Selected topics in psychometrics, NMST570

Course goals

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2017/2018

After taking this course you should be able to

1. Name main topics in psychometrics
2. Perform basic psychometric analysis of your data with ShinyItemAnalysis or other software.
3. Describe process of development of conceptual assessment
4. Describe strategies to find proofs about validity of your instrument
5. Describe strategies to find proofs about reliability of your instrument
6. Describe traditional methods to describe item functioning (difficulty, discrimination)
7. Explain how logistic regresion may be used to describe item properties
8. Explain difference between 2-parameter IRT model and logistic regression model
9. Write equation of Rasch model, 1-,2-,3- and 4-parameter IRT model
10. Explain concept of Differential item functioning
11. Explain how computerized adaptive testing works
12. Prepare your own adaptive test

References

Martinková, P., Drabinová, A., & Houdek, J., Leder, O. (2017). ShinyItemAnalysis: Test and Item Analysis. Online Application. https://shiny.cs.cas.cz/ShinyItemAnalysis
R package version 1.2.3 https://cran.r-project.org/package=ShinyItemAnalysis