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Improving education and assessment – principles and practice in national and international context

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Agenda

▸ High performing jurisdictions

▸ Educational reform

▸ Standards

▸ Effecting educational reform

▸ Assessment as a force for change

▸ Purposes of assessment

▸ Assessment frameworks

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Characteristics of high performing jurisdictions

➤ High performing jurisdictions have a good 'ecosystem', everything works in balance and is very much dependent on context, form, history and culture.

➤ 'High performance' is the result of complex interactions of elements which take on a distinctive form that produces positive outcomes in a jurisdiction.

➤ Interactions are very complex, but they are aligned, they are balanced and they interact beneficially.

➤ Curriculum coherence is a key feature – the two senses of 'coherence'

- *System alignment – administrative/governance focus/models/frameworks*

- *Curriculum construct, sequencing and balance – psychological-educational focus*

➤ Have 'big ideas' for educating the young people that drive 'system transformation', have high expectations that are well supported and are well understood and socialised in implementation.

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Evolution of Singapore's education system

▸ **In tandem with economic development & nation building** – *how the examinations are being influenced by curriculum changes and also how examinations have in turn influenced teaching and learning.*

Innovation driven

Student-centric, values-driven from 2012

Knowledge based

Ability-driven 1997–2011

Skills intensive

Efficiency driven 1979–1996

Industrialisation

Survival driven 1959–1978

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Discussion – educational reform

Consider an educational reform project that you are familiar with.

▸ What were the aims of the project?

▸ Was there a 'big idea'?

▸ What were the factors
that influenced the success,
or otherwise, of the project?

Effecting educational reform

▶ Based on good international reference points – i.e. they were evidence-based reforms and made changes only where justified.

▶ Unnecessary disruption to the education system was avoided, i.e. there were clear, well thought through drivers, and 'change' was managed.

▶ Reforms had clear vision, which were well communicated.

▶ There was good governance and sensitive policy formation – timelines were realistic, and there were development, implementation and evaluation strategies.

▶ Change processes were managed – change absorbs resource in both development and implementation.

▶ The relationships between control factors were examined – these are complex; one factor was not adjusted without considering the effect on the others.

▶ Teacher training, development and support was provided.

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Case study – Scotland Curriculum for Excellence

PRE-REFORMS

➢ Achievement in Scottish schools was above international averages – but the gap was narrowing.

➢ OECD expressed concerns over attainment and progression.

➢ Particular concerns were raised about maths where performance had fallen from high to average over the past decade.

➢ The primary school curriculum did not prepare students particularly well for lower secondary school.

➢ The lower secondary curriculum did not prepare students particularly well for 14 to 16 qualifications

➢ There were two different sets of 14 to 16 qualifications, and neither of these provided appropriate progression to the 16 to 18 qualifications.

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Curriculum for Excellence – aims

➢ Provide a coherent, flexible and enriched curriculum from 3 to 18.

➢ Equip learners with four key 'capacities' – successful learners, confident individuals, responsible citizens and effective contributors.

➢ Provide a new 3 to 15 curriculum – to maximise progression through the curriculum and onto qualifications and provide more personalisation and choice.

➢ Give schools more autonomy – e.g. in curriculum structure, teaching programmes (especially in secondary).

➢ Give teachers more flexibility over what and how they teach.

➢ Provide a set of 15 to 18 qualifications – build on strengths of old qualifications and maintain high standards and credibility

➢ Assessments to have more focus on skills refreshed & relevant content.

Discussion – reforms and organisational alignment

Read the 'Actions Required' sections, look at how the scope, roles and responsibilities of each organisation are described.

▸ How useful do you think these sections are in describing the roles and responsibilities of key organisations and how they should interact?

Evaluation – Curriculum for Excellence

OECD Report (2015) – found 'much to be positive about', including:

➢ Levels of academic achievement are above international and other UK jurisdictions, averages in science and reading, but not maths.

➢ Achievement levels spread relatively equally.

➢ Scottish schools do very well on measures of social inclusion and mix.

➢ Immigrant children generally perform better than their non-immigrant peers.

➢ A large majority of students feel positive about their school and teachers.

➢ Nine in ten school leavers enter a 'positive follow-up destination and two-thirds stay in education.

But

➢ 20% of schools are rated only 'satisfactory' and 10% are 'weak or unsatisfactory'.

➢ There is still some confusion about the high level aspects of the reforms.

➢ Assessment results are often not used to improve pupils' learning progress – and a lack of clarity over what should be assessed.

➢ Assessment arrangements do not provide sufficiently robust information, whether for system-level policy-making, or for local authorities or an individual school.

