

*From purpose to outcome:
Developing high-quality
assessments for Indian
higher education*

India ATP conference

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9 November 2016



Outline

Putting assessment in context

Types of assessment

Creating fit-for-purpose assessments

Closing thoughts: Assessing 21st century skills

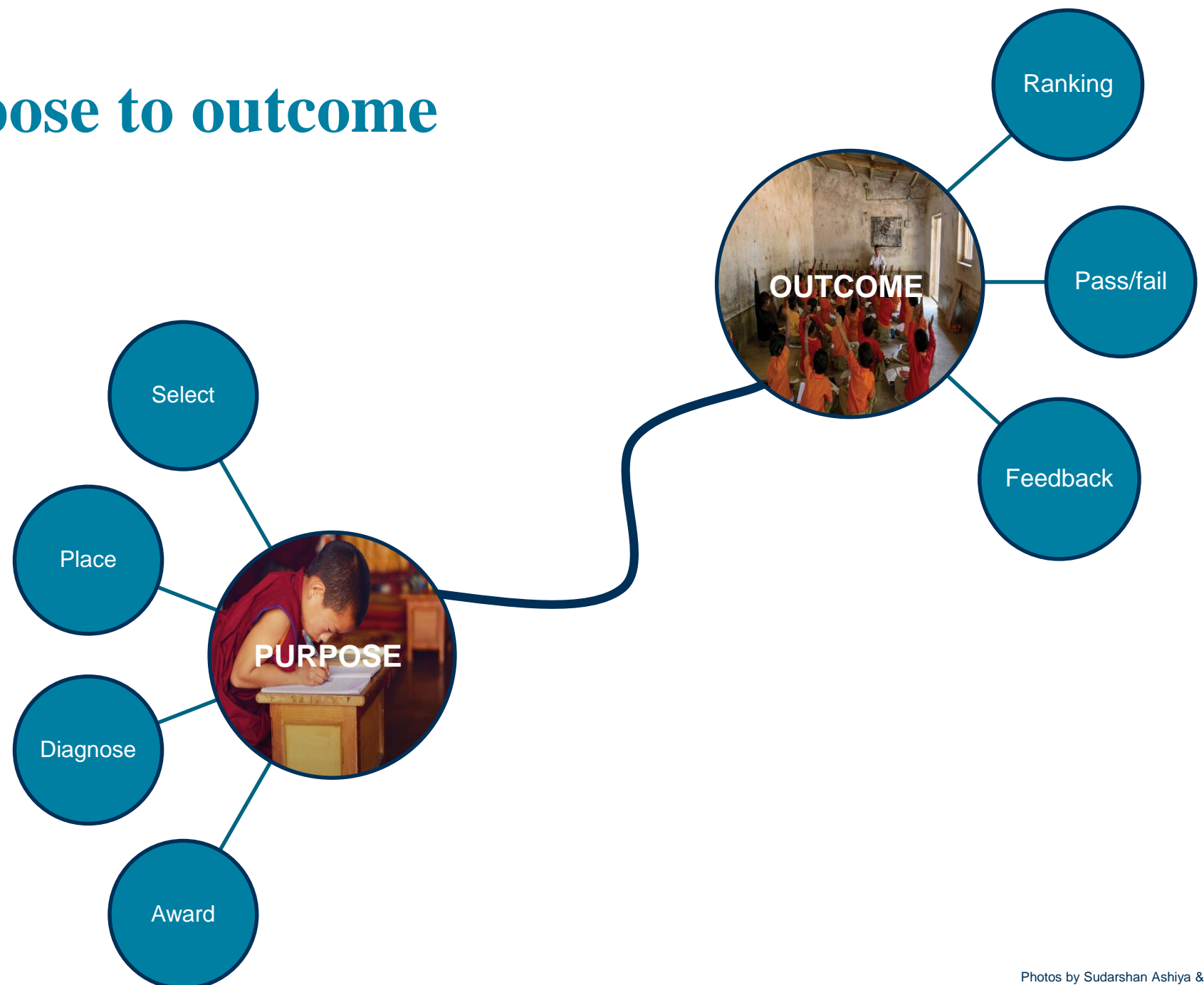


Putting assessment in context

Assessment is a **problem solver**, not an activity.

The quality of assessment and the fitness of the assessment to the purpose is critical to its function as a problem solver.

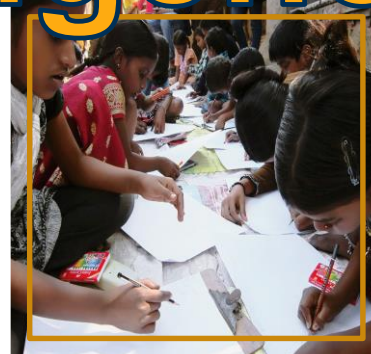
From purpose to outcome





Digital age Globalisation

Artificial intelligence



21st century skill frameworks

- P21 – Partnership for 21st Century Skills
<http://www.p21.org>
- EnGauge – Metiri Group and NCRL
<http://files.eric.ed.gov/fulltext/ED463753.pdf>
- 21st Century Skills & Competencies – Organization for Economic Cooperation and Development
<http://files.eric.ed.gov/fulltext/ED529649.pdf>
- ATC21S – Cisco/Intel/Microsoft
<http://www.atc21s.org>
- Essential Learning Outcomes – American Association of Colleges and Universities
<https://www.aacu.org/leap/essential-learning-outcomes>
- Seven Survival Skills – Tony Wagner (Harvard Graduate School of Education)
<http://www.tonywagner.com/7-survival-skills>

