Psychometrics of MOOCs: How Analyzing Digital Traces Helps to Improve Learning

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Traditional vs. Online Learning

We can see what happens...  We cannot see what happens...
But we have data...

A lot of data on learners, content and context
Psychometrics is a scientific discipline concerned with the question of how hidden/unobservable constructs (e.g., knowledge, interest, motivation) can be optimally related to observables (e.g., item responses, response times, content views).
Center for Psychometrics in eLearning

When and why digital learning does happen, and how digital learning products do work?
Learners are more active with video lectures than with reading materials.

**Hint! Include reading materials into video lectures.**
We have detected three groups of learners: majority with decreasing activity, and minorities with flat and increasing activity.

The minorities perform better and with a lower number of attempts in summative assessments.
Example Three

Guest lectures boost learners’ interest.
«In the start of the course you may feel asleep, but later it is fine…» (from a learner’s feedback)
Although we have a lot of exciting breakthroughs in psychometrics, shipping analytic products are still cumbersome. There is a gap between research and practice. The biggest problems are research generalizability and users’ perception. To take psychometrics to every digital learning product, we as a community have important work to do to cover this gap.
Thank you!

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