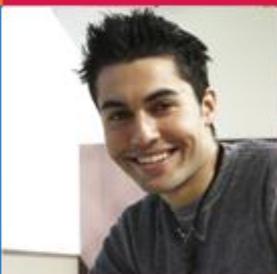


Inspiring teaching, inspiring learning: How we prepare learners for a lifetime of learning



Cambridge Schools' Conference

December 2014

Dr Tristian Stobie
Director, Education. Cambridge
International Examinations



Cambridge Schools Conference 2014

The conference essential question:

“ How will I change my teaching as a consequence of what I have discovered about inspiring teaching and learning during this conference? ”

www.cie.org.uk/csconf14

Attributes of a Cambridge teacher

Confident – how has the conference prepared you to work better in your school?

Reflective – what have you seen, heard or experienced at the conference that you would like to explore and reflect upon further?

Responsible – how has the conference helped you review your responsibility as an educator with regard to the conference theme?

Innovative – to what extent has the conference made you want to try something new in your teaching and as a teacher?

Engaged – how has the conference enabled you to engage with the wider community of Cambridge teachers?

Twitter feed: Follow @CIE_Education for all the news, information and live updates from the conference. Use the hashtag #csconf14 to join the conversation.

Conference App: Download our Conference app to get even more from your conference experience www.cie.org.uk/app



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Inspiring teaching, inspiring learning

Overview of Presentation:

- ▶ The challenge
- ▶ Inspiring learning
- ▶ Learning to learn: Building learning power *[adapted from Guy Claxton's presentation]*
- ▶ 7 follow up ideas for Cambridge teachers and schools

Learning?

The Times 25th June 2014

Most freshers have forgotten what they learnt

Nicola Woolcock

University freshers struggle to remember most of their A-level course, according to a study published today.

Researchers tested nearly 600 students at five universities in their first week and found that even A-grade students could remember only two fifths of the A-level syllabus. They blamed schools “teaching to the test”

for the undergraduates’ failings. Since many degree courses build on knowledge learnt at school, it suggests some students may struggle at university.

Harriet Jones, of the University of East Anglia, the lead researcher, said: “What our research shows is that students are arriving at university with fantastic A-level grades, but having forgotten much of what they actually learnt for their exams. This is undoubt-

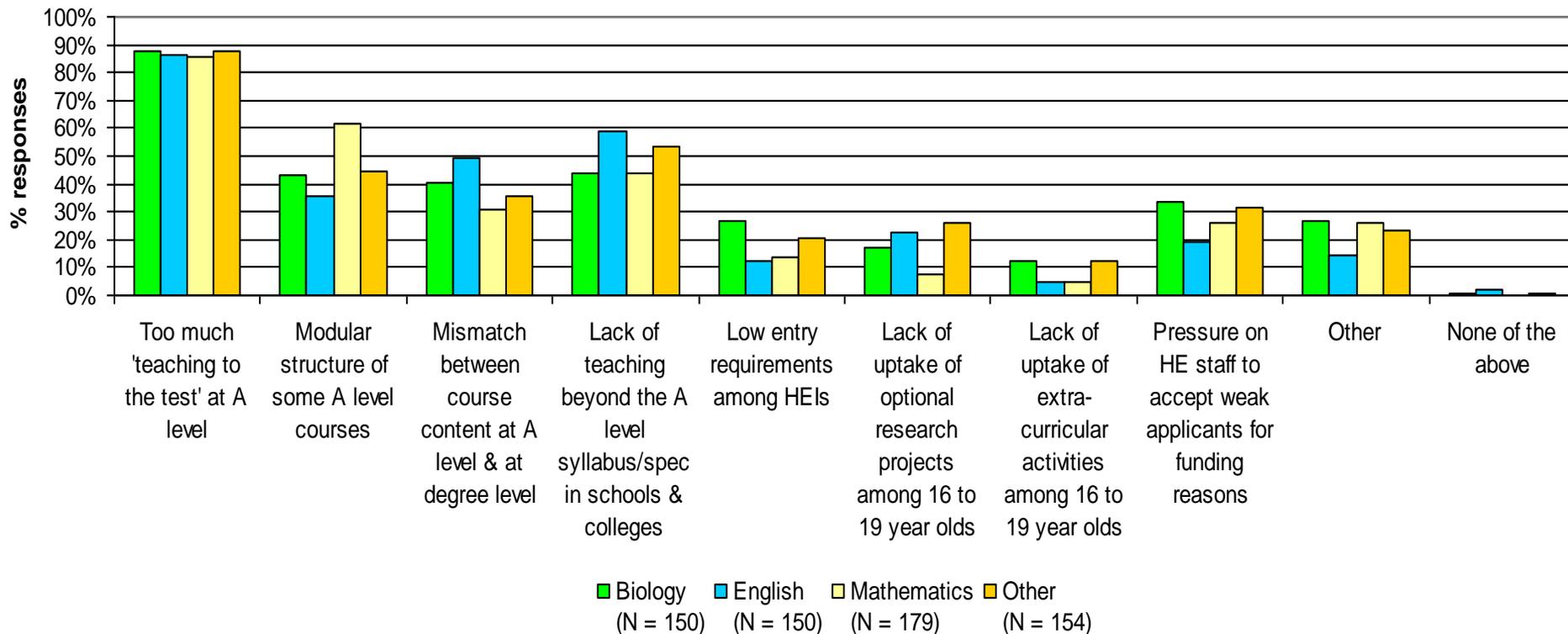
edly a problem caused by secondary schools gearing all of their teaching towards students doing well in exams, in order to achieve league-table success.”