21st century skills

Critical thinking

Digital literacy

Creativity/Innovation

Cross-cultural understanding

Information literacy

Self-reliance

Adaptability

Collaboration

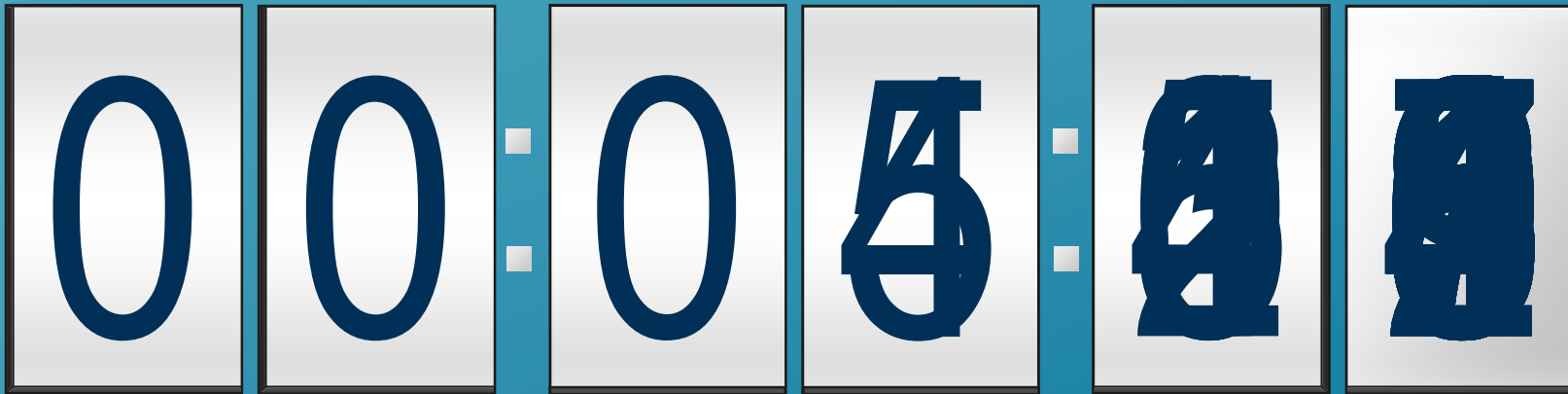
Case study exercise

You are have been assigned to examine the value added by your institution to developing your students' competencies in 21st century skills.

Your task: Select one of the following 21st skills and determine an assessment process to accomplish the above objective:

- Critical thinking
- Cross-cultural understanding
- Creativity/innovation
- Digital literacy
- Self-reliance
- Information literacy
- Collaboration
- Adaptability

21st Century Skills



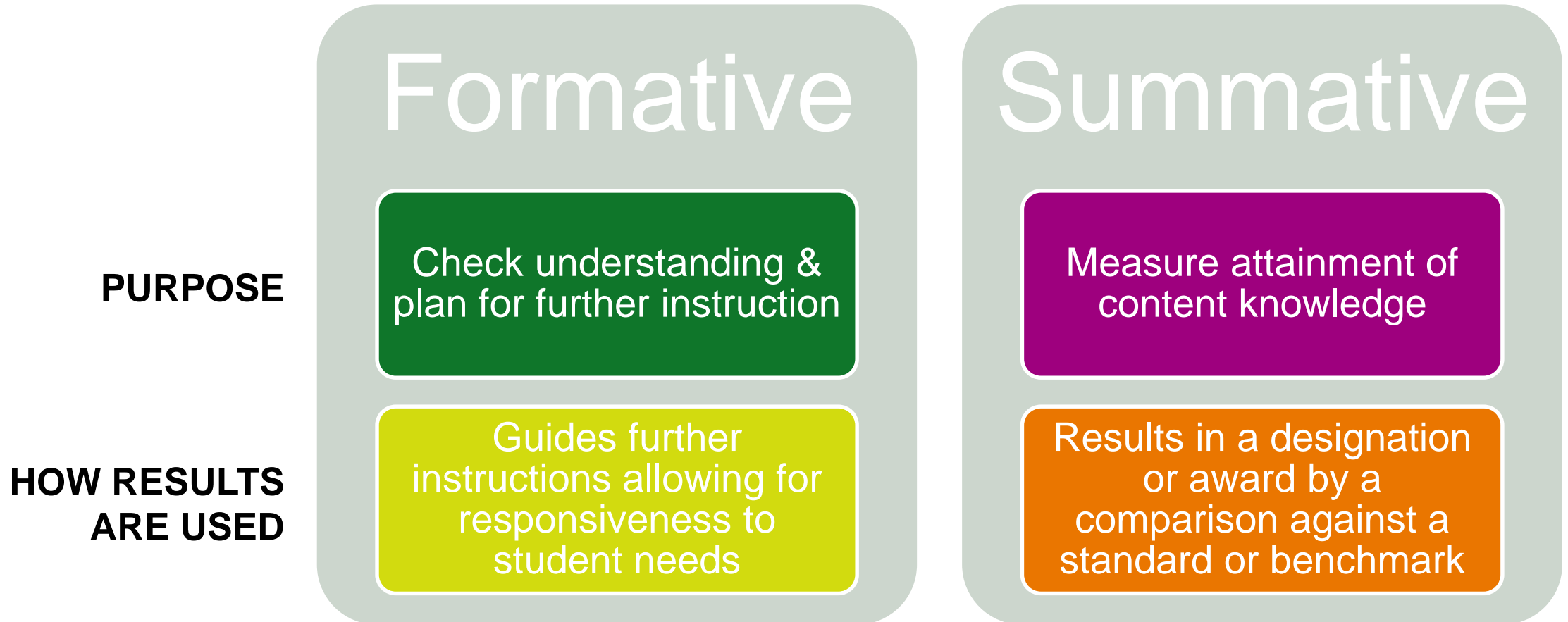
Hours

Minutes

Seconds

Types of assessment

Types of assessment



Adapted from *Every Teachers Guide to Assessment*, <http://www.edudemic.com/summative-and-formative-assessments/>