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Use evidence from international research and best practice, for example …

- ## Curriculum coherence
  - ➢ Schmidt and Prawat; Oates; Trends in International Mathematics and Science Study (TIMSS)

- ## Detailed scrutiny of arrangements
  - ➢ Organisation for Economic Co-operation and Development (OECD); Reynolds and Farrell; Nisbet; Sahlgren; Cambridge abroad

- ## Sound theory on the operation of education 'arrangements'
  - ➢ Bhaskhar; Sayers; Raffe

- ## International comparisons
  - ➢ Using international comparisons to refine the National Curriculum (Oates): Ofqual; Schmidt & Prawat, Raffe, Coles, Reynolds, OECD, Sahlgren

- ## Consideration of national and international datasets
  - ➢ Programme for International Student Assessment (**PISA**); Trends in International Mathematics and Science Study (**TIMSS**); Progress in International Reading Literacy Study (**PIRLS**); National Pupil Database (**NPD**) assets

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Discussion – standards

To be high performing means to have 'high standards'

What do we think is meant by the term standards?

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… standards internationally

The term is used differently

➢ USA – standards viewed as content and attainment and aptitude measured by psychometric tests.

➢ China – standards viewed as ideas and incentives for continuous improvement, but do not use year-to-year standard.

➢ East Asia – clear learning outcomes and goals.

➢ Europe – the idea of teachers' judgment of student learning standards pervades.

➢ UK – standards (and accountability) of examinations important (both between subjects and over time).

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Curriculum aligned examination standards

➢ **Content standard**

- What has to be learned (i.e. the curriculum)?

  - does **not** include concept of demand or difficulty

➢ **Demand standard**

- How demanding are the tasks (in terms of the skills and knowledge that are required)?

  - does **not** include concept of the level of performance required

➢ **Awarding standard**

- The quality of performance required (e.g. for a grade/pass)

➢ **Attainment standard**

- How prepared for further study/employment?

  - politicians say that they want to 'raise standards'

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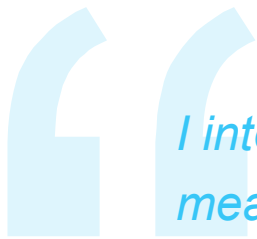
*I interpret the phrase 'educational standards', in the widest sense, to mean the **quality of educational provision**, and I take that interest in monitoring of such standards is motivated by a desire for valid information upon which to base policies intended to improve that quality.*

*Despite being concerned only with some of the objectives of education, public **examinations play a major role in defining and monitoring standards** because their result are often used as output measures for accountability.*

Public examination standards therefore underpin much of the debate about educational standards generally and, indeed, are themselves the focus of controversy.

Mike Cresswell

(The British Academy, 2000)

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Effecting educational change

▸ There were means of capturing and disseminating good practice.

▸ Textbooks were used as mediating instruments/steering elements.

▸ Construct precision, balance and secure age-related sequencing.

▸ Learning model – e.g. with a focus on 'fewer things in greater depth'.

▸ Also, strategies were in place to ensure things were taught properly the first time around.

▸ Assessment 'wash-back' was used effectively to drive educational change.

▸ An assessment framework was developed – with a sound construct, clear purposes for each assessment and good alignment and optimisation.

▸ It was clear how assessment results would be reported, and used.

▸ Formal assessment methodologies were effectively used in teaching practice.

▸ Assessment complemented pedagogy and aligned with the curriculum.

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Assessment as a positive force for change