Academics tested 594 first-year bio-science students at Birmingham, Bristol, Cardiff, Leicester and East Anglia. Almost all had a grade A at A level. Given 50 minutes to answer 38 multiple-choice questions, they answered 40 per cent correctly on average.

Which of the following, if any, are contributing factors to 1st year undergraduates being underprepared for degree level study?

Too much 'teaching to the test' is considered a major factor contributing to undergraduates being underprepared

Source: Cambridge Assessment Research Division Study 2012



How to Teach?

[England]:

The Mail on Sunday (Main)
16 November 2014



By **Jonathan Petre**

SCHOOLS are being urged to go back to 'chalk and talk' teaching that was once widespread in Britain – in order to reproduce the success the traditional methods now have in China.

Education Minister Nick Gibb said having a teacher speak to the class as a whole from the front was much more effective than children working on their own – the method which has become dominant in schools over the past 40 years.

per cent in China.

The research, by Zhenzhen Miao and Professor David Reynolds of the University of Southampton, concluded: 'Effective teachers spent longer time on interacting with the whole class rather than with individuals/groups or leaving pupils to independent seatwork.'

Inspiring Learning

Learning involves a process of making meaning which is:

- ▶ incorporated into prior knowledge
- ▶ “... a significant change in capability or understanding”
- ▶ Deeper forms of learning modify previous understanding
- ▶ transfer to new situations

Adapted from the introduction to *Testing Times: the uses and abuses of assessment*. Gordon Stobart. Abingdon. Routledge. 2008

- ▶ Learning is not a disembodied rational process, it is embedded in emotional functions [Immordino-Yang and Damasio [2007] We feel, therefore we learn. *Mind Brain and Education* Vol 1. No.1.Blackwell publishing.
- ▶ Learning requires effort , practice and resilience
- ▶ Learning is a never ending spiral into deeper levels of understanding requiring more competence to handle complexity
- ▶ Previous mental models *need to be constantly challenged*



1. Focus on a learning rather than a performance orientation

Source: Watkins, C. [2010] Learning Performance and Improvement. *Research Matters*. The London Centre for Leadership in Learning issue 34, summer 2010. www.ioe.ac.uk/insi

We need to challenge and change culture

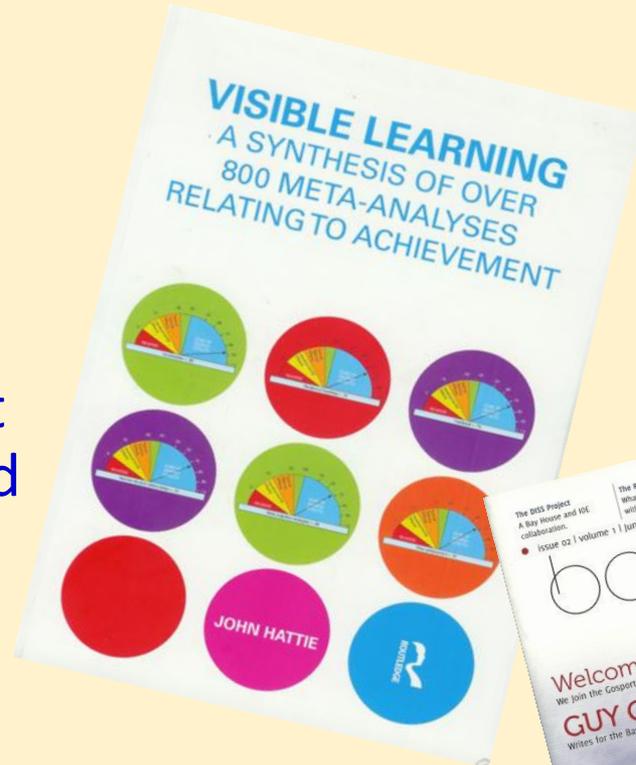
From	To
Proving Competence	Improving Competence
Performance orientation	Learning Orientation
'Looking good'	'Learning Well'
	Making Learning an object of attention, conversation and reflection

“Students with more elaborated conceptions of learning perform better in public examinations”

“The evidence leads to the conclusion that learning about learning is a practically viable and educationally important strategy which also has the effect of improving performance”

Building an inquisitive staff community

- “The biggest effects on pupils’ achievement occur when teachers become learners about their own teaching, and when pupils become their own teachers.”
 - Professor John Hattie



Understand that *constructivism is a form of knowing and not a form of teaching*

Source: Hattie, J. [2009] Visible learning

Effect Sizes for teacher as activator and teacher as facilitator

Teacher as Activator	d	Teacher as Facilitator	d
Reciprocal teaching	.74	Simulations and gaming	.32
Feedback	.72	Inquiry based teaching	.31
Teaching students self-verbalization	.67	Smaller class sizes	.21
Metacognition strategies	.67	Individual instruction	.20
Direct instruction	.59	Problem based learning	.15
Mastery learning	.57	Different teaching for boys and girls	.12
Challenging goals	.56	Web based learning	.09
Frequent / effects of testing	.46	Whole language reading	.06
Behavioural organizers	.41	Inductive teaching	.06
Average activator	.60	Average facilitator	0.17

Visible Learning: Excellence in Education

When teachers see learning through the eyes of the student
When students see themselves as their own teachers

Teachers are among the most powerful influences in learning

Active and guided instruction is much more effective than unguided and facilitative instruction.