Types of assessment



Learner checks

Medium stakes

High stakes

A test for which the results have important and direct consequences for those who take the test and for those who sponsor or use it

Types of assessment

Standardised tests

Test administered in a consistent manner with regard to:

- Administration conditions & procedures
- Test content
- Scoring procedures
- Score interpretations

Types of assessment

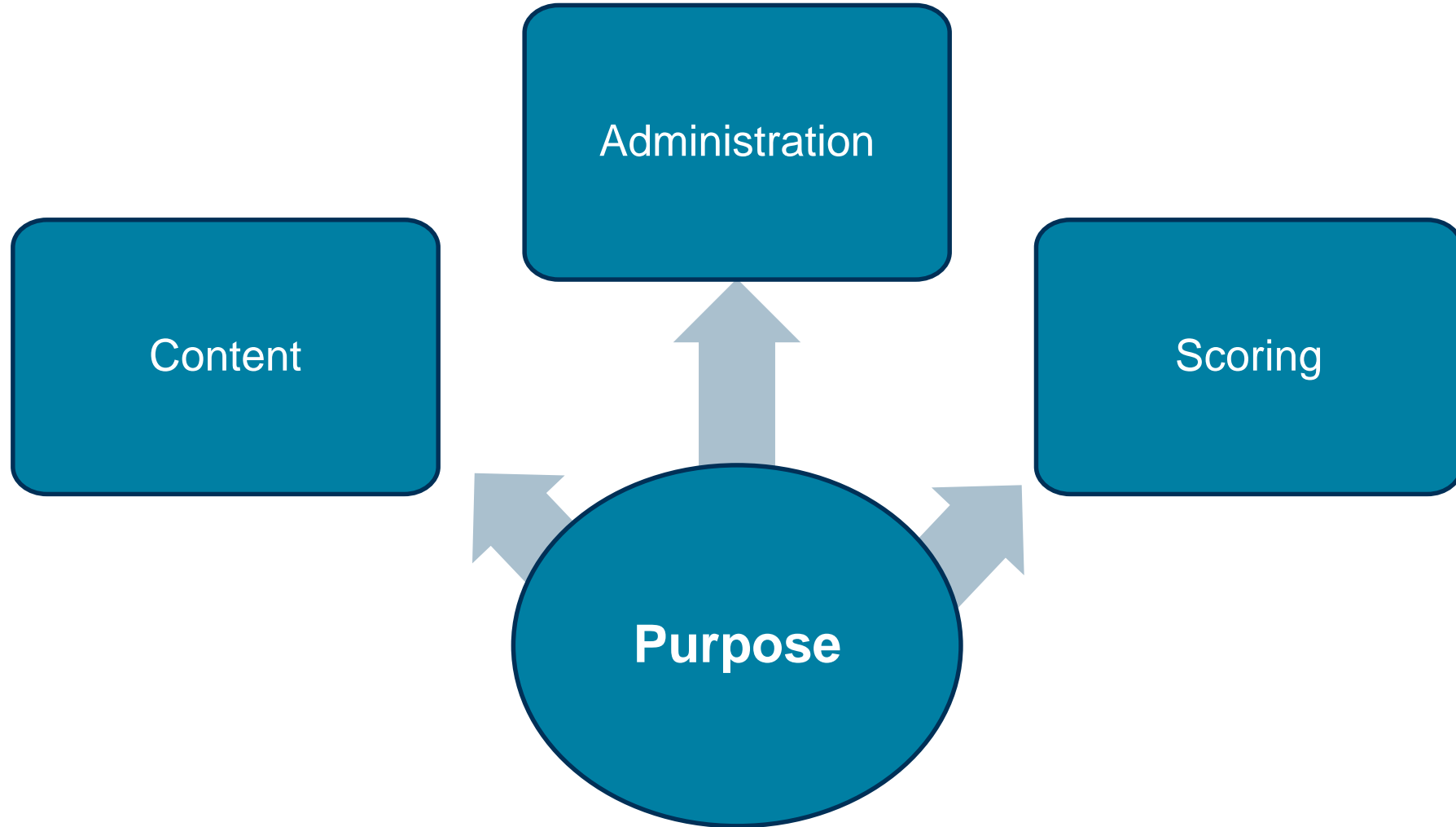
Norm-referenced tests

Test taker performance is assessed against a “norm” or average in order to rank the test takers