Assessment aligned to curriculum

▸ Assessment grounded on key principles – valid, reliable, fair
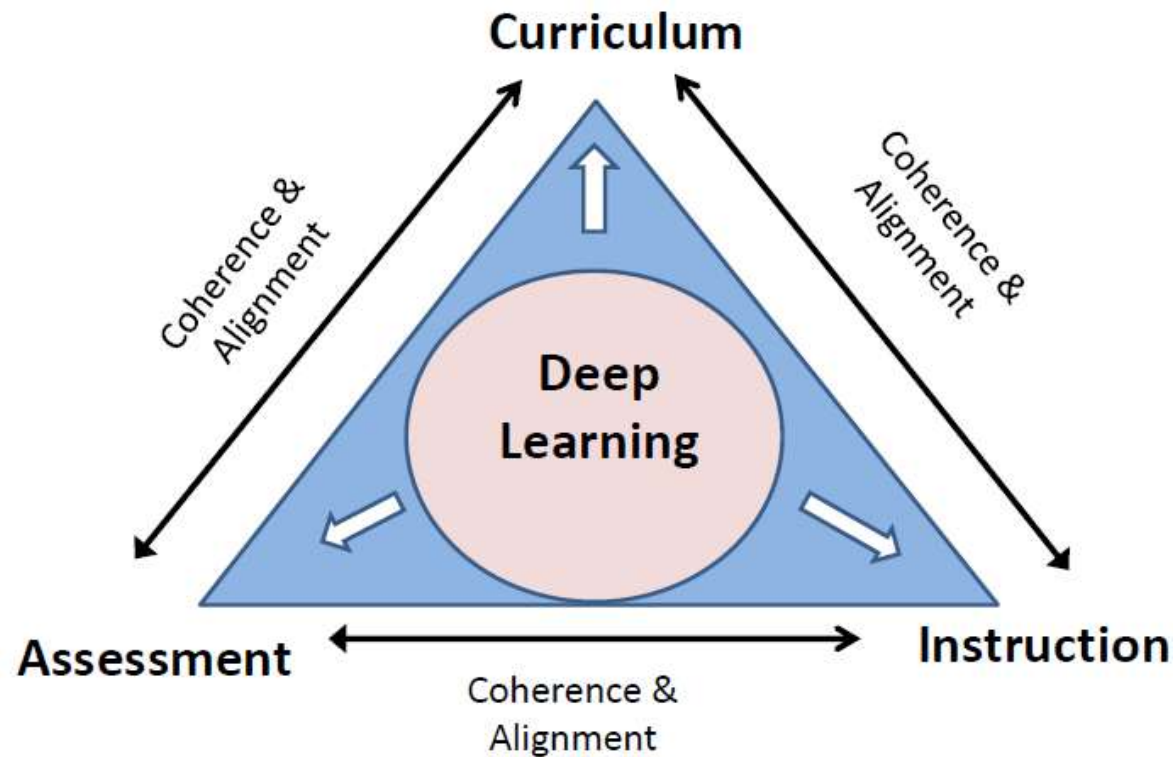
" When considering optimal design characteristics for future assessment systems it is necessary to bear in mind the underlying purposes of those systems. The fact that a system which is fit for one purpose will not necessarily be fit for all purposes is a fundamental consideration when evaluating the legitimacy of proposals. It is one of the most important messages for policy-makers to understand. "

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The intended purpose of assessment

