

**Quality Matters** 7<sup>th</sup> Annual Conference 2015

**Analytics as Reflective Practice in Online Teaching and Learning**



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**Purpose of the paper**

The purpose of this paper is to examine learning analytics (LA) in the assessment of distance education.

The paper explores opportunities to apply learning analytics for change at individual and programmatic levels.



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**Objectives**

1. demonstrate the impact of learning analytics on teaching and learning
2. apply learning analytics within his/her educational program by selecting outcomes for assessment
3. seek additional resources for information about learning analytics



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## What are learning analytics?

- “the use of intelligent data, learner-produced data, and analysis models to discover information and social connections, and to predict and advise on learning” (Siemens, 2010 np)
- “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” (First International Conference on Learning Analytics and Knowledge, 2011)



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## How can I use LA?

For useful analysis, the instructor and program must define the target of learning analytics to collect behavior -based information. Individual and programmatic levels.

- Cognitive, psychomotor, attitudinal skills?
- Performance competency?
- Programmatic outcomes?
- Instructional design?



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## How can I use LA?

### WHAT TOOLS ARE AVAILABLE?

- Many tools to visualize results of data analysis
- LMS enabled spreadsheets exportable to Excel
- Open-source and commercial tools
- Plug-ins available applied to different LMS
  - Learning Analytics Enriched Rubric (LAe-R)
  - Social Networks Adapting Pedagogical Practice (SNAPP)
  - exploratory Learning Analytics Toolkit (eLAT)



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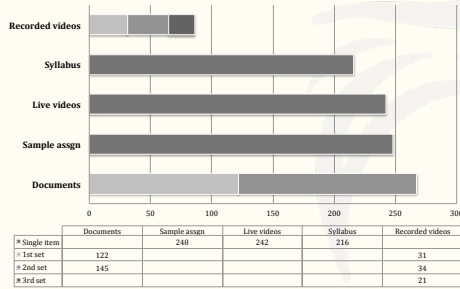
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## LA Tools: Reports and graphs

Top Resources for Course (# hits per resource)




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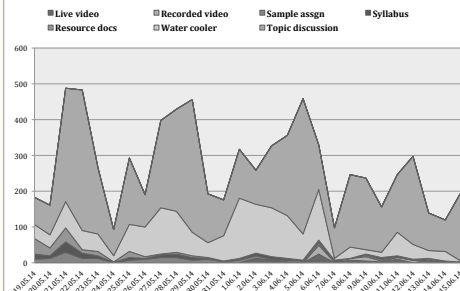
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## LA Tools: Reports and graphs

Activity level by resource (# hits by date)




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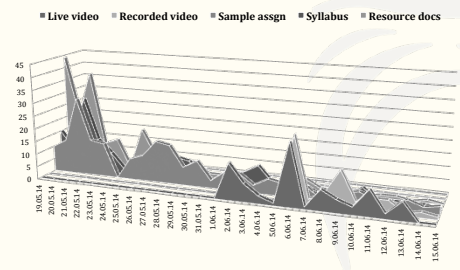
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## LA Tools: Reports and graphs

Activity level by resource (# hits by date) minus informal & required discussion forums




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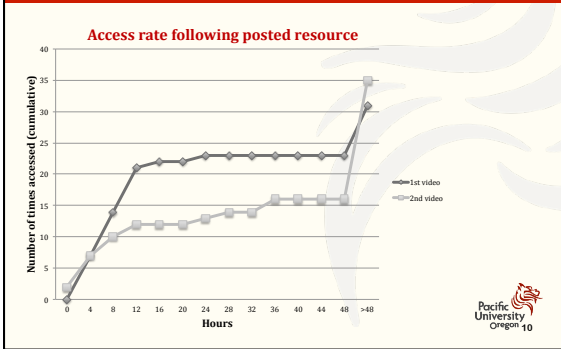
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## LA Tools: Reports and graphs