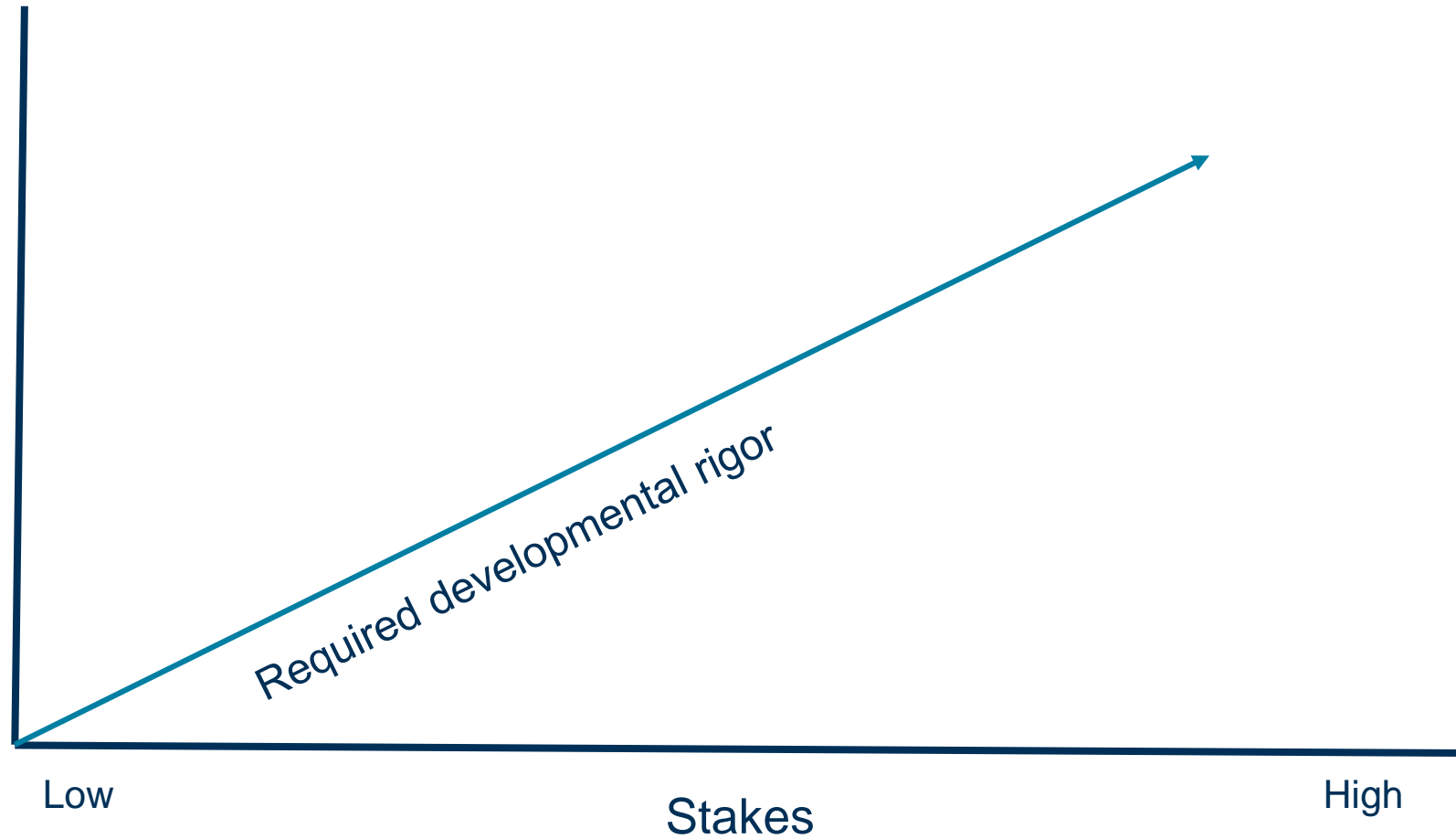
Criterion-referenced tests

Test taker performance is compared to a pre-determined criterion or standard

Why you're assessing determines how you assess

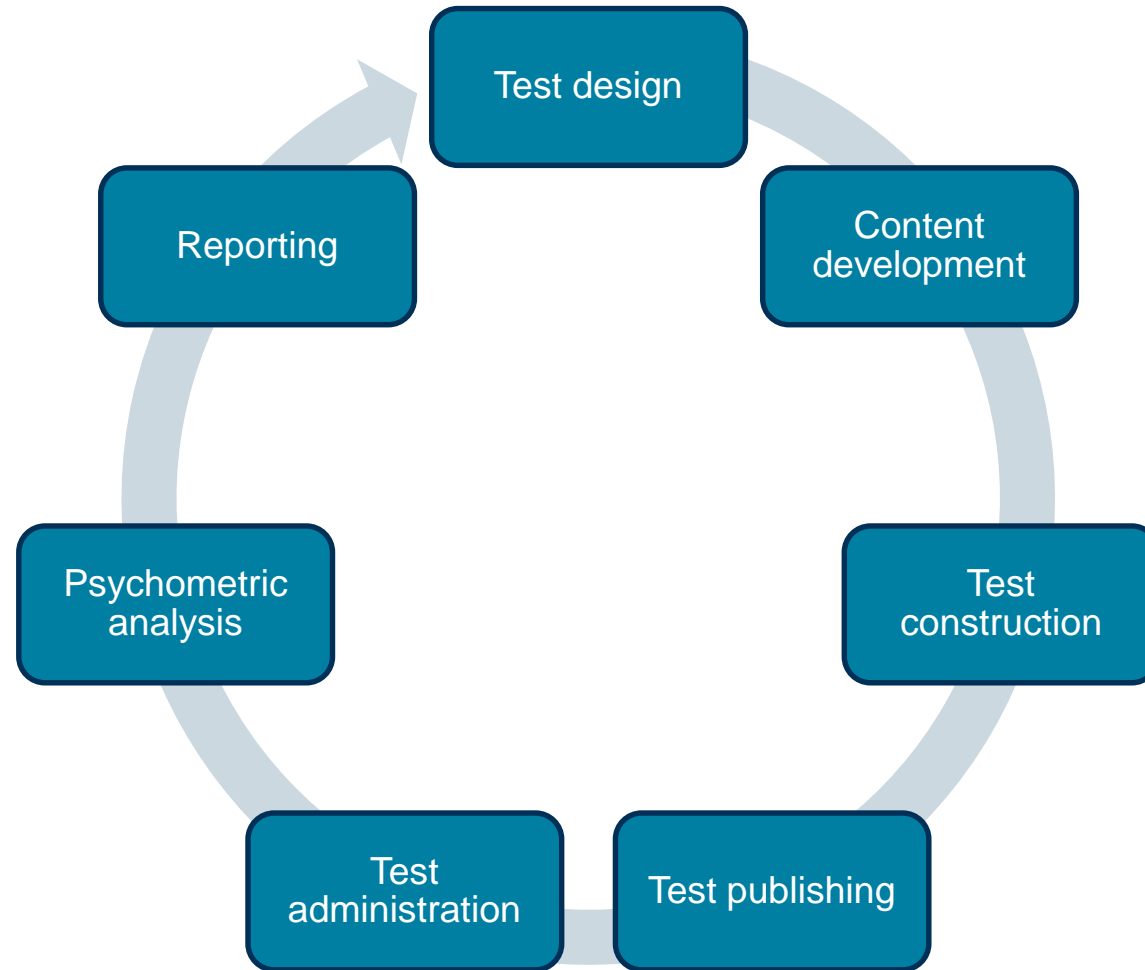


Why you're assessing determines how you assess

