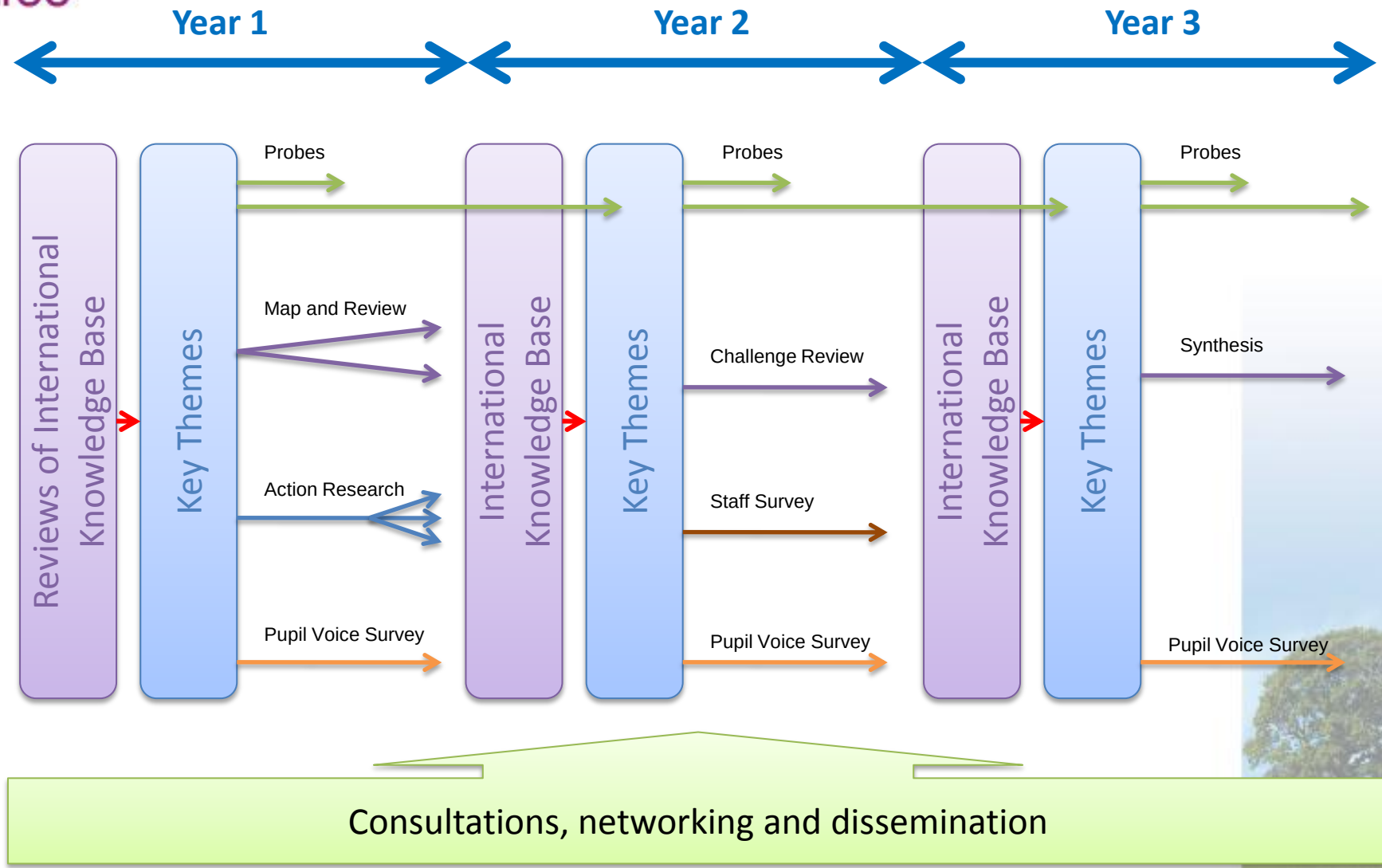
# Key messages for curriculum design and enactment from a three year study

Philippa Cordingley
Centre for the Use of Research and Evidence in Education

Mark Hadfield
CeDARE

# The evidence base

- 3 systematic reviews
- 7 multi method, multi site probes – (799 pupils and teachers in 29 schools) interrogated via international evidence base
- 3 large scale pupil surveys (15,060 pupils in 334 schools) and a layered staff survey (570 teachers) all triangulated via 20 focus groups of 6-10 pupils and or teachers
- Data extraction and analysis across whole to create a synthesis framed by the core findings to emerge from the international evidence reviews