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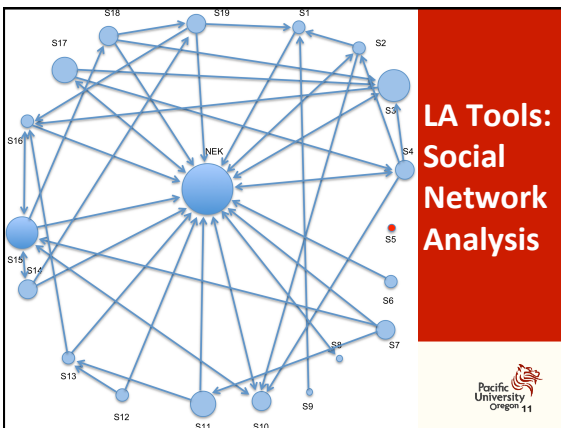
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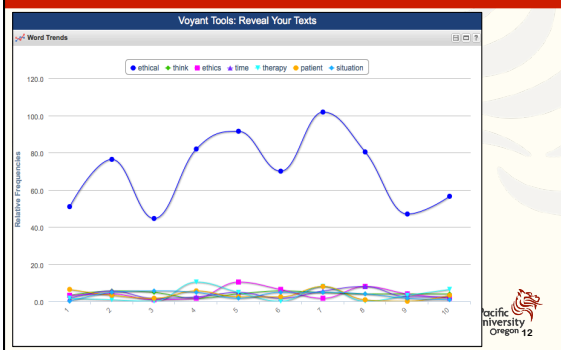
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## LA Tools: Text analysis (word frequency)




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## LA Tools: Text analysis (key words in context)

	Left	Keyword	Right
1	rehab is for all patients to receive three hours of	therapy	per day. The next day I was able to speak
2	...m were similar as were his sessions with physical	therapy	...I began dreading working with him because it w...
3	I could tell that my CI was uncomfortable with the	situation	as well. His pain fluctuated up and down a lot
4	...e documentation why we were unable to see our	patient	for the full hour. In addition, every session we would
5	...g pain medication until after we were due to start	therapy	with him. A couple of times my CI asked for
6	...ing inappropriately managed. But above all I had	ethical	reservations and felt that there was something et...
7	things ran through my mind, which initiated several lengthy conversations with my CI. I had many reservations and thought that his placement at inpatient rehab was completely inappropriate and his pain was being inappropriately managed. But above all I had	ethical/reservations	and felt that there was something ethically wrong with how his case was being managed and handled. Based on the occupational therapy code of ethics I felt that I was experiencing conflict with the principle of beneficence, which is
8	...anaged and handled. Based on the occupational	therapy	code of ethics I felt that I was experiencing conflict
9	...died. Based on the occupational therapy code of	ethics	I felt that I was experiencing conflict with the prin...
10	...team meeting that occurred each week for every	patient	on inpatient rehab I brought up my concerns. The...
11	the final day. During the few minutes allotted for my	patient	I did not feel heard or listened to by the
12	by the rehab physician and his decision to keep my	patient	in inpatient rehab I did not agree with. I felt

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## Discussion?

LA is more than a tracking a series of clicks.

- What do we need to know?
- What data to answer the questions?
- How interpret data to inform best practice?
- Formative and summative assessment?
- Ipsative assessment over time?
- Founded on theories, models, frames of reference?




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## Implications/Recommendations

- Legal and ethical standards
- Develop pedagogy and best practice (SoTL)
- Involve stakeholders in development
- Develop infrastructure
- Share information




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## Resources

Buckingham Shum, S. & Ferguson, R. (2012). Social learning analytics. *Educational Technology & Society*, 15 (3), 3-26.

Campbell, J.P., DeBlois, P.B., & Oblinger, D.G. (2007). Academic analytics: A new tool for a new era. *EDUCAUSE Review*, 42, 40-57.

<http://www.educause.edu/library/erm0742>

Dietrichson, A. (2013). Beyond clickometry: Analytics for constructivist pedagogies.

*International Journal on E-Learning*, 12, 333-351.



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## Resources

Norris, D., Baer, L., Leonard, J., Pugliese, L., & Lefrere, P. (2008). Action analytics: Measuring and improving performance that matters in higher education. *EDUCAUSE Review*, 43, 42-67. <https://net.educause.edu/ir/library/pdf/ERM0813.pdf>

Oblinger, D. & Campbell, J.P. (2007). Academic analytics. *EDUCAUSE*. <https://net.educause.edu/ir/library/pdf/PUB6101.pdf>

Siemens, G. (2010). What are Learning Analytics? <http://www.elearnspace.org/blog/2010/08/25/what-are-learning-analytics/>



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## Comments? Questions?

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