

Implications for CSU learning analytics

Key takeaways from the Learning Analytics and Knowledge
Conference (LAK) 2016



Learning Analytics and Knowledge (LAK 16)



The Royal Scots



Ben Sencindiver

- Ph.D. student mathematics



Gwen Gorzelsky

- Executive Director, TILT @ LAK
- Writing analytics: linguistic features
 - Coherence
 - Cohesion
 - Syntactic sophistication
 - Limitations: not yet addressing content and development of ideas
- Weka analytics tool:
 - Classifications
 - Relationships
- Reflective writing analytics:
 - Cross-disciplinary
 - Application and adaptation of knowledge in new contexts
 - Connections across knowledge types
 - Capacity to provide formative assessment feedback to large groups

James Folkestad

- Professor, School of Education
- Director of the Center for the Analytics of Learning and Teaching (C-ALT)
- Key takeaways
 - Learning analytics is a maturing field
 - Transdisciplinary work is required
 - Thoughtful design is essential

Maturing field

- Institutional Learning Analytics Centers
 - University of Technology - Sydney (Simon Buckingham Shum)
 - <http://simon.buckinghamshum.net/>
 - Open University, UK (Kevin Mayles)
 - <https://www.linkedin.com/in/kevin-mayles-4218a320>
 - University of British Columbia (Leah Macfadyen)
 - <http://www.educause.edu/members/leah-macfadyen>
 - University of Texas, Arlington (Pete Smith)
 - Dalhousie University, Halifax, Nova Scotia (Brad Wuetherick)
 - <http://www.dal.ca/dept/clt/about/Staff.html>
 - University of South Australia (Shane Dawson)
 - <http://people.unisa.edu.au/Shane.Dawson>
- Clearly faculty driven research centers
 - Conducting research on impact (both learning and teaching)
 - Intersection of learning / disciplinary science and data science
- Invent and deploy novel analytics tools

Transdisciplinary work

- Clearly faculty driven research centers
 - Best research is focused on digital
 - Conducting research on impact (both learning and teaching)
 - Intersection of learning and analytics
- Invent and deploy novel analytics tools - requires disciplinary expertise)
- Learning science, data mining (pattern recognition), learning analytics, instructional design experts.
- All centers were supporting faculty-driven innovation (localized innovation)

Thoughtful design is critical

- Design for analytics is critical (connect to learning)
 - Design objects to collect meaningful evidence
 - Avoid objects that can be gamed (e.g., watching videos more than two minutes... student will watch from 2 minutes 1 second to avoid red flags)
 - Must think about designing features (multiple data points) that indicate behavior and then use them for instruction to help students become better learners (e.g., SRP, self-regulation, etc.)
 - Cycles of behavior (become teaching opportunities)
 - Classification should be used with caution – protect diversity - protect those with learning difficulties
 - Cluster analysis has great potential – but again must be grounded in theory
- Opportunities – large
- CSU is well positioned to grow (C-ALT, TILT, RA, IR)

Mike Palmquist



- Associate Provost for Instructional Innovation
 - C-ALT -- Visionary Director
- Learning Analytics
 - Great potential of advancing teaching and learning
 - CSU must support research
- Society of Learning Analytics Research (SOLAR)
 - Support membership (institutional level)
 - If you are a member of C-ALT automatic member or SOLAR

CSU Next steps...

- Learning Data Analytics Committee - coordinate and organize CSU learning analytics (Associate Provosts, Directors, Chairs)
- Learning Analytics Working Group (LAWG)
 - Laura Jensen (Planning and effectiveness – IR)
 - Dave Johnson (Research and Analytics – CSU Online)
 - Gwen Gorzelsky (Executive Director – TILT)
 - James Folkestad (Director C-ALT)
- Center for the Analytics on Learning and Teaching (C-ALT)
 - Faculty-driven research center
 - Entryway to transdisciplinary research
 - Entryway to Unizin developments and research (tools – e.g., Unizin Engage – unizin.org/unizin-engage) and analytics



Analytics of Learning & Teaching (C-ALT)



- CIOSU Center
- Primary and distinct role
 - Facilitate faculty-driven research projects that use learning analytics (LA) and Educational Data Mining (EDM) to investigate questions related to learning and teaching
- Transdisciplinary projects
 - Detecting self-regulated learning behaviors in calculus (PI – Mary Pilgrim, Co-PI – James Folkestad, Dave Johnson, GRA – Ben Sencindiver)
 - Assessing 3D visualization skills in introductory statics (CIVE 260) – PI – Dan Baker, GRA - Kimberly Corwin
 - Assessing 3D visualization skills in domestic animal gross anatomy (BMS 305) PI – Tiana Magee, GRA – Kimberly Corwin
 - Detecting students spaced retrieval practice behavior using the Canvas quiz log tool in General Microbiology (MIP 300): PI – Erica Suchman, Jennifer McLean, GRA – Priya Harindranathan
 - Detecting controlled experimental behavior - Comp Hydro (NSF funded grant): PI – John Moore (NREL), James Folkestad
 - The ethics of big data at CSU: PI – Sharon Anders, Co-PI – James Folkestad, Dave Johnson, Gwen Gorzelsky

About C-ALT

The Center for the Analytics of Learning and Teaching (C-ALT) is a faculty-driven [CIOSU research center](#) within the [College of Health and Human Services](#).

The primary, and distinctive, role of C-ALT is to facilitate faculty-driven research projects that use academic analytics, learning analytics (LA), and Educational Data Mining (EDM) methods to investigate questions related to learning and teaching. C-ALT is dedicated to sharing expertise, approaches, and resources with the overall intention of using analytics to improve learning and teaching at CSU.

To learn more about C-ALT you can...



Read: Welcome message from the Director



Get involved: Upcoming events and meetings



Learn about: C-ALT research projects



Join: C-ALT



Engage: C-ALT graduate student opportunities



Propose: A C-ALT project (apply)

- Monthly meetings
- Host LA guest lectures
- Support projects
- SOLAR membership

LAK 17 – Vancouver

LAK'17 Location Announced!

March 13-17, 2017 • Vancouver, BC

The 7th International Learning Analytics and Knowledge Conference will take place at Simon Fraser University in Vancouver, Canada. Preparations are currently ongoing and we will be releasing information in the coming months.
(keep posted...)



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