Year 1
Year 2
Year 3
Reviews of International Knowledge Base
Key Themes
International Knowledge Base
Key Themes
International Knowledge Base
Key Themes
Probes
Probes
Probes
Map and Review
Challenge Review
Synthesis
Action Research
Staff Survey
Pupil Voice Survey
Pupil Voice Survey
Pupil Voice Survey
Consultations, networking and dissemination

# The research foci

- In year 1 priorities flowed from the initial review and map & judgement re maturity of evidence base
- Plus policy priorities emerging from QCDA via CEAP
- In later years evidence from survey also shaped foci
  - e.g. evidence re challenge, closing the gap & management of change
- Probes: assessment; CPD; quality of talk and group work; wellbeing; participation and engagement, closing the gap; management of change
- Thematic synthesis – took the findings from the systematic reviews as the structure

# Our objectives

- Generating evidence required by different audiences
- Synthesising differing forms of research
- Developing specific articulations in order to inform policy and practice
- Mapping and scoping of evidence base
- Iterative thematic analysis of emerging trends
- Cross-hatching with current issues in the system
- Identification of existing practice

# Effective curriculum experiences – Findings from the reviews of research

- Positive outcomes when the curriculum involved:
  - experiences that enable students to experience ideas, facts and phenomena in **context** and connect the curriculum with learning in the **home**
  - experiences that build cumulatively on students' **existing** knowledge, understanding and skills and engage learners actively in **assessment**
  - Use of less compartmentalised approaches to promote **conceptual development** and encourage cross curricular transfer of learning;

# Effective curriculum experiences – Findings from the reviews of research

- Positive outcomes when the curriculum involved:
  - structured **group work** and effective **talk** as a means of students accessing the curriculum
  - curriculum tasks that are specifically planned for **challenge** for all pupils
  - **Excellence in subject knowledge and in professional development** to underpin all of the above

# Reflections

- Are there things missing you would have expected to see?

# Structuring group work to secure access to the curriculum for *all* pupils

- Effectiveness of structured and planned collaboration for securing access
  - e.g. via modelling group working skills and designing interdependent tasks
- Benefits range from improvements in cognitive reasoning, problem solving and achievement to enhancing learner perceptions about different subjects
- Plus a number of emotional and behavioural benefits including greater focus, motivation, and independence
- Also evidence from across reviews that learning that was *not* genuinely collaborative

# Building incrementally on starting points

- Effective curriculum planning depends on teachers' knowledge of their learners and their needs. Achievement flowed from careful planning for building on learner needs which also:
  - Increased motivation and enjoyment of the curriculum;
  - Built up pupils' confidence; and
  - Helped recognise and work through or avoid misconceptions
- Pupils believe teachers' skills in identifying and building on existing knowledge and understanding increased
- By 2010 80%+ of primary and 90%+ secondary learners said teachers were good at this and at helping them understand what they need to know and to do next.
- *Planning curriculum experiences that reveal and build on learners' starting points promotes learning but is challenging for teachers; an area where sustained CPD is important*

# Context based learning

- Strong benefits when learning is contextualised – when ideas and phenomena encountered in real or simulated, practical situations including connecting with life beyond school
- Contextualisation actively considered in curriculum planning for KS3 in circa 33% schools, but only for 10% during KS4
- Schools connecting the curriculum and learners' home and community life effectively adopted three broad strategies:
  - Engaging parents in learning set by school e.g. via interactive homework
  - Enabling learners to draw on their experiences outside of school in lessons
  - Community based tasks.
- *Schools could do more to*
  - *contextualise learning, especially for older pupils*
  - *engage parents in their children's learning*
  - *create curriculum experiences in which learners draw on outside experiences.*

# Assessment

- There is strong evidence from the international and school-based research that assessment can raise achievement when assessment processes involve:
  - learners thinking and talking about their learning; and
  - drawing on self and peer reflections, as well as teachers' perspectives
- Practical difficulties in accessing detailed insights into learner's individual starting points and beliefs in large classes. *CPD that helps practitioners:*
  - *access effective strategies and*
  - *be aware of common patterns and misconceptions in particular subjects*
  - *mobilise pupils' own contributions*
- *has an important role to play here*

