Diversity in Assessment: More than just Demographics

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What might diversity in assessment mean?

Healthcare education is a broad field, with students required to develop and demonstrate a wide range of skills. Achieving this involves:

- Diverse demographics
- Diverse forms of teaching sessions
- Diverse skills and knowledge
- Diverse assessment modalities, delivery systems, and assessors
- Diverse methods of standard setting
- Diverse experience among applicants, students, and staff

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Why is this important?

Assessment can seem deceptively simple.
But each of these elements adds complexity.

- How to ensure assessment drives learning
- Challenges of interprofessional education
- Allowing students to excel

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It's not about students figuring out how to pass,
But about us figuring out how to assess them.

How to ensure assessment drives learning

The impact of question type

Need to be clear on what you want to know – what is it you're asking the student to demonstrate?

Factual knowledge – single item recall and recognition
Knowledge integration – multi-part or diagnostic reasoning items
Clinical Skills – physical demonstrations
Teamwork – assessment by peers; assessment of the process not the outcome

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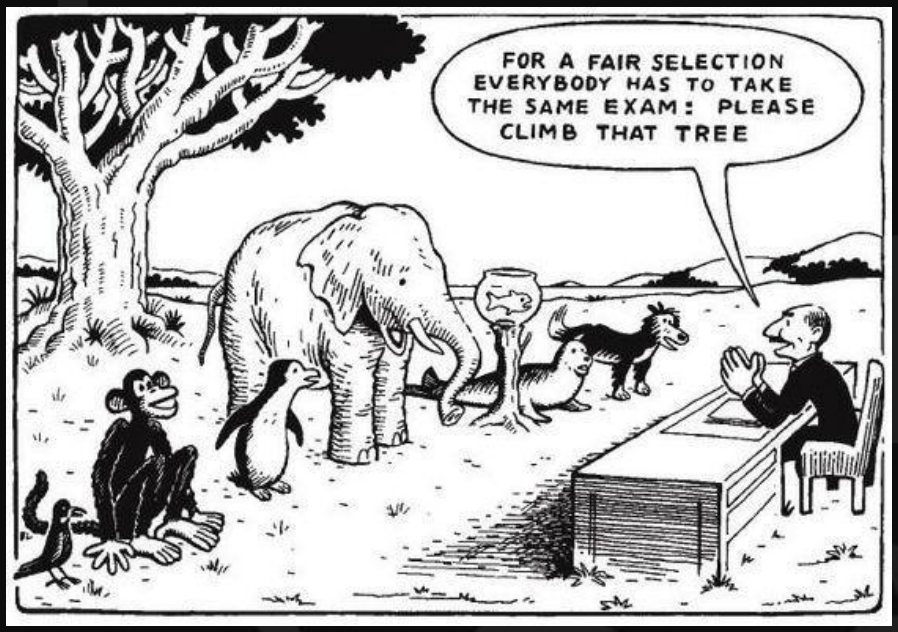
The effect of equity and equality



How many of us take this approach to our assessments?

The impact of question marking

Multiple Choice Questions (MCQ) are seen as low-effort and easy to administer, but decision about **how they are marked** and **how they are blueprinted** can impact how students approach their learning.

Single Best Answer (SBA) +/-negative marking – rote learning, discourage guessing
Elimination to give credit for partial knowledge – integrated, diagnostic knowledge

Proportional distribution of topics, tied to professional standards or learning outcomes, or an **adaptive blueprinting** based on prior performance – clear achievement of outcomes versus question spotting

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Encouraging Broad Learning

The middle meningeal artery…
(A) Enters the skull through the foramen
(B) Supplies the superolateral surface of it ipsilateral cerebral hemisphere
(C) Runs a subdural course within the cranial cavity
(D) Gives an interior branch which runs deep to the pterion

Single Best Answer
1 point if correct, otherwise 0

Negative Marking
1 point if correct, otherwise -0.25
(+/- zero for non-response)

Elimination Marking
1 point if correct, 0 if correct response eliminated, otherwise 1/*n* where *n* is the remaining options

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Same Scope, Same Standard

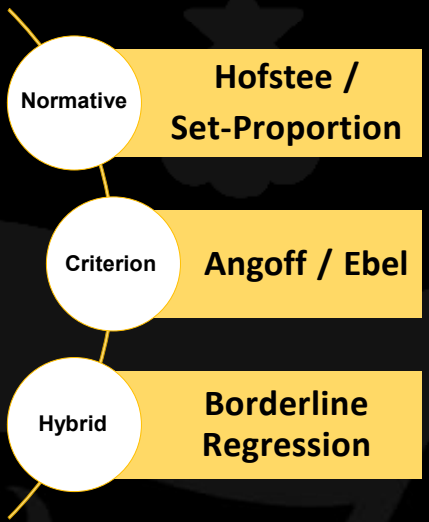
Challenges of Interprofessional Education

Standard Setting

Norm referencing only when relative ranking is important.