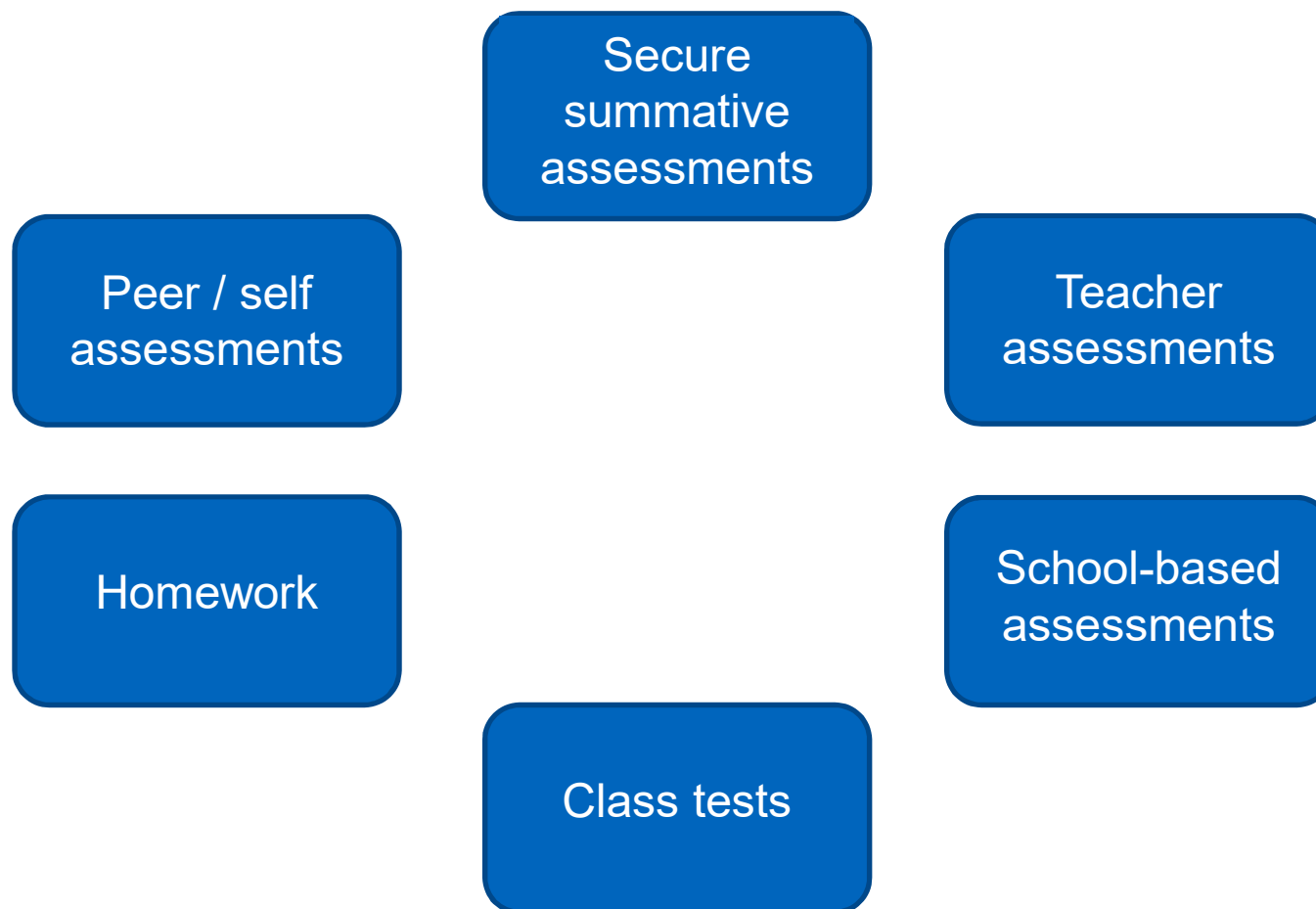|	Category of purpose/use	Typical user group	Decision, action or process supported by assessment results	Illustrative comment on characteristics of assessment results (assessment design implications)
1	Formative	Students, teachers, parents	Individual (or aggregated) results are used to identify student (or group) learning needs, to direct subsequent teaching and learning.	Frequent, fine-grained analyses of attainment in small sub-domains will typically be required to guide interventions for individual students, and reporting will often occur through verbal feedback.
2	Student monitoring	Students, teachers, parents	Individual results are used to decide whether students are making sufficient progress in attainment over time [sometimes linked to performance targets for students].	Results need to be particularly reliable, across the full range, given the threat of error at both the earlier and the later assessment points.
3	Transfer	Teachers	Individual results are used to tailor educational provision to the general educational needs of students who transfer to new classes/schools.	Where transfer to a new teacher occurs, results need to be expressed in a 'language' which can easily be shared, i.e., detailed, with common criteria and procedures for grading (see Black, 1998, p. 28).
4	Placement	Teachers	Individual results are used to place students in teaching groups, or educational programmes, that will be most suitable for them [the decision over which tier to enter a student for, within a multi-tiered examination, might be viewed as a special case of placement].	Reasonable reliability is required, since the decisions have potentially high stakes for students, although—where placement decisions are revisited fairly frequently—reliability may be lower since misplacement can be rectified.
5	Diagnosis	Educational psychologists	Individual results are used to diagnose learning difficulties.	Diagnostic assessment can lead to radical intervention (and potential stigmatization for those labelled with learning difficulties) which means that high validity and reliability are very important.
6	Selection	Admissions tutors/officers, employers	Individual results are used to predict which applicants—all of whom might, in principle, be sufficiently qualified—will be most successful in a job or course of instruction (and, consequently, provide a basis for choosing between them).	Results need to discriminate reliably across the full range, particularly where different courses/jobs tend to select between students from different ability ranges.
7	School choice	Parents, students	Aggregated results are used to identify the most desirable school for a child to attend.	Aggregated results must be sufficiently reliable to detect real differences in effectiveness between all schools (and must be accompanied by reasonable estimates of 'chance' variability which are sufficiently straightforward for all users to understand)

What is assessment?

- Assessment is an essential tool in supporting and evaluating learning and needs to be an integral part of the learning and development process.

- The insight gained from monitoring learners' progress through classroom assessments enables learners, teachers and parents to monitor and recognise progress, while allowing teachers to plan teaching appropriately to meet learners' needs.

- Assessment models can range from low stakes, classroom-based tests or question-and-answer sessions to high stakes, certificated examinations. Each of these models has a different purpose and to be effective the assessment design should match their intended purpose.

- Assessments should be linked to each other and have a clear relation to the next step in a learning pathway in a subject. They should not be seen as stand-alone experiences.

- The information about learning that is gained through an assessment should have a direct impact on what happens next in the teaching and learning process.

Discussion – purposes of assessment

Consider a set of assessments you are familiar with.

➢List the purposes of these assessments

Coherence of assessments

Secure summative assessments

Peer / self assessments

Teacher assessments

Homework

School-based assessments

Class tests

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What is an assessment framework?