# Flexibility

- Evidence from both the international and the school-based research revealed the importance of planning learning across the curriculum in order to promote depth in young people's conceptual development.
- Helpful in overcoming the difficulty learners sometimes have in connecting thinking and making challenging links between subjects and identifying underpinning principles
- *So joint planning between subjects and cross-curricular strategies and/ or using thematic approaches most helpful when focussed on conceptual depth.*

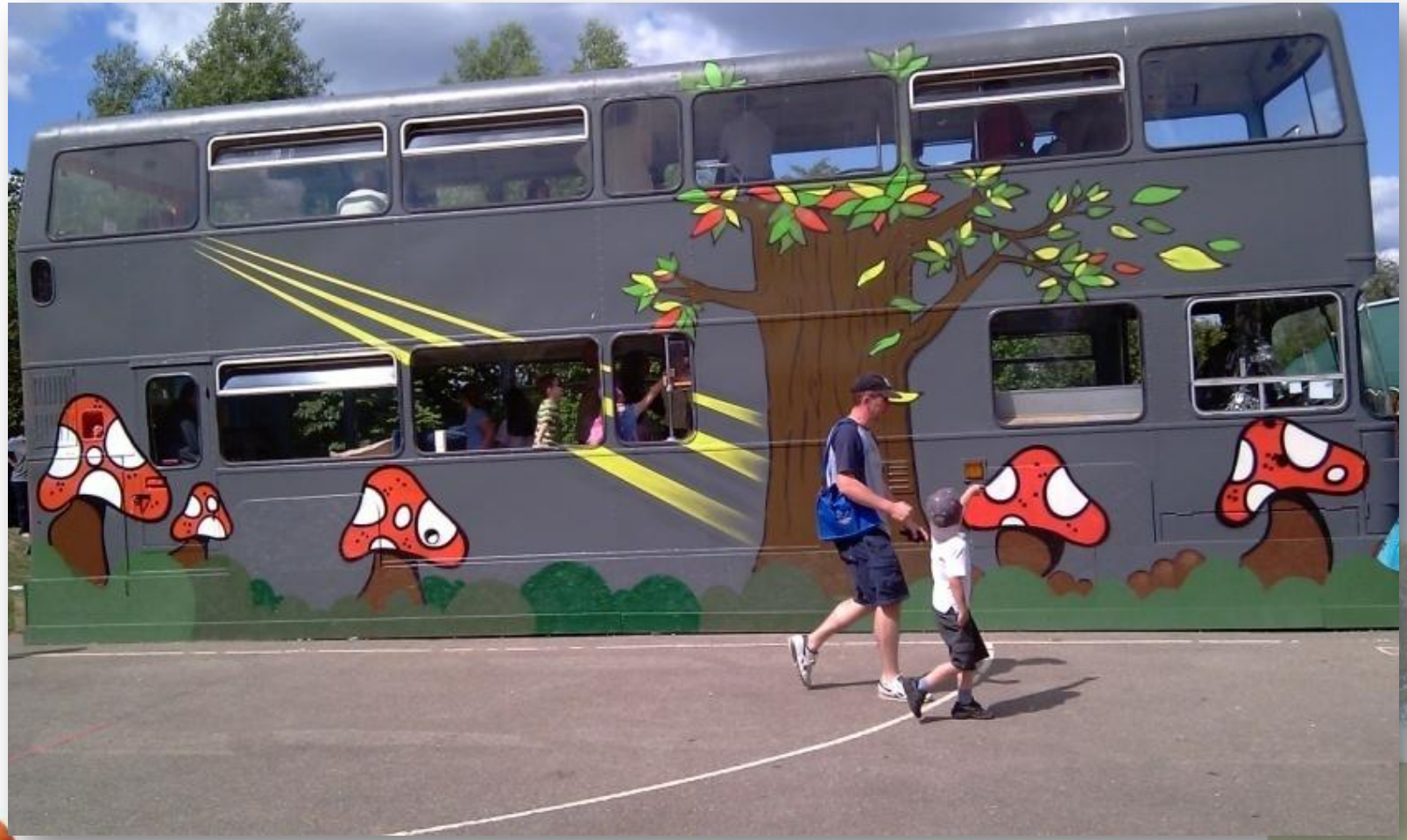
# Challenge

- Coming soon

# Reflections

- Is there something still missing that you expected to see?

