



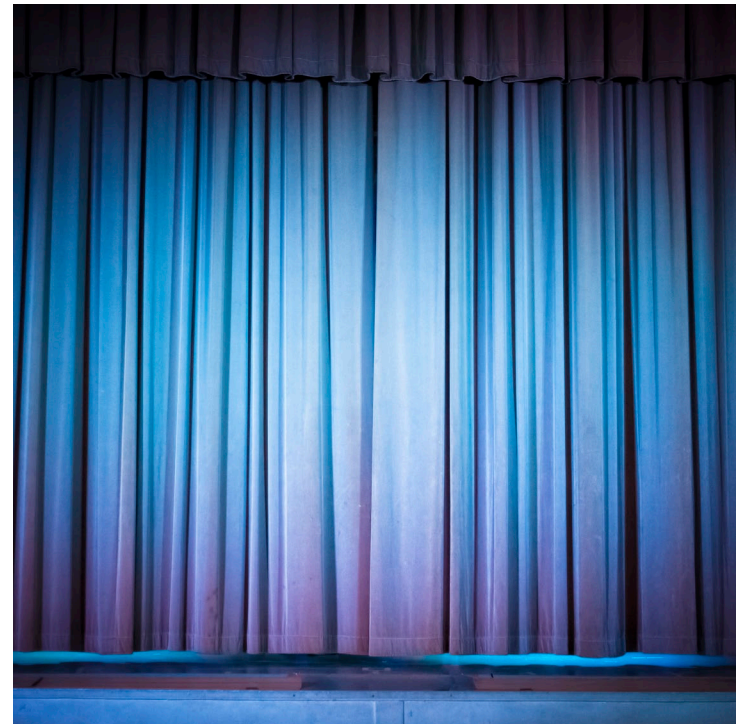
Psychometrics of MOOCs: How Analyzing Digital Traces Helps to Improve Learning

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Traditional vs. Online Learning



We **can** see what happens...



We **cannot** see what happens...

The background of the slide is a dark green field filled with a pattern of small, light green squares and vertical lines, resembling a digital matrix or data stream.

But we have data...

A lot of data on learners, content and context

Psychometrics

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,

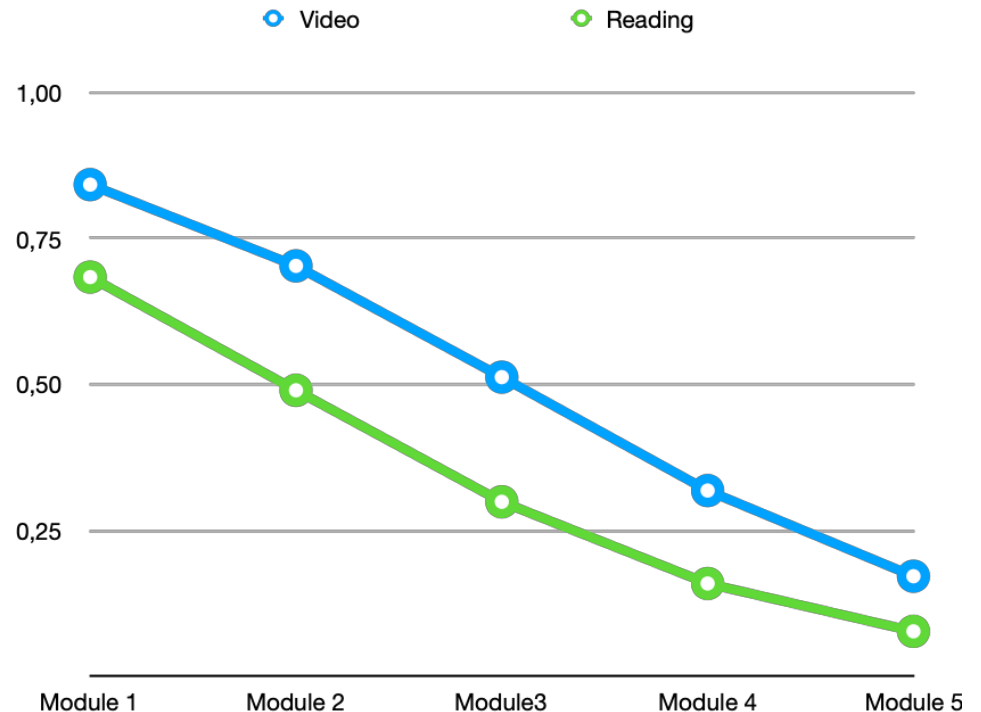
and **how**

digital learning
products do work?

Example One

Learners are more active with video lectures than with reading materials.