Criterion referencing when the standards are external to the cohort; and be willing to accept 100% pass and 100% failure rate.

Using **hybrid approaches** to address specific issues, such as assessor variability.



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Social Capital and Sociological Factors

Ensure your choice of items is measuring what you intend, not 'noise' from:

- Role models, 'insider knowledge', expertise among family and friends
- Cultural and social norms – peer pressure, experiences, affluence, 'class'
- Language skill
- Expectations of the students or the assessors
- Bias and stereotypes

Demographic analysis is not a catchall proxy for these considerations.

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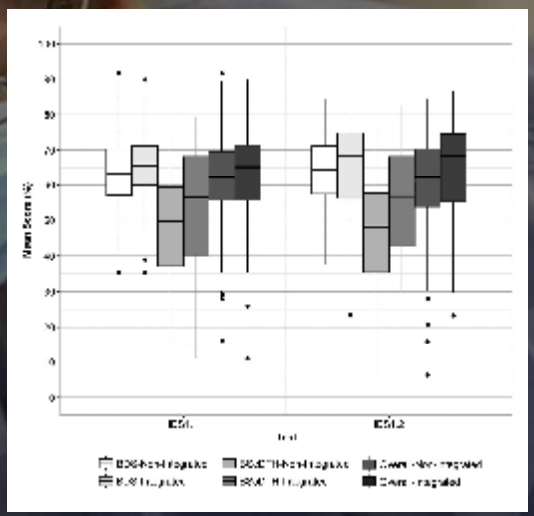
Benefits of Integration

Integrated Dental Science performance was significantly improved in BScDTH-BDS integrated cohorts.

Integrating students from different programmes for the teaching of core dental knowledge in enquiry-based learning settings and team environments improves student performance in subsequent dental science assessments; and particularly for BScDTH students.



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Zahra, Belfield, Bennett et al (2018)
doi: 10.1111/eje.12394

Widening access and increasing student diversity should drive better assessment

Allowing students to excel

Asking the right questions

Ensure assessments provide opportunities for students to show us what they know, what they can do, that they are excellent – not how familiar they are with an exam format or the subject specific language

This needs to be intrinsic, inherent in all aspects of our programmes, not just our assessments.

And conversely, don't be afraid to fail students who do not meet the required standards - Reframe this as an opportunity to help them develop.

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Use technology for a reason, not it's novelty

Online assessment platforms afford great flexibility in question format. Make use of the ability to mix and match question types and marking formats; MCQs, SAQ, hotspots, diagramming, ordering

Be mindful of the potentially discriminatory factors too though; access to quiet places to sit assessments, Wi-Fi quality, software and hardware requirements

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A New Curricular Outlook

Ensure all staff are understand the scope of practice for all students and are aware of any unconscious biases they may hold

Provide early remediation (transferable study skills and subject specific knowledge) if any science assessment scores are low

Provide a pre-enrolment course for prospective students who would like to improve their sciences before starting.

"I have enjoyed the first year integration of BDS and DTH students and have been learning a lot from this. Whilst also having acquired a good social group of friends who are on the BDS programme"

