

# Assessment in secondary school

VALIDITY & RELIABILITY

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## Learning outcomes

- ▶ To consider changes that have been made to assessment in secondary school over last 30 years
- ▶ To reflect on the effectiveness of the examination system
- ▶ To consider the importance of validity & reliability

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## Why we assess?

- ▶ Accountability
- ▶ Certification
- ▶ To advance student learning

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### 3 issues

- ▶ Difficulties for teachers when planning and teaching externally examined classes
- ▶ Validity
- ▶ Reliability

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- ▶ Think back to own experience in secondary school/further education college.
- ▶ What did you think were the purposes of sitting exams?
- ▶ How did preparing for exams impact on your motivation as a learner?
- ▶ Did the teaching strategies of examination classes differ from non examination classes?

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- ▶ External assessments are summative assessments
- ▶ Two methods used:
  - ▶ Norm referenced
  - ▶ Criterion referenced

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## GCSE examination

- ▶ Introduced in 1986 to replace O level and CSE
- ▶ 8 pass grades – A\* - G
- ▶ Designed to test recall, understanding and skills.
- ▶ Tiered assessment to enable pupils to be entered for paper most appropriate for their current attainment.
- ▶ Tiered papers carry grade limits thus narrowing the opportunities of pupils

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## GCSE examination

- ▶ Teacher assessed coursework was introduced.
- ▶ In early days of GCSE some subjects were purely assessed through coursework.
- ▶ Has become restricted over the years and depends on the subject eg 60% in music, 25% in geography.
- ▶ Criticism of coursework?
- ▶ Plagiarism, parental involvement
- ▶ 2009 – controlled assessments introduced – research out of school but task completed in classroom

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- ▶ On 29 September 2011, the Deputy Minister for Skills, Jeff Cuthbert, launched a review of the current qualifications on offer in Wales.
- ▶ The Review of Qualifications for 14 to 19-year-olds in Wales aimed to ensure that we have qualifications that are understood and valued and meet the needs of our young people and the Welsh economy.

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- ▶ The Review of Qualifications for 14 to 19-year-olds in Wales, made 42 recommendations for improving the system.
- ▶ The review was based on a large body of evidence and on discussions with stakeholders and experts from across the UK and beyond.
- ▶ The changes are in line with these recommendations, and will deliver a high-quality and well-respected national qualifications system for Wales.

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- ▶ Qualifications Wales is the independent regulator of non-degree qualifications and the qualifications system in Wales.
- ▶ Established through the Qualifications Wales Act 2015, it started operations in September 2015

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- ▶ Qualifications Wales is responsible for regulating non-degree general and vocational qualifications in Wales, including GCSEs, A and AS-levels and the Welsh Baccalaureate.
- ▶ That means it ensures that examinations taken by students, and the qualifications they subsequently earn are fair, of the required standard and fit for purpose.

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## Changes September 2015 in Wales?

- New GCSE specifications introduced in these subjects:
- ▶ English Language
  - ▶ Welsh Language
  - ▶ Mathematics – Numeracy
  - ▶ Mathematics
- and revised GCSE specifications in these subjects:
- ▶ English Literature
  - ▶ Welsh Literature.

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## Which specifications were introduced in September 2016?

- New or revised specification in the following subjects:
- ▶ Art and Design
  - ▶ Biology
  - ▶ Chemistry
  - ▶ Drama
  - ▶ Geography
  - ▶ MFL: French, German, Music
  - ▶ PE
  - ▶ Physics
  - ▶ Food and nutrition

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# New specifications from Sept 2017

- ▶ History
- ▶ Religious Studies
- ▶ Design & technology
- ▶ Business
- ▶ Computer Science
- ▶ Media Studies
- ▶ Welsh second language

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# A levels

- ▶ Introduced in 1951
- ▶ Substantial changes over the years.
- ▶ Each A Level is composed of 4 units – 2 make up the AS course and 2 the A2 course.
- ▶ AS course seen as a bridge between GCSE and A2.
- ▶ A2 assesses depth and breadth of knowledge and understanding.

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# What is happening to A levels in Wales?

- A levels in Wales will:
- ▶ retain a similar AS /A2 structure to what we have now
  - ▶ reduce the contribution of the AS to the full A level from 50% to 40%
  - ▶ share the same content as A levels in England, where appropriate
  - ▶ retain practical or controlled assessments where they are assessing an important part of the subject with these assessments contributing towards the final grade
  - ▶ include a Welsh perspective where appropriate.