# An illustration - designed for pupils, by pupils – with the help of artists




ISOLATOR SWITCH
BEHIND DOOR

# Made welcoming and right for reading by pupils with an author

# Made warm and manageable via science, maths and technology in partnership with engineers

# Wroxham school

- 12 weeks curriculum  reviews & planning by staff and pupils
- Working from National Curriculum staff lay out skeleton and pupils flesh out contexts
- Teams of staff translate goals into schemes of work with support
- Class teachers create lesson plans and resources that are reviewed
- Missing pupils items  want are covered by homework
- Contexts include whole school real projects

# In effective curriculum development schools:

- Leadership of Curriculum Development (CD) was an important vehicle *for* high quality CPD and depended *on* structured CPD
- CD made CPD feel like delivering the SDP to leaders and like doing the day job better to teachers and
- Leaders drew in specialist expertise in curriculum design, content, pedagogy and CPD
- Leaders made strategic use of *collaboration* to generate multiple perspectives, open up colleagues' sense of possibilities & expand range of approaches

# In effective curriculum development schools:

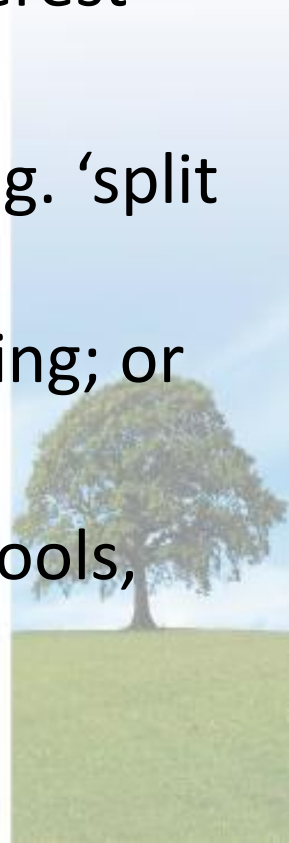
- CPD for CD involved:
  - Multiple inset days ( big picture from specialists, workshop + follow up, supported resource creation)
  - Coaching/mentoring  to support the development of schemes of work, lesson plans and resources from curriculum leaders from peers and specialists
  - Observation to refine foci for coaching and spot persisting “old models” as learning points
  - Active and explicit involvement of school leaders in all stages

# In effective curriculum development schools:

- Leaders aligned CD and CPD with *informal* accountability systems  increasing ownership and the transfer of learning
- E.g. diagnostic workshops, coaching, observation to celebrate progress, experimentation & use of tools
- Evaluation of impact of CD tied to data needed to support CPD and vice versa; e.g. pupil enquiry and surveys and focus groups to orientate this towards learner needs
- *Both* depended on clarity re what success would look like for learners

# In effective curriculum development schools:

- CD became embedded at scale via  mediated via CPD – emphasis on adaptation for context
- Developing/refining them for specific groups of pupils/contexts and matching them to pupil interest was part of CPD
- Tools included rubrics to systematise thinking e.g. ‘split screen thinking’ as a reminder about thematic, affective and content objectives in lesson planning; or EQ checklists for BLP
- They included templates, planning grids, audit tools, “habits of mind” for enacting core principles



# In effective curriculum development schools:

- What do you think is more important?
  - Planning or enactment?
  - Content or process?

# Designing challenge into a curriculum

Philippa Cordingley
Centre for the Use of Research and Evidence in Education

Mark Hadfield
CeDARE

# Why does challenge matter?

- Over the three years 2007-2010 reserach to monitor the implementation of the National Curriculum in England for the national Qualification,  Curriculum and Development Agency(QCDA)
- A stubborn 20% of ( circa 8,300) pupils, of all abilities, genders and social groups consistently reported they did not feel challenged by the curriculum ( or, very often, their parents) even though positive about their teachers
- By contrast there was a 19% increase over the three years in students reporting their teachers were good at finding out what they know already and using that to plan lessons…