Teachers need to:

- ▶ be directive, influential, caring and actively engaged in the passion of teaching and learning
- ▶ to construct meaningful experiences in the light of what each student is thinking.
- ▶ have proficient knowledge and understanding of their subject to provide meaningful and appropriate feedback
- ▶ know the learning intention and success criteria of each lesson and how well they are attaining these and where to go next
- ▶ teach for transfer...relating and extending ideas
- ▶ create a learning environment where error is welcomed as a learning opportunity

Hattie. J [2009] Visible learning: A synthesis of over 800 Meta-Analyses Relating to Achievement Routledge. Oxford UK.

What is Learning how to Learn?

Learning goes beyond skills / content. We need a richer vocabulary. attitudes, dispositions, qualities, emotions, values, habits of mind...cultivate as well as train.

- ▶ David Perkins: Dispositions.
- ▶ Guy Claxton: Learning power, Learning habits.

Key Competences / *Learner Attributes*

- ▶ a general ability, aptitude, or capability with a task. It implies effectiveness,
- ▶ *a complex combination of knowledge, skills, understanding, values, attitudes and desire which lead to effective, embodied human action*
- ▶ Competences enable knowledge to be applied to real world situations, to be translated into *effective, embodied human action*.

Reflective learning: Learning how to learn

Source: Implementing the curriculum with Cambridge guide

Cambridge learners:

- ▶ constantly **monitor** what they are doing and produce **appropriate responses**
- ▶ **plan** and **manage** their work and performance and **evaluate** their progress
- ▶ **understand themselves** as learners and the nature of their knowledge
- ▶ apply their understanding to **performance**
- ▶ think **critically** and **creatively** to overcome barriers and engage with the subject
- ▶ are **emotionally resilient** when confronted with setbacks
- ▶ are **confident**, but not arrogant, in working with others and sharing ideas
- ▶ realise that learning is **social** and **collective**
- ▶ take **calculated risks**, understanding that we learn from mistakes.

Some possible learning habits

1. Organise and design your own learning – *self-teaching*
2. Think on your feet – *'learning agility'*
3. Persist with difficulty - *persevering*
4. Manage your attention amidst competition - *concentrating*
5. Question and check knowledge claims – *sceptical appraisal*
6. Form effective teams for work and study - *collaborating*
7. Diagnose and improve your own work – *self-evaluating*
8. Seek and act on feedback - *craftsmanship*

Some possible learning habits

1. **Organise** and **design** learning
.....
2. **Think** on your feet
.....
3. **Persist** with difficulty
.....
4. **Manage** your attention
.....
5. **Question** knowledge claims
.....
6. **Form** effective teams
.....
7. **Improve** your own work
.....
8. **Seek** and **act** on feedback
.....
9. *???? [add more examples]*

How important is each for further learning and life?

How well are your school-leavers ready, willing and able to..?

5 = essential; 4 = desirable; 3 = moderate; 2 = somewhat; 1 = not at all

- ***What is your evidence for your judgements?***
- ***How could you collect better data?***
- ***How could you help your students improve?***

What is BLP?

- Deliberately expanding the *range of valued outcomes* of schooling to include such qualities of mind
 - Especially responding to difficulty and uncertainty
- Gradually evolving **teaching habits** and **learning cultures** to achieve these goals
 - Coaching teachers and checking progress
- Whilst maintaining and **improving conventional achievement**

Epistemic apprenticeship

The Efficient School

- Retention
- Discussion
- Justification
- Calculation
- Tight manipulation
- ‘Knocking out small essays’
- Accepting criticism
- Achieving targets
-

The Expansive School

- asking interesting questions;
- checking what we are told;
- thinking on our feet;
- designing our own learning;
- making good use of resources;
- harnessing our imaginations;
- unearthing problems;
- being bold and trying new things;
- helping ourselves when we are stuck;
- checking and improving our own work;
- seeking and valuing feedback;
- working well in different groups;
- listening carefully and respectfully;
- concentrating despite distractions;
- becoming our own teachers;
-
-

The levels of engagement

- **Envisioning** – clarifying the desired outcomes
- **Embarking (first steps)** - quick wins, highly specific, low-risk
- **Embedding**
 - “The way we do things round here”
 - Building specific muscles
- **Embodying**
 - Shifting the discourse of the classroom
- **Extending**
 - Increased coherence, progression and implementation
 - Staff culture and parental buy-in

Remember...