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- Qualified for Life; How qualifications are changing in Wales.

#### TASK

- Pros and cons of changes to English & maths

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- <http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2014-15/Sams/Maths%20WG/SAMs%20%20Mathematics%20-%20Numeracy%20papers/Mathematics%20-%20Numeracy%20Unit%201%20Higher%20question%20paper.pdf>

- Numeracy paper

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- <http://www.walesonline.co.uk/news/education/first-results-wales-new-maths-12476458>
- When the first results from Wales' TWO new Maths GCSEs were published in 2017, most students got D or below.  
Wightwick, A (2017)
- Latest figures <http://www.bbc.co.uk/news/uk-wales-42650006>

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## The Credit and Qualification Framework for Wales (CQFW)

- ▶ recognises all learning - all subjects at all levels.
- ▶ It includes learning that takes place in school, college, university, work based learning, youth, sports and cultural activities in the community.
- ▶ There has been transformation in the way young people are educated with the new qualifications that are available. Wider choice and flexibility means that young people will gain recognition in a range of ways that will be valued by universities, colleges and employers.

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- ▶ The Credit and Qualifications Framework for Wales includes all vocational qualifications - you may know some of them as BTEC awards, NVQs, or City and Guilds etc.

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## Vocational qualifications

All vocational qualifications have a level and credit value which:

- ▶ allows learners to build up qualifications through completion of units – this will motivate and encourage some learners
- ▶ motivates learners of all ages and helps them to acquire the skills and qualifications that meet employers needs and
- ▶ provides a way to recognise work based learning and training that can be assessed and given a credit value.

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The Credit and Qualification Framework for Wales benefits learners by:

- ▶ recognising and valuing achievements
- ▶ assisting progress in education and employment across the UK, and Europe
- ▶ making it easier to transfer knowledge and skills between careers and providers of education and training
- ▶ allowing you to accumulate credit and qualifications to meet a range of career and personal development needs.

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- ▶ CQFW allows comparison of all types of qualifications and learning achievements at all levels. The fan diagram on the next slide illustrates that range with some examples.

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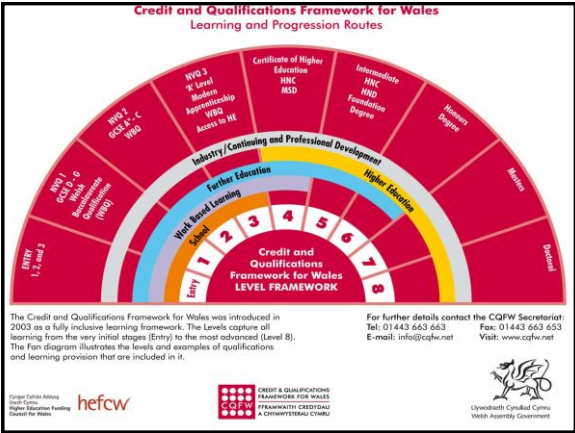
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## Validity & reliability

- ▶ Central to an understanding of assessment processes.
- ▶ For all external assessments, frameworks of regulations have been developed to ensure that the examination process and the results produced are both valid and reliable.
- ▶ Since 2011 the Office for Qualifications and examinations regulation (Ofqual) is the government agency that approves course specifications and monitors examinations.

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## Test Validity

Kane 2006, Stobart 2009 ( in Gardner 2012)

1. Validity is based on the purpose(s) of an assessment and how effectively the interpretation and use of the results serve each purpose
2. It is concerned with how effectively the construct/domain being assessed is being sampled
3. Reliability and fairness are part of validity. Unreliable results undermine confidence in their interpretation, unfairness will also lead to misinterpretation of results

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## Validity defined

Construct validity includes:

- ▶ Face validity
- ▶ Content validity
- ▶ Predictive validity
- ▶ Validity through authenticity

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## How is this done?

