaz, 2005; Maxwell, 2004)



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