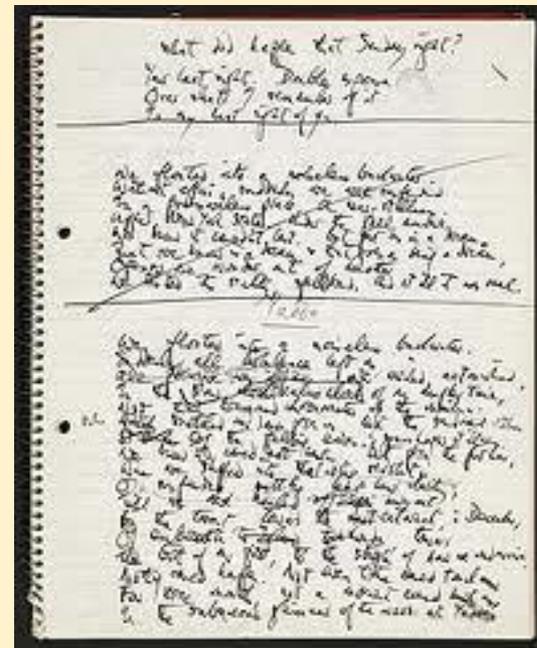
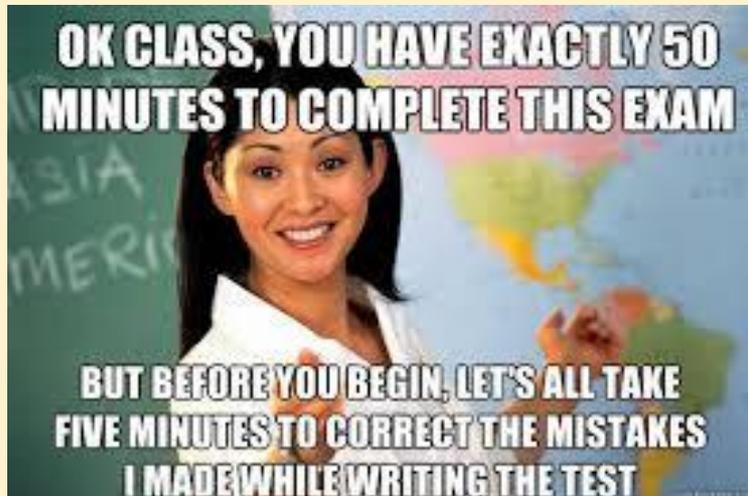
- Getting students to use a learning habit is not the same as getting them to stretch it
- Having busy happy children is not the point