# The data set

- Three annual surveys of primary and secondary pupils
- 13,533 valid responses:
  - 6241 primary
  - 7292 secondary
- 253 schools;
  - 145 primary
  - 108 secondary
- Schools representative of national picture (but all co-ed and slightly bigger on average)
- Approximate balance between girls and boys (53.5% girls)
  - Primary = 53% girls
  - Secondary = 52% girls

# Key findings 1

- High and growing perception of teachers as supportive – e.g. teachers good at knowing starting points
  - Primary = 81.2%
  - Secondary = 62.6%
- Marked increase in collaborative group work
  - Primary = up 40%
  - Secondary = up 33%
- Greater feeling of influence over their own learning
  - Primary = doubled to 48%
  - Secondary = up 10% to 26% (but 60% could choose **who** they worked with)

# Key findings 2

- Most pupils (both phases) said lessons neither too hard nor too easy but
- Increasing proportion *dis*agreed that their lessons were too hard
  - Primary = 31% ➔ 53%
  - Secondary = 31% ➔ 58%
- Pupils report diminishing feeling of pressure from parents, teachers and friends

# Key findings 3

- Increase in numbers strongly disagreeing that lessons are too hard

**+**

- Decreasing feeling of pressure from parents and teachers

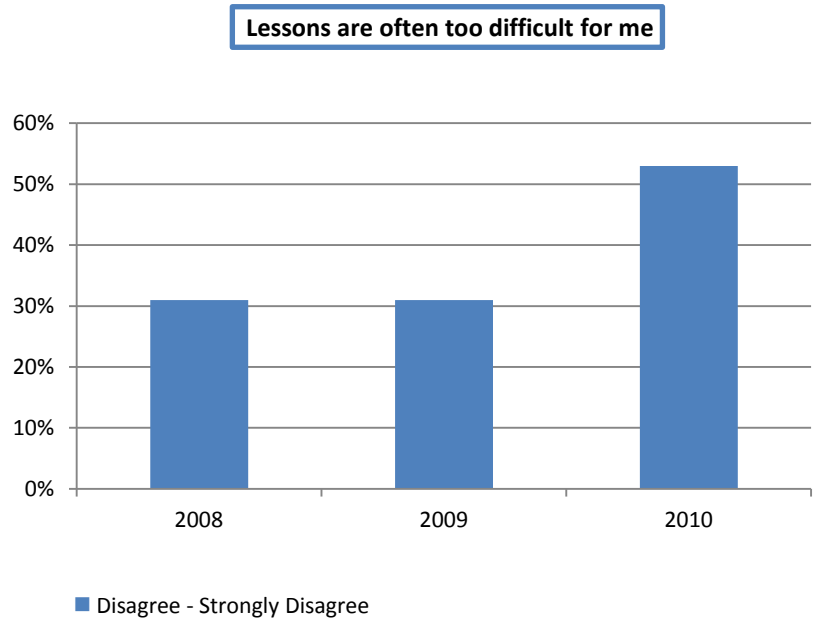
**+**

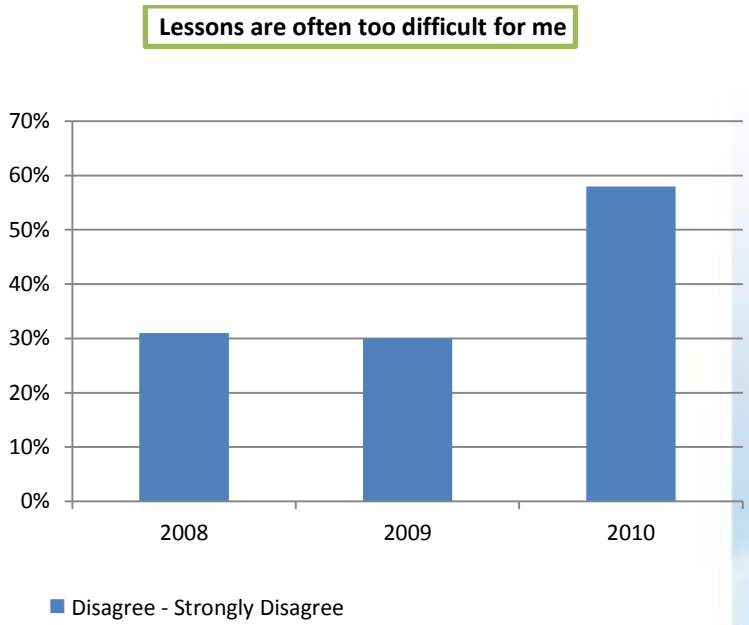
- Data on challenge in 2010 survey

**=**

- Significant minority feeling under challenged by lessons

# Are lessons too hard?

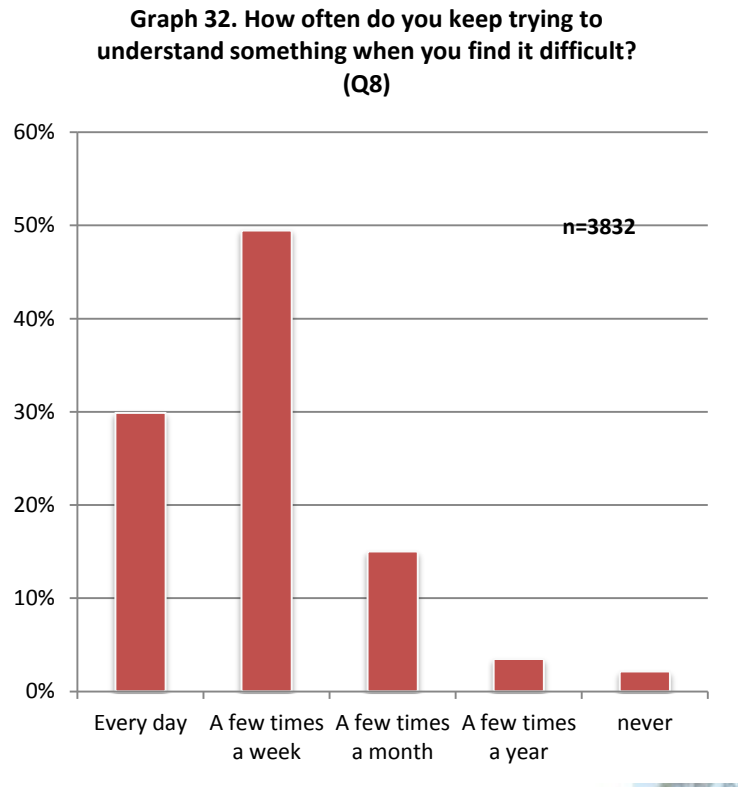



| Question Lessons are often too difficult for me | Direction | 2008 | 2009 | 2010 | 2010 - 2008 |
|---|---|---|---|---|---|
| Primary - | Disagree | 31% | 31% | 53% | 22% |
| Secondary | Disagree | 31% | 30% | 58% | 27% |

# Does this relate to achievement/ability?

- Secondary 2010
  - Reading: students reporting L 6/7 more persistent that those reporting L 3/4/5
