

# Assessment and rapid school improvement



CAMBRIDGE ASSESSMENT



UNIVERSITY *of* CAMBRIDGE  
Local Examinations Syndicate

Tim Oates  
Group Director  
Assessment Research & Development

**The latest ‘research’ – be very sceptical**

**Evidence-based, systematic, structural and sustainable**

**Past papers**

**AFL**

**The latest on line assessment facility**

**More assessment of a different kind**

**Development of assessment policy**

**Rich Q&A, pupil engagement with questions, items**

**Diversity in arrangements**

**The influence of hyper-accountability**

Edudata, Cambridge Assessment, Bristol & Heidelberg

**Boundaries State/school/society/individuals**

## **School improvement movement**

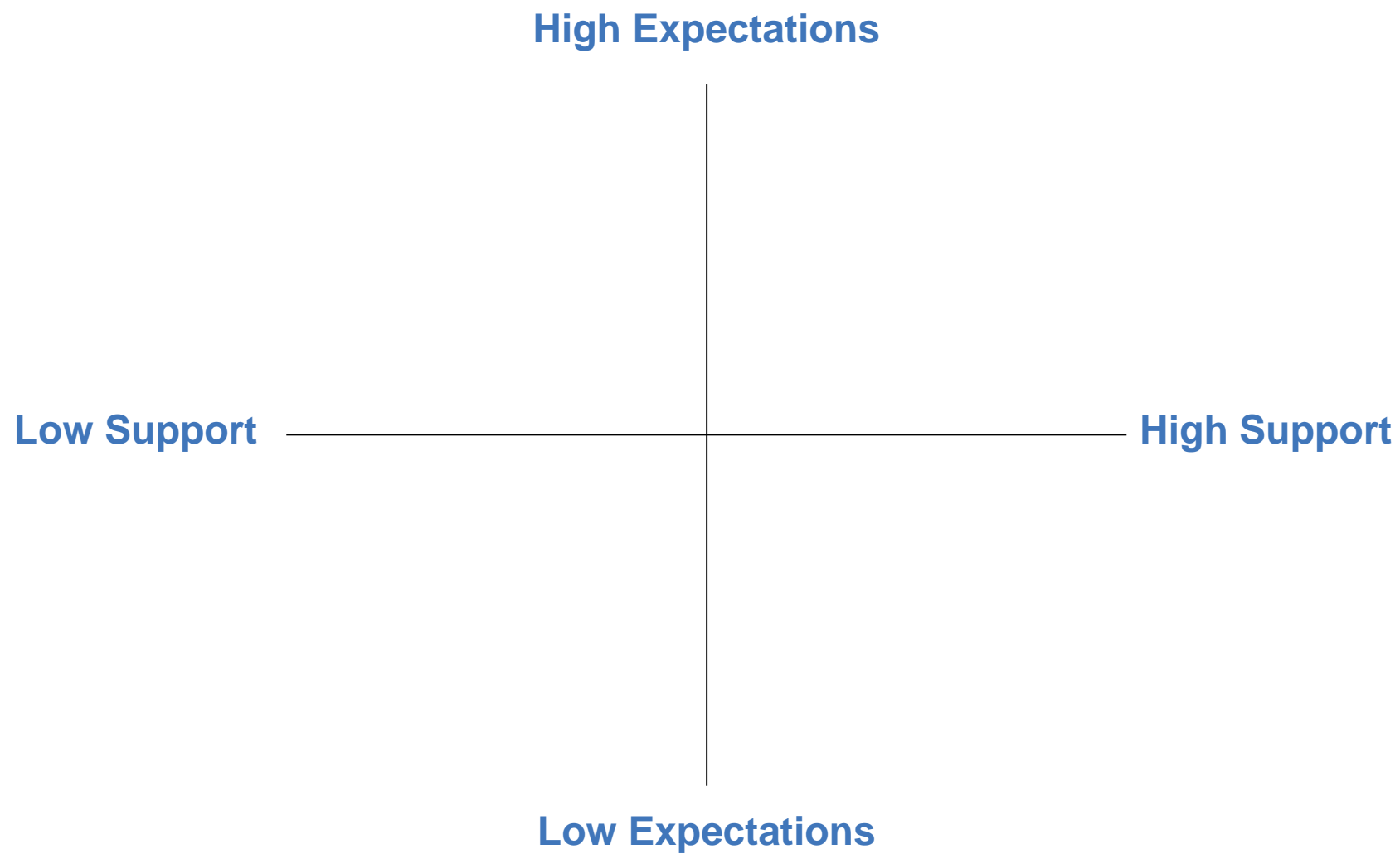
Sebba, Reynolds, Barber, McBeath, Gray & Rudduck, Galton, Stenhouse, Elliot