- ▶ Scrutinies
- ▶ Comparability exercises

## Awarding bodies

- ▶ Assessment & Qualifications Alliance (AQA)
- ▶ Edexcel
- ▶ Oxford Cambridge and RSA examinations (OCR)
- ▶ WJEC

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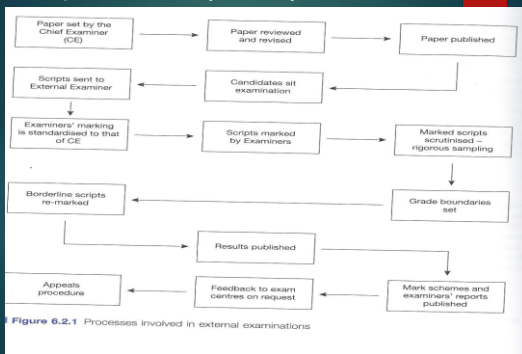
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## Capel et al (2013)




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## Issues regarding validity

- ▶ Incorrect or difficult wording can lead to learners performing activities that do not match course objectives
- ▶ Missing out content and/or objectives
- ▶ Insufficient resources
- ▶ A lack of consistency between teachers/trainers

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# Assessment reliability

- ▶ Key word: consistency
- ▶ Learners' view
- ▶ Markers' view

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# Checklist for reliability

- ▶ Agreement of markers/examiners
- ▶ Consistency between students' work and markers' or examiners' grades
- ▶ Consistency between learners' grades or marks irrespective of where or when they sat the examination/test
- ▶ Clear and inclusive language
- ▶ Environment will not affect the process
- ▶ Learners will not have been coached

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# Issues affecting reliability

- ▶ Classroom/physical environment
- ▶ Structure of assessment activity
- ▶ Consistency in marking/examining/assessing
- ▶ Motivation of the learner
- ▶ Construct under-representation
- ▶ Construct-irrelevance variance

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## Teaching externally assessed courses

- ▶ Pupils need to be able to respond to any assessment that takes place
- ▶ Teachers need to be fully aware of the nature of the external assessment which pupils are being prepared for
- ▶ Important though not to just 'teach to the test'
- ▶ Need to be familiar with subject content as well as types of questions set and language used.
- ▶ Pupils need to understand – summarise, explain, compare & contrast etc

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## Black & Wiliam (2012) The reliability of assessments

- ▶ What is construct validity and how does it relate to purpose?
- ▶ What is, and what are the main sources of construct irrelevance variance?
- ▶ What can be done to limit variability amongst markers' (raters') responses?
- ▶ What are the pros/cons of tiered tests?
- ▶ Why are issues of reliability so important for educators?

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- ▶ <https://www.tes.co.uk/teaching-resource/Teachers-TV-Testing-and-Assessment-6083944>
- ▶ The big debate – testing and assessment
- ▶ <https://www.tes.co.uk/teaching-resource/Teachers-TV-Raising-Standards-English-Departments-6084284>
- ▶ Raising GCSE standards English dept

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- ▶ <https://www.tes.co.uk/teaching-resource/Teachers-TV-Assessment-for-Learning-Holgate-School-6047450>
- ▶ Using formative assessment to improve summative assessment.

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## Reference List

- ▶ Gardner J (ed) (2012) (2<sup>nd</sup> ed) *Assessment & Learning*, Chpt 15 p243 – 264 The Reliability of Assessments London: Sage
- ▶ Capel S., Leask M. & Turner T. (Ed) (2013) (6<sup>th</sup> ed) *Learning to Teach in the Secondary School*, London: Routledge.
- ▶ [learning.wales.gov.uk/docs/learningwales/publications/14-0416-qualified-for-life-how-qualifications-in-wales-are-changing-en.pdf](http://learning.wales.gov.uk/docs/learningwales/publications/14-0416-qualified-for-life-how-qualifications-in-wales-are-changing-en.pdf)
- ▶ Timmons J (2011) (3<sup>rd</sup> ed) *Assessing Learning in the Lifelong Learning Sector*, Exeter: Learning Matters
- ▶ GCSEs from Sept 2015 (WJEC) <http://www.wjec.co.uk/supporting/qualification-reform-wales/gcse-from-2015/>
- ▶ GCSEs and A level information <http://qualificationswales.org/Range-en>

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- ▶ Wightwick, A (2017) *The first results from Wales' TWO new Maths GCSEs were published today (and most students got D or below)* **WALES ONLINE** Available at: <http://www.walesonline.co.uk/news/education/first-results-wales-new-maths-12476458>

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