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Psychometric Properties of Instruments Evaluation in Educational Assessment

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Abstract

Psychometrics is the aspect of psychology which concerned with psychological testing. Psychometric properties of examination as certain attributes inherent in tests upon which an assessment of a candidate is based. These properties include the facility and difficulty indices, the discrimination index, the power of distracters, validity and reliability indices. The field of psychometrics is primarily concerned with the construction and validation of measurement instruments such as test, questionnaires and personality inventories. Psychometrics is applied widely in educational assessments to measure abilities in domains such as reading, writing and science subjects. The psychometric properties that every measuring instrument such as a test should possess are validity and reliability. Measurement instruments play an important role in research and education assessment. Studies on the quality of these instruments provide evidence of how the measurement properties were assessed, helping the researchers choose the best tool to use. Reliability is the ability to reproduce a result consistently in time and space. Validity refers to the property of an instrument to measure exactly what it proposes. In this paper, the main criteria and statistical tests used in the assessment of reliability (stability, internal consistency and equivalence) and validity (face, divergent, convergent, content, criterion and construct) of instruments are presented, discussed and exemplified. The assessment of instruments measurement properties is useful to subsidize the selection of valid and reliable instrument, in order to ensure the quality of the study.

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