  - Maths: students reporting L3/4 more persistent than those reporting L 5/6/7



# A systematic review of research re how teachers construct challenge in the curriculum

- How much do we understand about how teachers construct the idea of 'challenging' young people in curriculum terms?
- What are the key judgements teachers make that affect the level of challenge within their curriculum offers?
- What do teachers see as the most challenging learning terrain and learning processes?

# The evidence base

- Review  based on filtering from 3000+ studies resulting in a synthesis of  43 studies of curriculum interventions which encompassed the following definition of challenge:
- *Irrespective of prior attainment, challenging young people in curriculum terms means designing teaching and learning to elicit from students their best efforts (i.e. challenge needs to be motivating) and to enable them to think and act in ways that are transferable and/or discipline-specific; and which are progressively more complex, critical, creative and independent*

# Impact when challenge is effective

- The impacts *on all students* include:
  - Showing greater interest in work
  - Gaining higher grades
  - Developing a broad range of learning skills *and* understanding of underpinning rationale re their use
  - A shift amongst students from a receptor model of learning to an investigative, proactive one
  - Pupils perceive lessons as useful and authentic
- A particular impact *for teachers*:
  - A shift from targeting fluency in recalling information/ facts, processes – to – interpretation of concepts and development of strategies for problem solving

# When challenge is ineffective

- When the curriculum isn't challenging for a particular group of, or all students, they see it as:
  - restricted in what it offers
  - restricted in what it values as achievement
  - isolating them from the content and each other
  - intentionally inaccessible to some