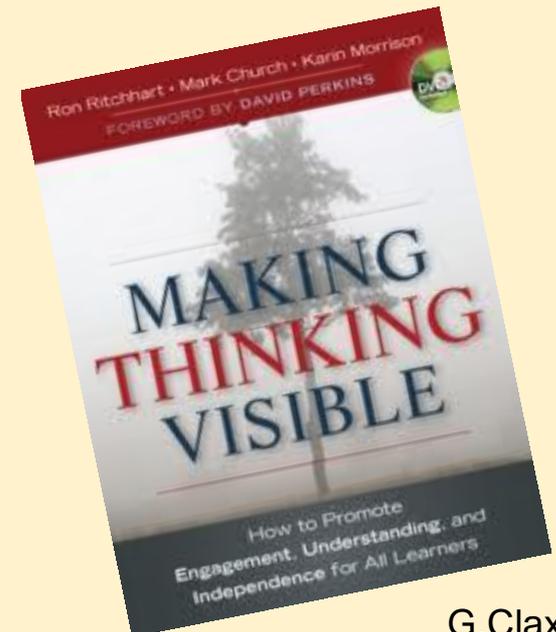
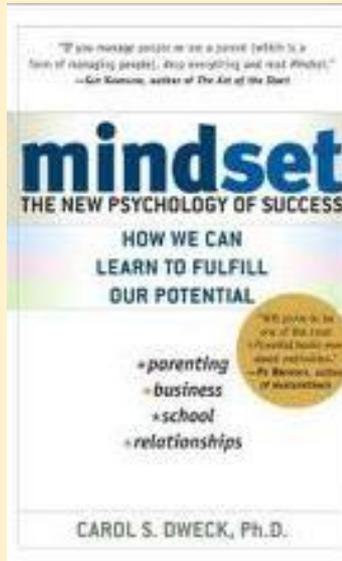
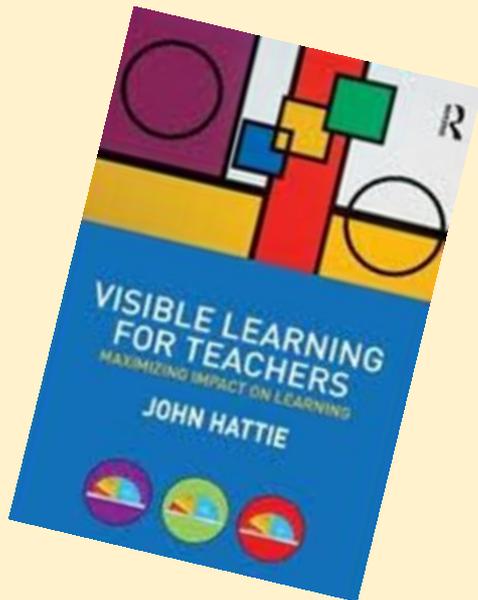
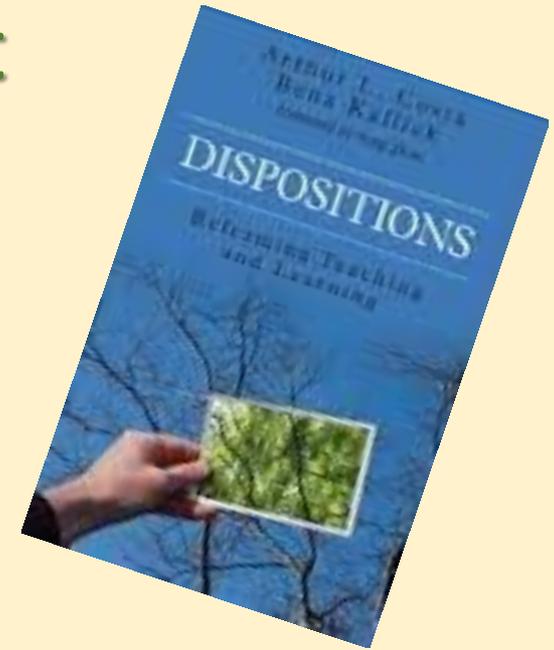
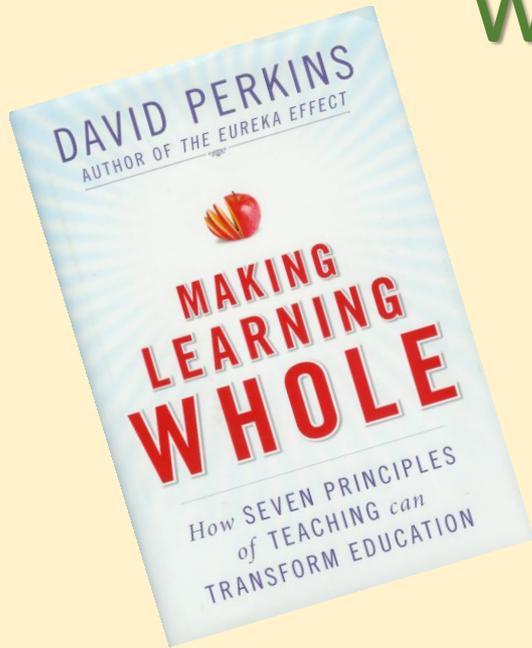
Being a model learner