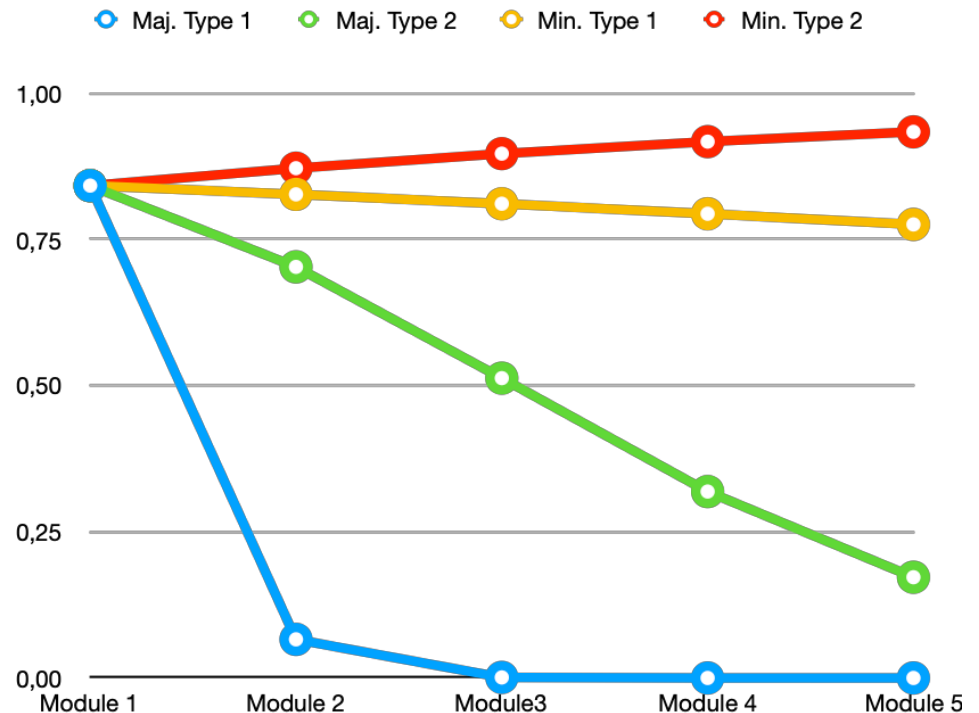
Hint! Include reading materials into video lectures.



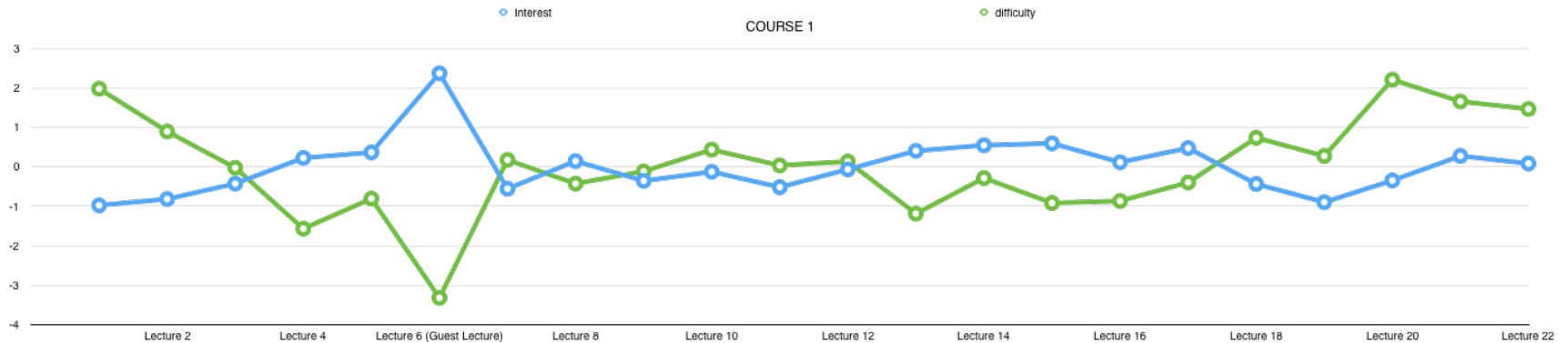
Example Two

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.

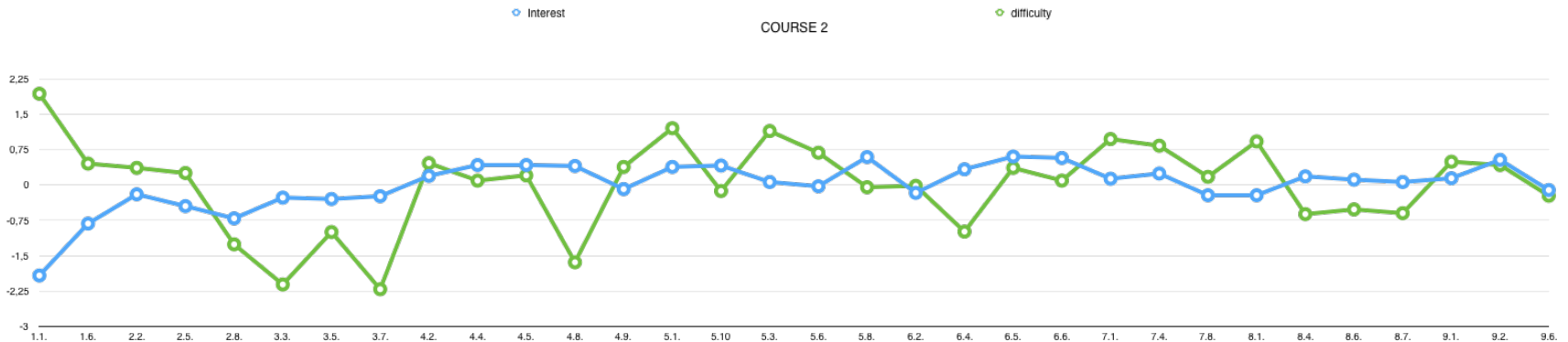


Example Three



Guest lectures boost learners' interest.

Example Four



«In the start of the course you may feel asleep,
but later it is fine...» (from a learner's feedback)

What next?

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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