# Key research findings

- Planning for content alone does not secure effective challenge.
- It's essential to plan processes for enacting content with specific regard to challenge from the start
- Challenge, via combinations of content and process, is important for ALL learners
- Challenge is geared to not only raising achievement but to motivation – e.g. for tackling risk of disengagement, e.g. for underachieving gifted and talented students, low achievers and vulnerable learners

# Key processes

- Many studies of effective challenge highlight involving students in developing collaborative critical thinking and analysis to develop meta-cognition through:
  - collaborative inquiry (via associated open ended tasks)
  - cognitive conflict/ideas in tensions with each other (to trigger deeper analysis)
  - experience of failure/mistakes (with chance to learn from and overcome them/see them as part of learning)
  - problem solving (emphasis on application for different contexts and so a need for underpinning principles) and
  - guided interaction between these things

# Key processes

- Planning lessons, schemes of work and for specific curriculum values involved planning for
  - identifying and revisiting starting points iteratively – including in bigger jumps that risk failure
  - judging when to step back and move into facilitator role – clarity re what you need to know to make this judgement at planning stage
  - mixing support with challenge and risk of failure
  - involving pupils in designing learning tasks

# In year 3 how teachers in England approach challenge

- Ran 20 focus groups for subject specific and mixed groups of teachers
- Each focus group used 3 activities to explore key areas identified by the review as important for challenge but which empirical evidence shows teachers find difficult. These are:
  - identifying students' starting points
  - knowing when to step back and assume a more facilitative role; and
  - overcoming the perceived risks of over-challenge

# The focus group activities: an example - understanding anxieties about over-challenge

The review found that teachers are more concerned about over-challenging than under-challenging students.

- In pairs or threes think about what could go wrong (the risks) if students are over-challenged. Record each idea on a post-it.
- Look at examples. Can they be grouped?
- What could be done to overcome the risks?

# The focus group findings: the risks of over challenging students

- The teachers thought that over challenge could result in the students:
  - losing confidence and self-esteem
  - becoming disinterested
  - behaving disruptively
  - developing misconceptions particularly in mathematics and science

# The focus group findings: the risks of over-challenging students Quotes from confident specialists

"We feel under pressure to over-challenge, but we need to exercise our professional judgement about what individual children need in terms of challenge" (Primary mathematics specialists)

"We feel it's important to support students out of their comfort zone, but we probably under-challenge at times" (Primary science specialists)

"We're worried about overloading them and about misconceptions creeping in" (Secondary science specialists)

"We're not afraid to challenge – we constantly raise the bar even in low attaining groups" (Secondary mathematics teachers)

"There is no such thing as over-challenge" (Primary English specialists)

# The focus group findings: strategies for overcoming the risk of over-challenge

The teachers suggested a number of strategies which could help reduce the risks of over-challenge.

These included:

- developing an ethos where it is ‘okay’ to be stuck or ‘fail’ at a task initially
- building up a relationship of trust by being upfront about the nature of the challenge
- stepping the challenge so that it gets progressively more difficult

# Focus group findings re students' starting points
## Quotes from confident specialists

"It's not until you get onto practical investigations or start to probe them that you realise they may have the 'knowledge' but they don't really understand it."

"We can't talk to them all individually – all we can do is get a rough idea of where the majority are at."

"You tend to miss out on talking to the well behaved learners."

" There's no chance of in-depth conversations with any of them."

"It's useless to start building on sand so you have to get prior knowledge somehow."

# The focus group findings: strategies for overcoming the challenges for identifying starting points-2

**Strategies for overcoming the challenge of poor communication skills included:**

- using a think-pair-share approach to encourage more extended answers
- asking students to write an explanation suitable for younger students

# The focus group findings: stepping back

- The teachers thought that knowing when to step-back could be difficult because:
  - it was hard to let go
  - there was a lack of time to help students develop the independent learning skills that they needed
  - the students might develop misconceptions

# Contact Details

philippa.cordingley@curee.co.uk
www.curee.co.uk
Centre for the Use of Research
and Evidence in Education
4 Copthall House
Station Square
Coventry CV1 2FL
024 7652 4036

mark.hadfield@wlv.ac.uk
www.wlv.ac.uk/cedare
School of Education
University of Wolverhampton
Walsall Campus
Walsall