- Teaching aloud
- Visible projects
- Notice my fallibility
- Your learning life

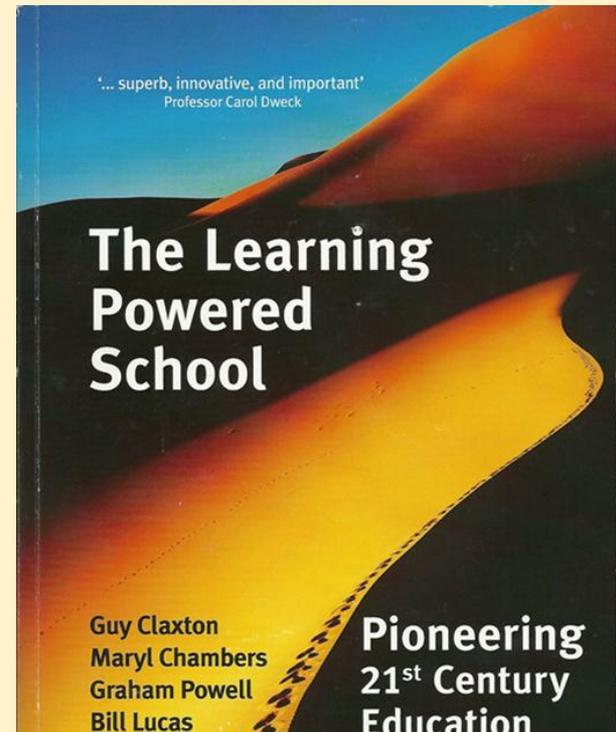


We know how to do it

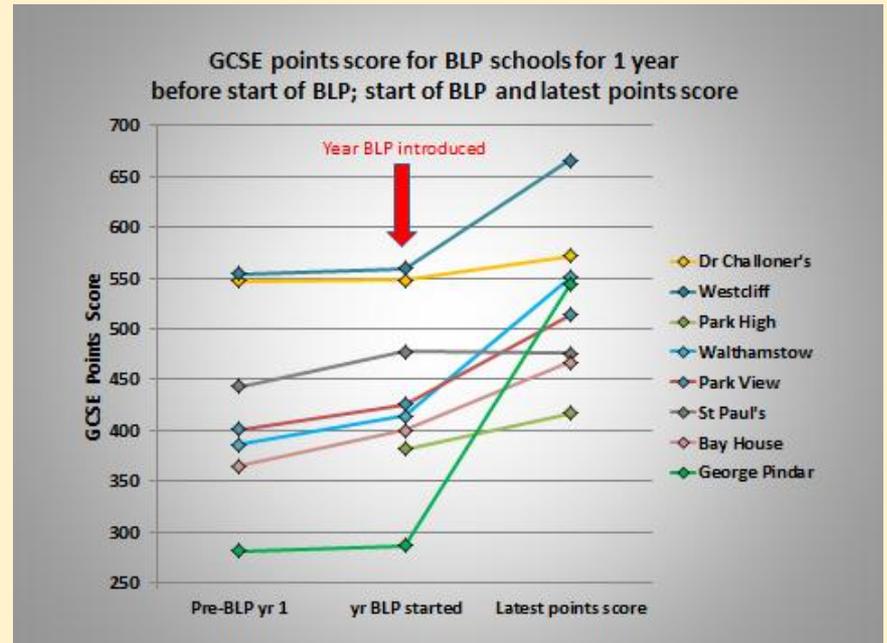
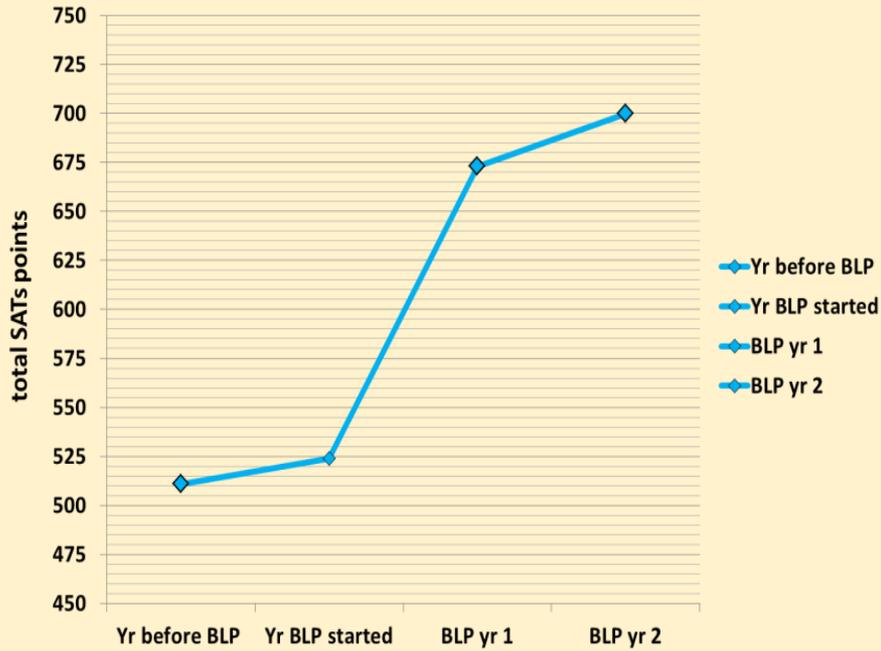


Benefits of BLP

- Raised results
- PLUS
- better preparation for university / life
- PLUS
- More satisfying teaching



Combined Key Stage 2 total SATs points for primary schools with 3 years BLP experience



