

Exercise walk-through

Intelligence and Achievement ■ 2.8

eXercise

You must be able to

- state what **general intelligence** 一般智力 claims and one alternative view
- explain **reliability** 信度, **validity** 效度 and **standardisation** 标准化
- describe a **normal distribution** 正态分布 of scores
- discuss **stereotype threat** 刻板印象威胁 and test bias

Method — One factor or several

The **general intelligence** view holds that performance across different mental tasks correlates, implying a common factor. Alternative theories propose several relatively independent intelligences or types, and disagree about how much a single score can capture.

Method — Three test properties

Reliability: the test gives consistent results. **Validity:** it measures what it claims to measure. **Standardisation:** scores are interpreted against a representative comparison group. A test can be reliable and still invalid.

Method — The distribution

Standardised intelligence scores form a **normal distribution**: most people cluster near the average, with symmetrical tails. The mean and standard deviation are set by the standardisation sample.

Method — Stereotype threat

When a negative stereotype about one's group is made salient, performance can drop. This is a situational effect on the **score**, not evidence about ability, and it is one reason score gaps require careful interpretation.

Practice 2.1 ■ 2 marks

State the difference between reliability and validity.

Solution 2.1

Method: Three test properties

Worked steps

reliability is consistency of results **B1**; validity is whether the test measures what it claims to **B1**.

Practice 2.2 ■ 2 marks

Explain what standardisation of a test involves.

Solution 2.2

Method: Three test properties

Worked steps

administering the test to a representative sample **B1** so that later scores can be interpreted against that comparison group **B1**.

Practice 2.3 ■ 1 mark

A test gives the same score to the same person on two occasions, but the score does not predict school performance at all.

- (a) State which property it has.
- (b) State which it lacks.

Solution 2.3

Worked steps

(a) reliability **B1**. (b) validity **B1**.

Exam-style 3.1 ■ 1 mark

In a normal distribution of test scores, most people score

A near the extremes

B near the mean

C identically

D above the mean

Solution 3.1

Method: The distribution

A near the extremes

B near the mean



C identically

D above the mean

Worked steps

B. a normal distribution clusters around the mean with symmetrical tails.

Exam-style 3.2 ■ 1 mark

Reminding candidates of a negative stereotype before a test can lower their scores. This is

- A** evidence of lower ability
- B** stereotype threat
- C** test-retest unreliability
- D** standardisation

Solution 3.2

A evidence of lower ability

B stereotype threat 

C test-retest unreliability

D standardisation

Worked steps

B. the situation, not the ability, has changed.

Exam-style 3.3 ■ 1 mark

A test is standardised on one national group and used with another.

- (a) State one problem this may create.
- (b) Explain why a score difference between the groups would be hard to interpret.

Solution 3.3

Worked steps

(a) the comparison group may not represent the people being tested **B1**. (b) the difference could reflect test content, language, familiarity or stereotype threat rather than ability **B1**, so the score alone cannot identify a cause **B1**.