- Frameworks are tools that provide a strategic overview to underpin developments and help focus thinking and evaluation.

- Assessment frameworks describes all the different types of assessment that learners will experience as they move through a stage of learning in a subject.

- It is more than a list of tests and examinations. It presents clear descriptions of the assessment approaches which apply throughout the teaching and examination of a subject.

- The framework states clearly the aims and purposes of each type of assessment and shows how the different assessments link together and interact with each other.

- An assessment framework also shows how the results of assessments and the data generated by them will be used to support the next stage of learning.

Purpose of an assessment framework?

- An assessment framework is a key tool in communicating policy and practice to all stakeholders in an education system, and can help ensure public confidence in the system.

- Producing an assessment framework is a consultative and iterative process, ideally involving stakeholders at all stages.

- The assessment framework contains a clear statement of purpose for the assessment. This describes what the tests and examinations are meant to achieve. Validity in any assessment system depends on declaring a clear purpose, developing materials and processes that serve this purpose, and ensuring, as far as possible, that users use it for the intended purpose.

- The assessment framework clarifies the principles and theory behind different approaches towards effective assessment in each subject. Different subjects require different approaches to assessment and this needs to be considered carefully when developing a framework.

- Assessment frameworks directly support the adoption and development of practical approaches in schools. They set out expectations within a level in a subject and help schools to plan and deliver learning programmes accordingly, and are useful tools in managing a period of curriculum change or reform.

- Developing an assessment framework helps to identify where transitions within and between subject programmes are well supported as well as showing where greater cohesion is needed.

- Assessment frameworks can be used to inform future development of programmes or qualifications ensuring that they have a place in the wider provision for the subject, and that assessment has a clear role and purpose in the learner's progress through the subject.

- An assessment framework may also help inform innovations in assessment, such as the development of digital or computer-based assessments.

What makes an effective assessment framework?

- An effective framework sets out the aims and purposes of assessment, with the theory and principles behind the approach clearly articulated. This facilitates the creation of fit-for-purpose assessments in a subject.

- The framework should present a variety of assessment types, ranging from periodic classroom tests, to end-of-stage tests or examinations.

- An effective framework sets out clear expectations of learners and aligns with curriculum goals, pedagogy, educational standards and assessment outcomes. It supports teachers' understanding of effective assessment practice and promotes the sharing of standards and expectations, leading to more consistent and reliable assessment.

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Discussion – features of assessment

	Classroom tests	End of year tests	Formal externally graded tests (e.g. IGCSE)
Declared purpose			
What they are actually used for			
How the tests are administered			
Frequency and timing			
Assessment outcome			
Learning outcome			
Threats to validity			

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Example assessment landscape

The Cambridge approach to educational reform

▸ We use our considerable transnational expertise studying high performing jurisdictions and experience in carrying out national educational reforms.

▸ We do **not** offer readymade solutions – rather we offer observations from international comparisons, and insights into how best to learn from these.

▸ We do **not** borrow or 'cherry-pick' polices or initiatives – national settings, strengths, drivers and challenges and cultural history and development are all different.

▸ We first work first to understand local structures, forms and context, and control factors and their interrelationships before suggesting/developing solutions.

▸ We encourage 'policy learning' – in context, addressing local challenges and priorities (which need to be shaped and conditioned) and judgement is required.

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The Cambridge approach to educational reform

▸ We always work collaboratively and believe in skills transfer and close working with partners. This is crucial to the way we work and to achieve effective change.

▸ We understand the challenge of large-scale educational reform and change – reform needs clear drivers and also needs to think about appropriate incentives.

▸ System capacity for change has to be considered; change has to be managed, change absorbs resource and requires resource.

▸ Preservation of curriculum coherence requires judgment, understanding of local conditions and good governance (including monitoring and evaluation).

Underpinned by theory, methodological sources and antecedents

➢ Archer – change in educational systems

➢ Green – origins of the form of educational systems

➢ Raffe – country comparative theory

➢ Bhaskar – understanding social systems – critical realism

➢ Philips and Ochs – educational policy borrowing

➢ Alexander – deep understanding of national systems and role of culture

➢ Morris – motivations and practices in international comparisons

➢ Stigler and Stevenson – comparisons of teaching models

➢ Schmidt and Prawat – curriculum control and curriculum coherence

➢ Oates and Coles – function of qualifications and assessment

➢ Sahlgren and Oates – critique of previous work on Finland

➢ OECD, TIMSS, PIRLS – large transnational surveys

➢ Reynolds and Farrell – causal analysis of different systems

Thank you
Any questions?