A level results: Case study Gordonstoun

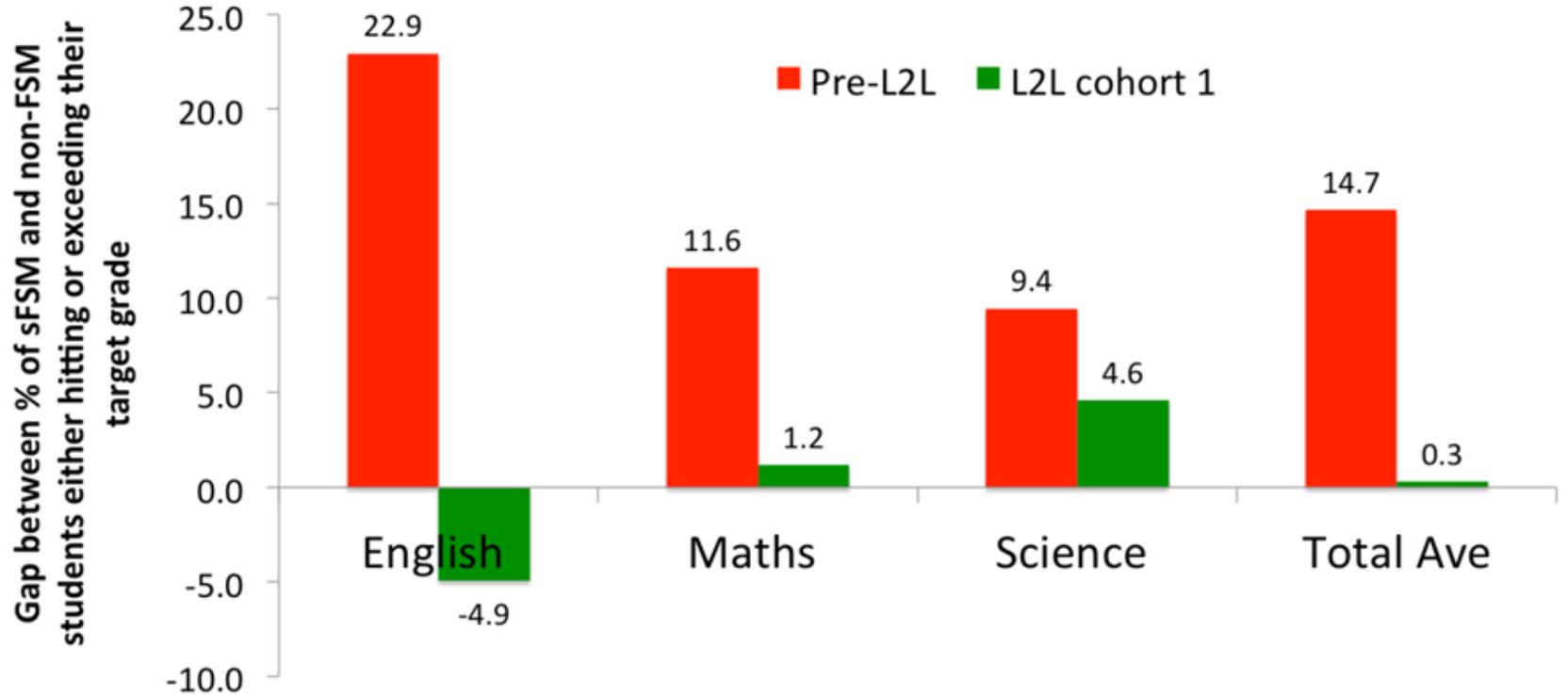


- “Through a focus on developing key learning skills rather than merely knowledge [acquisition], the A level results have risen steadily from 38% A*-B in 2007 to 60% A*-B in 2012 without any change in the standard of intake.”
- “Of all the GCSE papers taken in 2012, 81% were at least one grade higher than baseline testing had predicted.”
- “It is clear that [BLP] has given Gordonstoun students a...focus on how they might improve the key skills they will need to be better learners equipped for life.”
 - Paul Sanderson, Director of Teaching and Learning, Gordonstoun

CLOSING THE GAP: Year 9 subject attainment (Core subjects only)

The gap between % of students hitting or exceeding target grade: FSM vs non-FSM

Pre-L2L cohort (current Y11) vs L2L cohort 1 (current Y10)

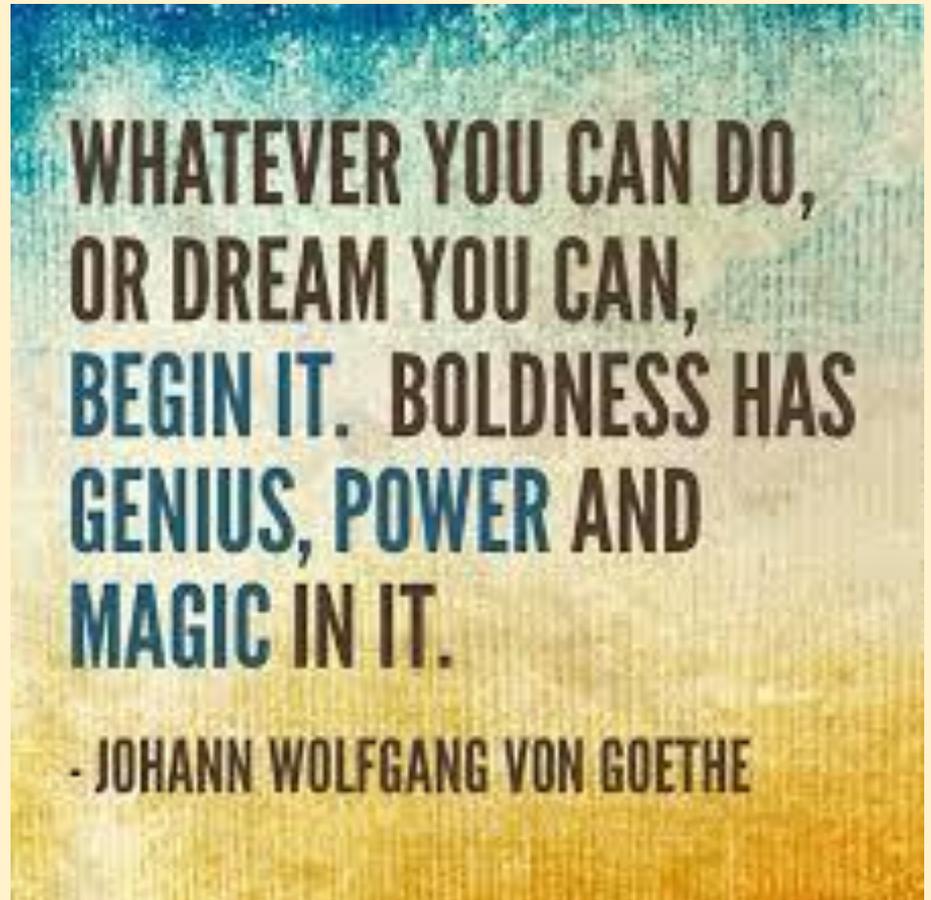


What stops us?

- Political interference
 - Fatigue
 - Cynicism
 - Forgetfulness...
 - *A perceived lack of time*
-
- The true purpose of education is to help all young people find what they love doing and want to be great at, and fill them with the confidence and learning power they will need to grow into their passions

What do we need?