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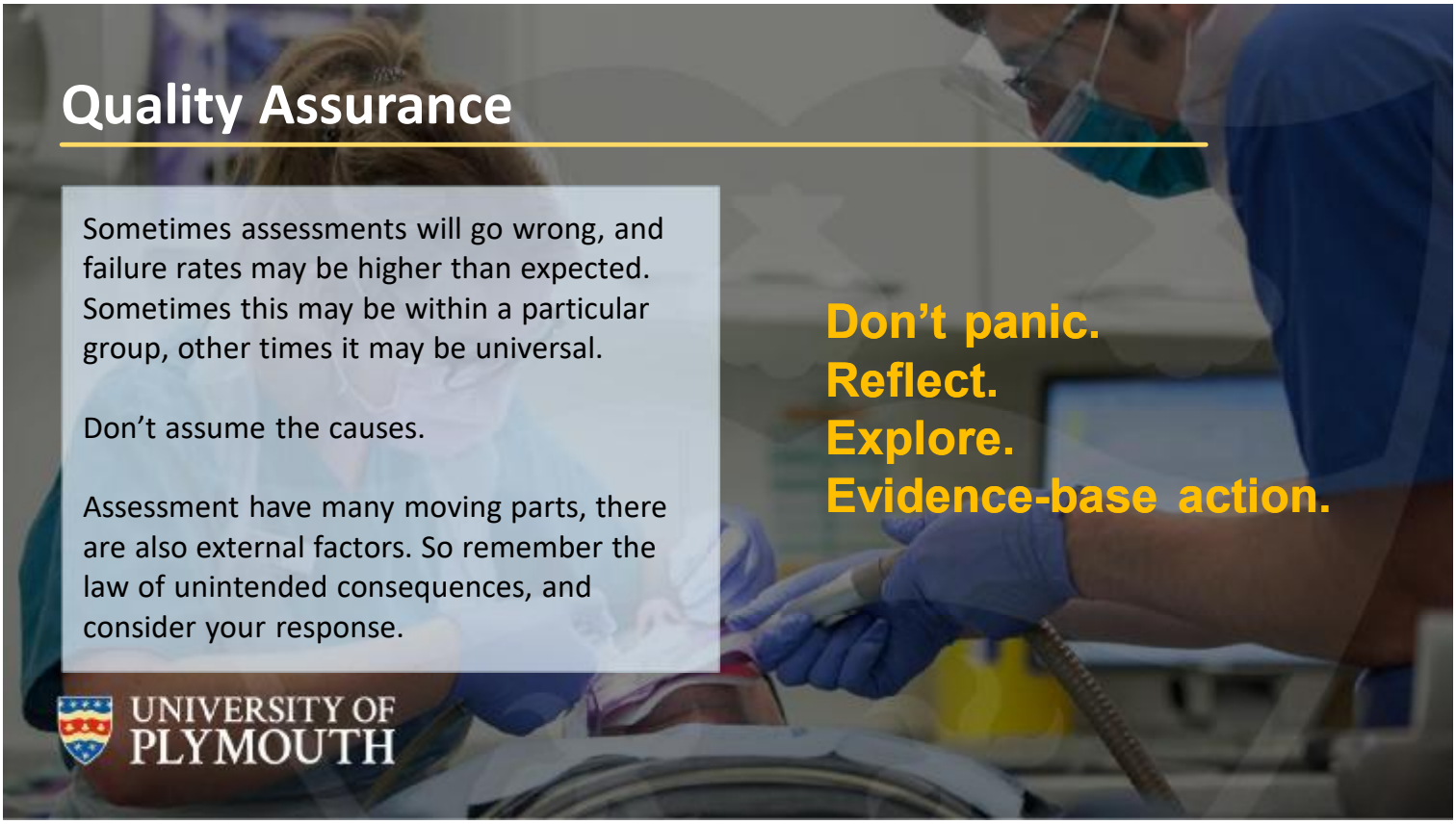
McIlwaine, Brookes, Zahra et al (2019)
doi: 10.1038/sj.bdj.2019.10



Quality Assurance

Sometimes assessments will go wrong, and failure rates may be higher than expected. Sometimes this may be within a particular group, other times it may be universal.

Don't assume the causes.

Assessment have many moving parts, there are also external factors. So remember the law of unintended consequences, and consider your response.

Don't panic.
Reflect.
Explore.
Evidence-base action.

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Summary

How to ensure assessment drives learning	Consider carefully what you want to measure and the best ways to measure it; reducing unwanted noise and inadvertent measurement of other factors
Challenges of interprofessional education	Creating a supportive environment where difference in background and experience is valued, not a discriminatory factor in assessments
Allowing students to excel	Provide students ample opportunity in myriad formats to show their skills and knowledge. They shouldn't be disadvantaged (or advantaged) by assessment format.

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Diversity is not just demographics

Multimodal assessment is key

All students can be excellent;
they just can't all climb trees


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