

Analytical Reviews in Adaptive Learning

December 18, 2013 Dr. Danny Lynch

This blog post is second in the series on Learning Analytics. For the first post see [Learning Analytics in Realizeit](#).

The Realizeit analytics engine provides insights into courses that are currently running, but also goes beyond the current learning process. It explores the historical data from all previous courses to identify statistical trends and correlations. The **Analytical Reviews** component of the Realizeit ecosystem presents actionable insights to each stakeholder, with transparent access to the underlying data supporting those insights. Moreover, the analytical reviews also give each stakeholder quick access to a comprehensive set of summary data relevant to them. These reviews are currently split into four types:

- Course development review
- Instructor review
- Course review
- Overall review

The **course development review** takes a course and examines the content and curriculum associated with that course. It does this across all instances of that course, providing a timeline of data on how content and curriculum have changed. Here the course development team can see the effectiveness of their previous changes and also gain insight into other aspects of the course that need development. Realizeit creates a feedback loop with the students, the content, the questions, and the course development team. By raising appropriate flags to the team, this allows for the continuous improvement of both online and blended courses.

Instructors have access to the **instructor review** where insights are detailed about that instructor on all courses they have taught. This covers all their class groups across all instances of their courses. Here the instructor can visualize their teaching style and see how it has developed over time. Moreover the instructor's interactions and interventions with students are summarized, showing corresponding effects in student performance. Overall, the instructor has a window into their teaching history and is provided with the information necessary for continuous professional development.

The **course review** focuses on a single course and studies all instances of that course. Here academic management and other relevant staff can inspect the course characteristics and determine their future progression. These characteristics include measures of successfulness such as student engagement, performance and retention. Furthermore there are characteristics that outline the resources consumed to run the course. This allows for optimization in the use of institutional resources while focusing on improving the desired course outputs.

The **overall review** is similar to the course review, but in this case compares all courses over all sessions at once. The scope of the review can be limited to specific schools or departments, or left open to every course running in Realizeit. This allows various levels of academic administration to obtain a comprehensive view into the courses for which they are responsible. The courses are automatically compared against each other to identify relationships and interdependencies. The courses that are key to student success and retention (either positive or negative) are highlighted, along with the observed trends and all supporting underlying data.



Dr. Danny Lynch

Danny forms part of the research team at Realizeit. His work focuses on advancing the algorithms and technology that are central to driving the Realizeit ecosystem, while also exploring new and novel components. He strives to further the research field of educational technology with the ultimate aim of benefiting the learner. Danny holds a Joint Honors Bachelor's Degree in Mathematics and Theoretical Physics from University College Cork, and also has a PhD in Mathematics from University College Dublin. He is a Government of Ireland Scholar, and has completed specialized research projects in several areas such as Homomorphic Encryption, Nano-transistor Design, and Data Analysis. Moreover, Danny has also spent numerous years in the education field. He has lectured at University College Dublin, and has taught high school students at various settings.