

# LAK17 Workshop: Writing Analytics Literacy – Bridging from Research to Practice

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## **Keynote: Automated feedback in large-scale formative writing: Lessons learned and best practices**



### **Peter Foltz (Pearson)**

**Abstract:** Student writing in digital educational environments provides a wealth of information about the processes involved in learning to write, the processes involved in acquiring domain knowledge, and evidence for the impact of the digital environment on those processes. Developing these skills is highly dependent on students having opportunities to practice, most particularly when they are supported with frequent feedback and taught strategies for planning, revising and editing their compositions. Formative systems incorporating automated writing scoring provide the opportunities for students to write, receive feedback, and then revise essays in a timely iterative cycle. Analytics on the data stream further provide a means for instructors and administrators to track changes in performance, at an individual student level and at a class, school, state, or national level. This talk will reflect on the development, implementation, deployment and maintenance of several systems used in K-12 and higher education and used by millions of students. The talk will focus on the crucial role writing analytics can play in providing empirical support for continual improvement in writing instruction through validating and challenging pedagogical writing theory and verifying that the features of the system positively impact learning. While some of these issues may be evident in small scale implementations, when a system is deployed across large, diverse student populations the power of learning analytics applied to log data can be critical to obtain understanding of student performance and validation of design decisions to improve learning outcomes. The talk will finally describe seven lessons-learned and three best practices for moving from pedagogical principles to research studies to practical large-scale implementations.

**Bio:** Dr. Peter Foltz is Vice President for Research in Pearson's Advanced Computing and Data Sciences Laboratory and Professor Adjoint at the University of Colorado's Institute of Cognitive Science. His work focuses on reading comprehension and writing skills, 21st Century skills learning, and uses of machine learning and natural language processing in educational technology. His key interest is in bridging the theoretical knowledge around student abilities with practical issues in implementation in order to allow the use of innovative technologies in learning and assessment. Dr. Foltz has further served as the lead for the framework development for the 2018 Reading Literacy assessment and for the 2015 assessment of Collaborative Problem Solving for the Organisation of Economic Cooperation and Development's (OECD) Programme for International Student Assessment (PISA). The methods he has pioneered are used by millions of student annually to improve student achievement, expand student access, and make learning materials more affordable. He has authored more than 100 journal articles, book chapters, conference papers, and other publications and holds patents for educational technology. He previously worked as a professor at New Mexico State University, and as a researcher at Bell Communications Research and the Learning Research and Development Center at the University of Pittsburgh. Dr. Foltz holds doctorate and master's degrees in Cognitive Psychology from the University of Colorado, Boulder, and a bachelor's degree from Lehigh University.