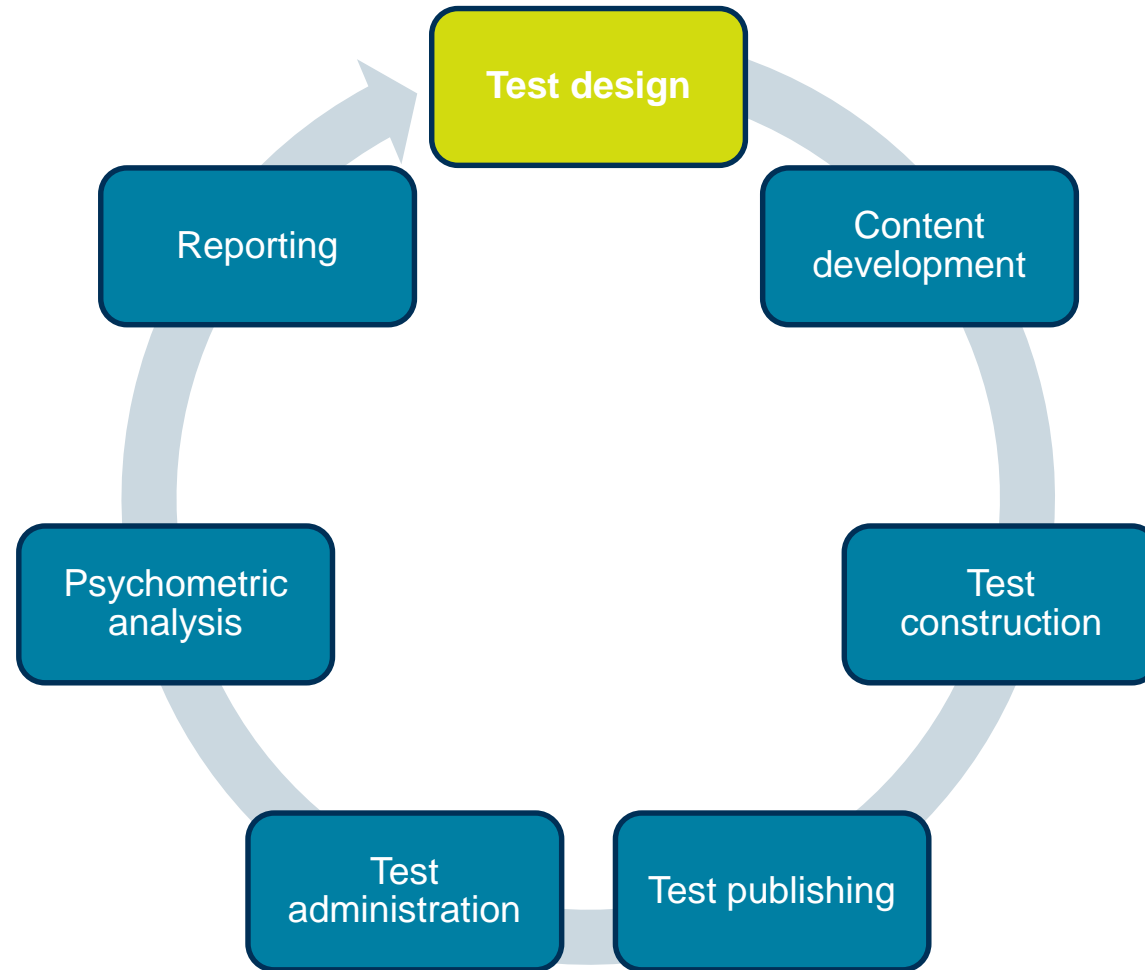


Creating fit-for-purpose assessments

Developing a high-stakes standardised assessment



Developing a high-stakes standardised assessment



Test design

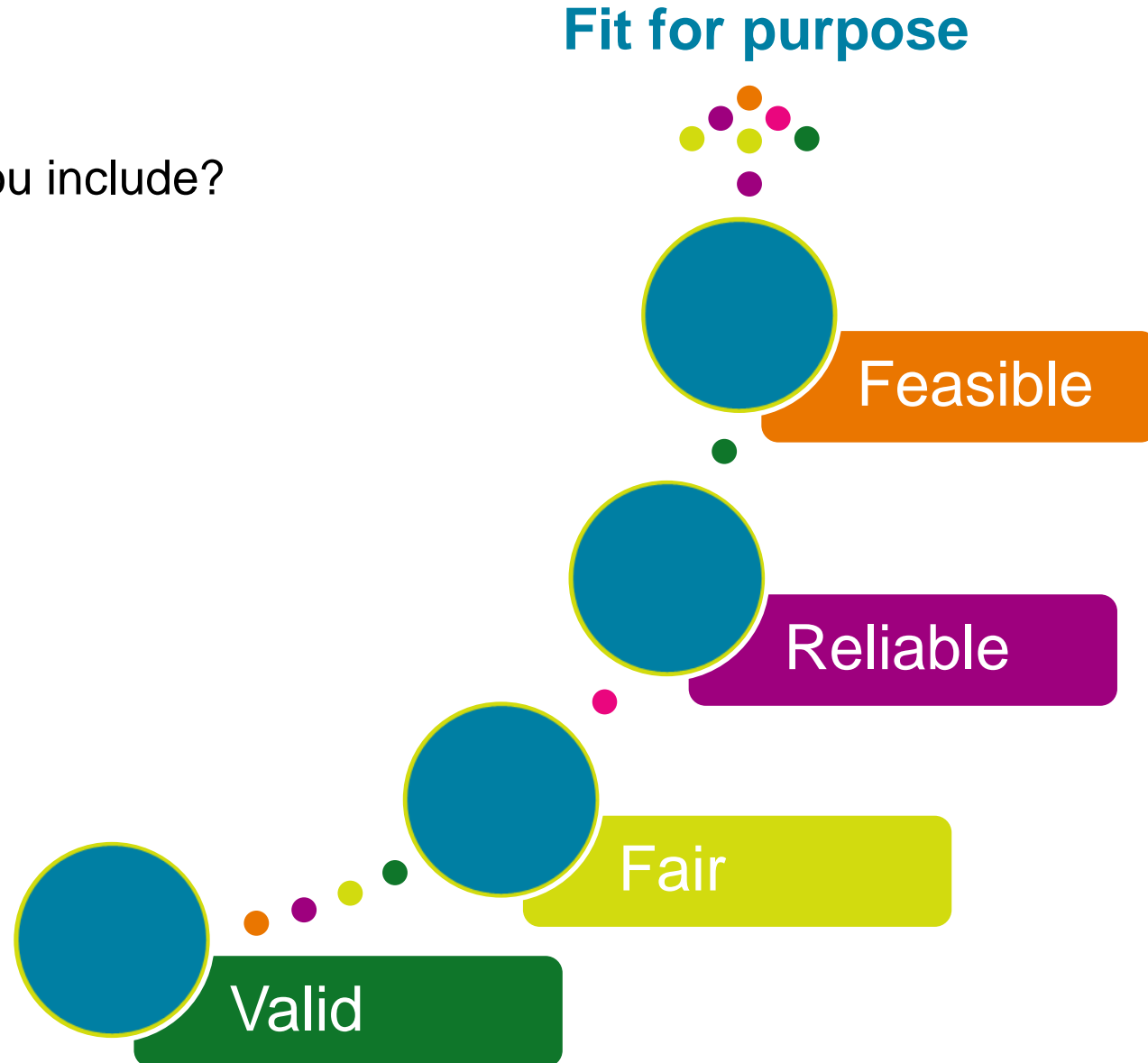
What assessment/item types will you include?

What scoring method will you use?

How will you develop the test?

How will you assemble the test?

Where will you deliver the test?



Test design: Constructs

Construct:

“the concept or characteristic a test is designed to measure”

~*The Standards for Educational and Psychological Testing* (2014), APA, AERA, & NCME