## **The importance of transnational comparisons**

Schmidt & Prawat, Raffe, Coles, Reynolds, OECD, Sahlgren

## **The importance of powerful interpretation**

Bhaskhar, Coe, Hattie



## Policy potential: understanding the relative performance of different national systems through 'control factors'

- 1 curriculum content (nc specifications, support materials, etc)
- 2 assessment and qualifications
- 3 national framework for qualifications
- 4 inspection
- 5 pedagogy
- 6 professional development
- 7 institutional development
- 8 institutional forms and structures (eg size of schools, education phases)
- 9 allied social measures (linking social care, health care and education)
- 10 funding
- 11 governance (autonomy versus direct control)
- 12 accountability arrangements
- 13 labour market/professional licensing
- 14 allied market regulation (eg health and safety legislation; insurance regulation)

**Curriculum development**  
**Institutional development**  
**Professional development**

**The autonomy argument – the current conclusions**

**Finnish Fairy Stories – Sahlgren, Sahlberg, Oates and Alexander**

## **Content (and construct)**



## The National Curriculum 1995

### Science - key stage 3

### **Materials and properties**

#### Chemical Reactions

- i. that when chemical reactions take place, mass is conserved;
- j. that virtually all materials, including those in living systems, are made through chemical reactions;
- k. to represent chemical reactions by word equations;
- l. that there are different types of reaction, including oxidation and thermal decomposition;
- m. that useful products can be made from chemical reactions, including the production of metals from metal oxides;
- n. about chemical reactions, *e.g. corrosion of iron, spoiling of food*, that are generally not useful;
- o. that energy transfers that accompany chemical reactions, including the burning of fuels, can be controlled and used;
- p. about possible effects of burning fossil fuels on the environment.

## **Chemical and Material Behaviour**

In their study of science, the following should be covered:

- a. chemical change takes place by the rearrangement of atoms in substances;
- b. there are patterns in the chemical reactions between substances;
- c. new materials are made from natural resources by chemical reactions;
- d. the properties of a material determine its uses.

## **2014 National Curriculum KS3 Chemistry**

### **The particulate nature of matter**

- The properties of the different states of matter (solid, liquid and gas) in terms of the particle model, including gas pressure
- Changes of state in terms of the particle model.

### **Atoms, elements and compounds**

- A simple (Dalton) atomic model
- Differences between atoms, elements and compounds
- Chemical symbols and formulae for elements and compounds
- Conservation of mass changes of state and chemical reactions

**Determining depth of treatment – operational definition of standards - formative use of ‘spent’ summative items – national item bank**

**Teaching ‘beyond the specification’**

**Familiarity with assessment items; variation theory; practice**

**Model tasks – lesson observation and continuous refinement**

**Feedback – findings from digital platforms; production; reading speed, writing speed**

**Rich oracy; complex language; extended writing**

**The quality of teaching – John Hattie’s synthesis work**

**Pedagogic and subject expertise**

**Textbooks & related materials – international comparisons  
and US Dept of Education 2011 RCT on reading schemes**

**‘Domain recognition’ – schemata – nailing the unifying  
concepts – powerful knowledge**

**Teaching renewal – the fallacy of ‘fixed developmental  
steps’; academy conversion**

**Ancillary actions – breakfast clubs; out-of-hours study; homework policy; ‘buddy’ and anti-bullying policy; student voice; etc**

## **Continuity and stability**

**Stable systems – South Farnham ‘focus groups’ –  
assessment as a vital element of the model – no levels –  
structured lesson planning and review**

**Distillation of good practice – within-schools systems,  
between-school systems; textbooks in Shanghai, model  
tasks and activities**

**The State’s role in adopting stability as a policy objective**

**James Croft on ‘collaboration’**

## **The importance of ideas**

- ability – Finland, Shanghai**
- progression – immediate support, ‘focus’ provision**
- exposure**
- personal capital**
- fewer things in greater depth – Primary, GCSEs**



# Assessment and rapid school improvement



CAMBRIDGE ASSESSMENT



UNIVERSITY *of* CAMBRIDGE  
Local Examinations Syndicate

Tim Oates  
Group Director  
Assessment Research & Development