

# Psychometrics

## What is psychometrics?

Psychometrics is

- *“the field of study concerned with the **theory and technique of educational and psychological measurement**, which includes the **measurement of knowledge, abilities, attitudes, and personality traits**. The field is primarily concerned with the construction and validation of measurement instruments, such as questionnaires, tests or personal assessments.”<sup>1)</sup>*

Psychometrics started to develop from early works on intelligence and intelligence testing.<sup>2)</sup> Intelligence was supposed to be measurable since it was fixed and observable, and later compared to fixed grades.

The measurement or assessment can take many forms like interview, examination, multiple-choice, diagnostic, practical, continuous assessment, ..., but all of these methods need be:

- standardized,
- valid,
- reliable, and
- free from bias.

Psychometrics uses two kinds of tests and test items<sup>3)</sup>:

- knowledge-based tests and test items for measuring a person's knowledge, and
- person-based tests and test items for assessing mood, cynical symptoms, personality or attitudes.

Two important assumptions of psychometrics are:<sup>4)</sup>

- assumption of unidimensionality (meaning that the items in a test should measure only a single attribute), and
- assumption of universality (meaning that a test score has the same meaning for all individuals anywhere).

## Psychometrics, educational measurement and educational assessment

Since psychometrics was originally introduced to deal with issues of measuring intelligence, a need for an assessment approach specifically designed for educational process appeared. This new assessment process should have been useful in the processes of planing, teaching, learning and evaluation.<sup>5)</sup>

<sup>1)</sup>

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