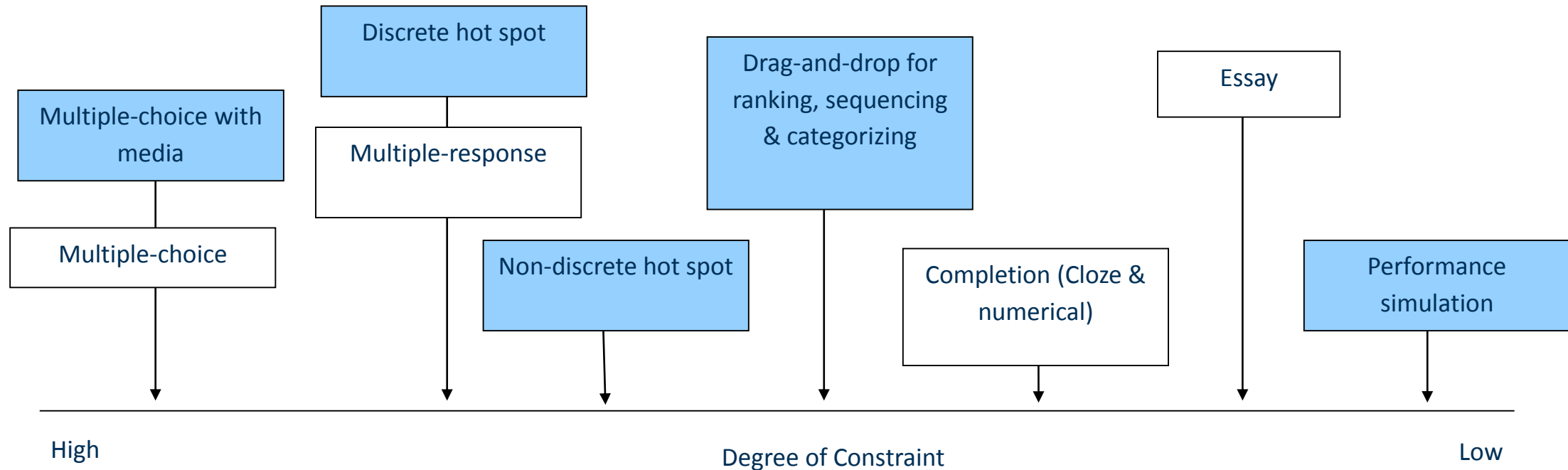


Developing a high-stakes standardised assessment



Content development: Item types

Continuum in flexibility of responding



Source: Parshall, C.J. & Brunner, B. (In press). Content development and review. In Davis-Becker, S. & Buckendahl, C. (Eds.), *Testing in the Professions*. Philadelphia, PA: National Council on Measurement in Education.

Content development: Item types


Continuum in richness of presentation stimuli



Multiple Choice Item - Single Select

What colour is the sky on a clear day?

- A. Blue
- B. Green
- C. Purple
- D. Yellow



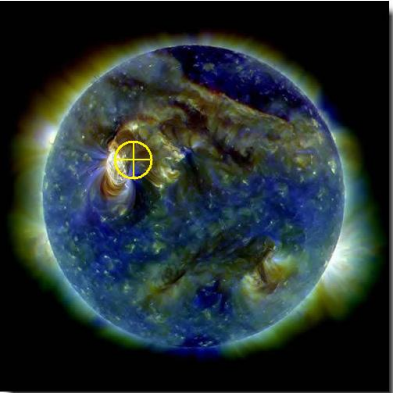
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Multiple-choice with graphics

Hot spot

Hot Spot Item - Single Select

Below is an image of the sun. Identify the region of high solar flare activity. Click on the image to indicate your selection.

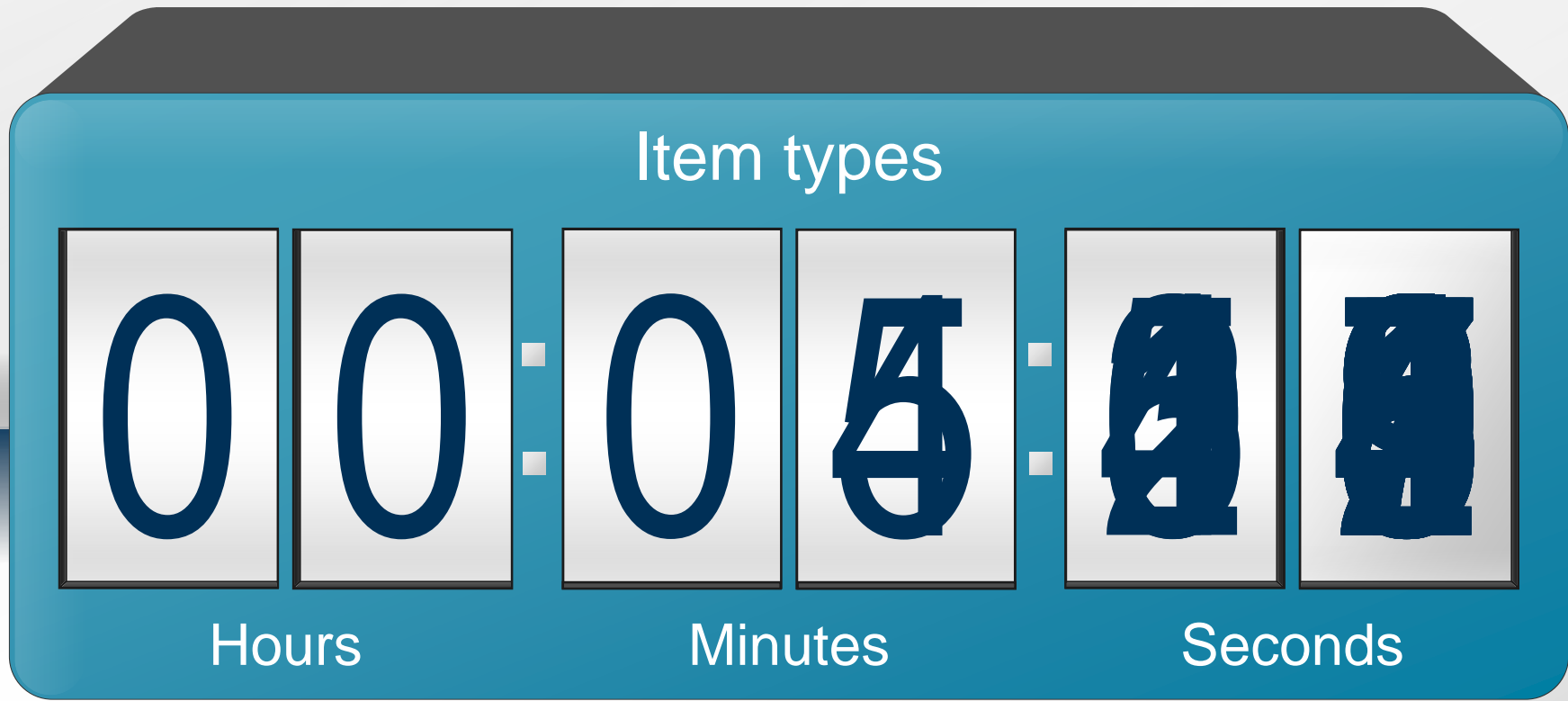


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Case study exercise

Your task: Brainstorm on potential test constructs that would be appropriately assessed by the following item types.

- Multiple-choice with graphics
- Hot spot
- Short answer (fill-in-the-gap)
- Constructed response (essay)



Summary: Validity

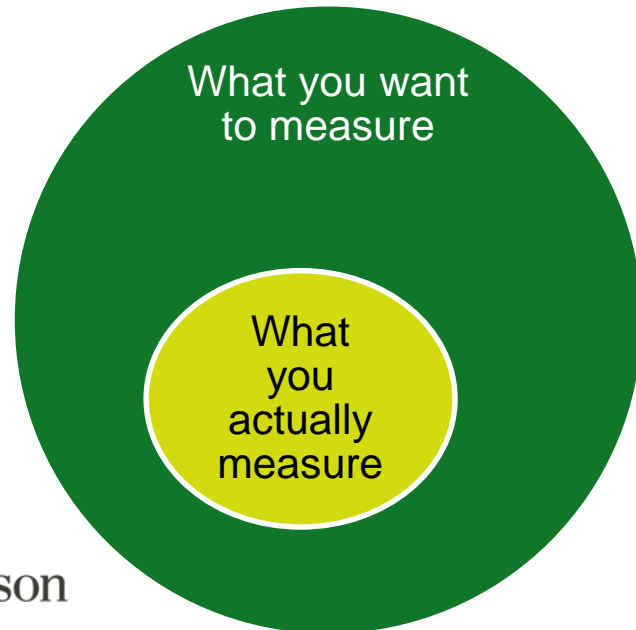
Tests are “imperfect measures of constructs because they either leave out something that should be included...or else include something that should be left out, or both”

~Samuel Messick, 1989, p. 34

THREATS TO VALIDITY

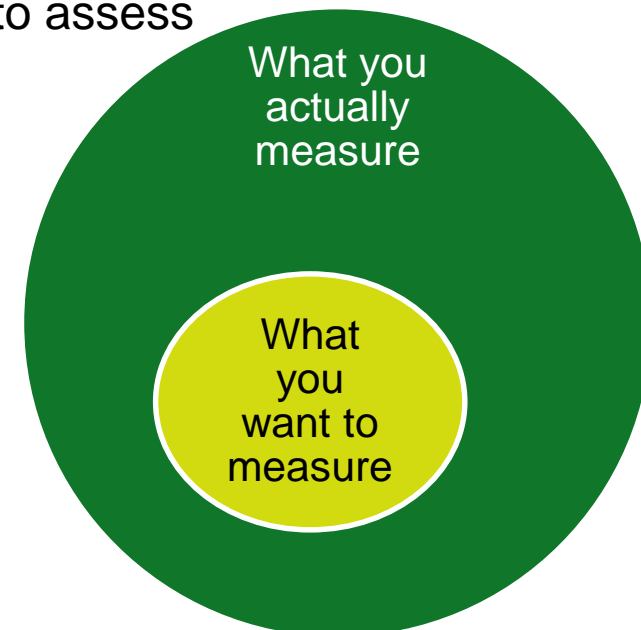
Construct underrepresentation

Content coverage is not adequate to generalise test taker performance to the construct in question



Construct-irrelevant variance

Some test scores are either inflated or suppressed due to extraneous variables that the test was not designed to assess



Closing thoughts

Closing thoughts: Assessing 21st century skills

- More immediate feedback & data to inform instruction (Scardamalia et al., Partnership, Looney)
- Wider breadth in what's assessed including knowledge, skills and attitudes of collaboration and self-directed learning (Scardamalia et al.)
- Assessment of ability to learn in knowledge-rich environments (Scardamalia et al.)
- Assessment of 21st century skills embedded within domain-specific assessments (Scardamalia et al.)
- Performance-based assessments occurring in authentic, dynamic environments (Scardamalia et al., Partnership)
- Means of assessment which makes student reasoning & thinking processes visible (Scardamalia et al., Partnership for 21st Century Skills, Looney)

Scardamalia, M., Bransford, J., Kozma, B., & Quellmalz, E. (2011). New assessments and environments for knowledge building. In P. Griffin, B. McGaw, & E. Care (Eds.), *Assessment and Teaching of 21st Century Skills*. New York: Springer.

Partnership for 21st Century Skills (2007). *21st century skills assessment: A Partnership for 21st century skills e-paper*. Retrieved 15 Sept 2016 from http://www.p21.org/storage/documents/21st_Century_Skills_Assessment_e-paper.pdf.

Looney, J. W. (2009), *Assessment and innovation in education*, *OECD Education Working Papers*, No. 24, OECD Publishing. Retrived 15 Sep 2016 from <http://dx.doi.org/10.1787/222814543073>

“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.”

~Alvin Toffler

Thank you!