- Understanding
 - Reassurance
 - Imagination
 - Will
-
- It's not centrally about permission or resources



1. Focus on a learning rather than a performance orientation

Source: Watkins, C. [2010] Learning Performance and Improvement. *Research Matters*. The London Centre for Leadership in Learning issue 34, summer 2010. www.ioe.ac.uk/insi

We need to challenge and change culture

From	To
Proving Competence	Improving Competence
Performance orientation	Learning Orientation
'Looking good'	'Learning Well'
	Making Learning an object of attention, conversation and reflection

“Students with more elaborated conceptions of learning perform better in public examinations”

“The evidence leads to the conclusion that learning about learning is a practically viable and educationally important strategy which also has the effect of improving performance”

Cambridge learner and teacher attributes

Cambridge learners	Cambridge teachers
Confident in working with information and ideas – their own and those of others.	Confident in teaching their subject and engaging each student in learning.
Responsible for themselves, responsive to and respectful of others.	Responsible for themselves, responsive to and respectful of others.
Reflective as learners, developing their ability to learn.	Reflective as learners themselves, developing their practice.
Innovative and equipped for new and future challenges.	Innovative and equipped for new and future challenges.
Engaged intellectually and socially, ready to make a difference.	Engaged intellectually, professionally and socially, ready to make a difference.

2. Nurture creativity, critical thinking and learning how to learn in all disciplines

“Creativity is possible in every discipline and should be promoted throughout the whole of education” [Ken Robinson, 2011]

Three related ideas:

1. **Imagination:** process of bringing to mind things that are not present to our senses
2. **Creativity:** the process of developing original ideas that have value
3. **Innovation:** the process of putting new ideas into practice



3. Focus on understanding: The importance of selective depth

“Coverage is the enemy of understanding”

[Howard Gardner]

“The most important thing I found out from [my father] is that if you asked any question and pursued it deeply enough, then at the end there was a glorious discovery of a general and beautiful kind.”

Source: Richard Feynman (1994) *No Ordinary Genius*



4. Connect learning to the real world, other topics in the subject, other disciplines and the experience of learners



5. Understand and apply assessment for different purposes

Too much emphasis on summative assessment

- ▶ Most assessment should be about making learning and thinking visible to help guide future learning
- ▶ Criteria help to identify what matters, to **define what excellence looks like**
- ▶ When summative assessment is used we need to assess what we value.



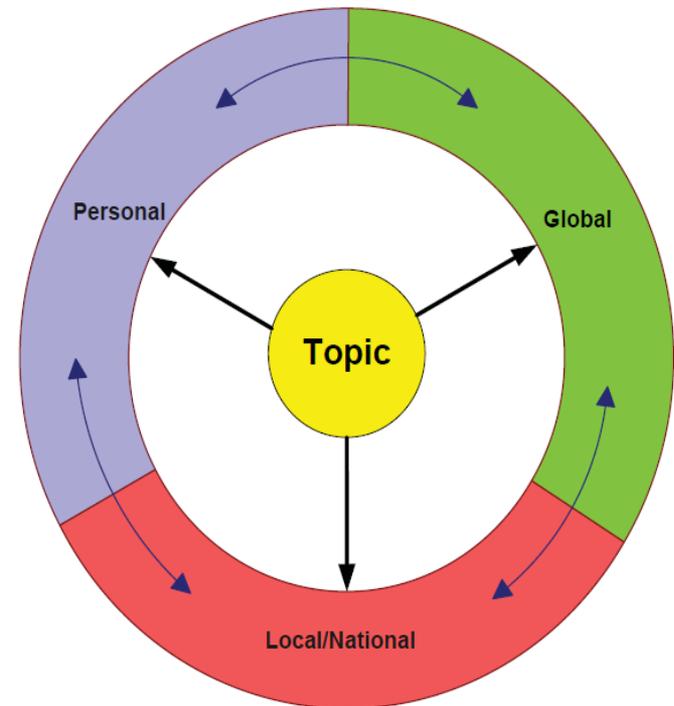
*“If we seek better-developed higher order skills, including critical thinking and creativity, we will have to assess these skills to know if we have been successful.... That is the challenge for teachers and the global assessment community. **How do we assess what we value rather than value what we assess.**” Frank Crawford [2011] Teachmeet blog*



6. Offer creative offerings in a broad and balanced curriculum

Example: IGCSE Global Perspectives aims to develop learners who are:

- ▶ “independent and empowered to take their place in an **ever-changing, information-heavy, interconnected world**”
- ▶ “enquire into and **reflect on issues independently and in collaboration with others** from a variety of **different cultures, communities and countries**”
- ▶ “Can **support judgements** with lines of reasoning”
- ▶ “Can **communicate sensitively** with people from a variety of backgrounds”
- ▶ “work **independently** as well as part of a **team**, directing much of their own learning with the **teacher as facilitator**”



7. Focus on school culture, the informal / hidden curriculum and extra curricula activities

School mission and vision

Hidden and Informal Curriculum

School culture

Student leadership

community work

sport

Interstitial learning

competitions

music

school trips

Duke of Edinburgh's award

Qualifications are not the same as curriculum



Inspiring Teaching: **Excellent Teachers:**

Source: implementing the curriculum with Cambridge guide

1. Have mastery of and a passion for their subject area
2. Encourage learners to engage actively in their own learning
3. Connect learning to the real world, other topics in the subject, other disciplines and the experience of learners
4. Understand and apply assessment for different purposes
5. Teach for understanding as well as coverage by scaffolding learning in the student's zone of proximal development
6. Use a variety of teaching strategies and activities appropriately
7. Are collaborative and supportive colleagues in the school and the school's community considering themselves as mentors as well as teachers
8. Are reflective and creative practitioners engaged in continuous professional learning

What about exams?

- ▶ Examinations sometimes painted as the **enemy** of good education and a barrier to innovation

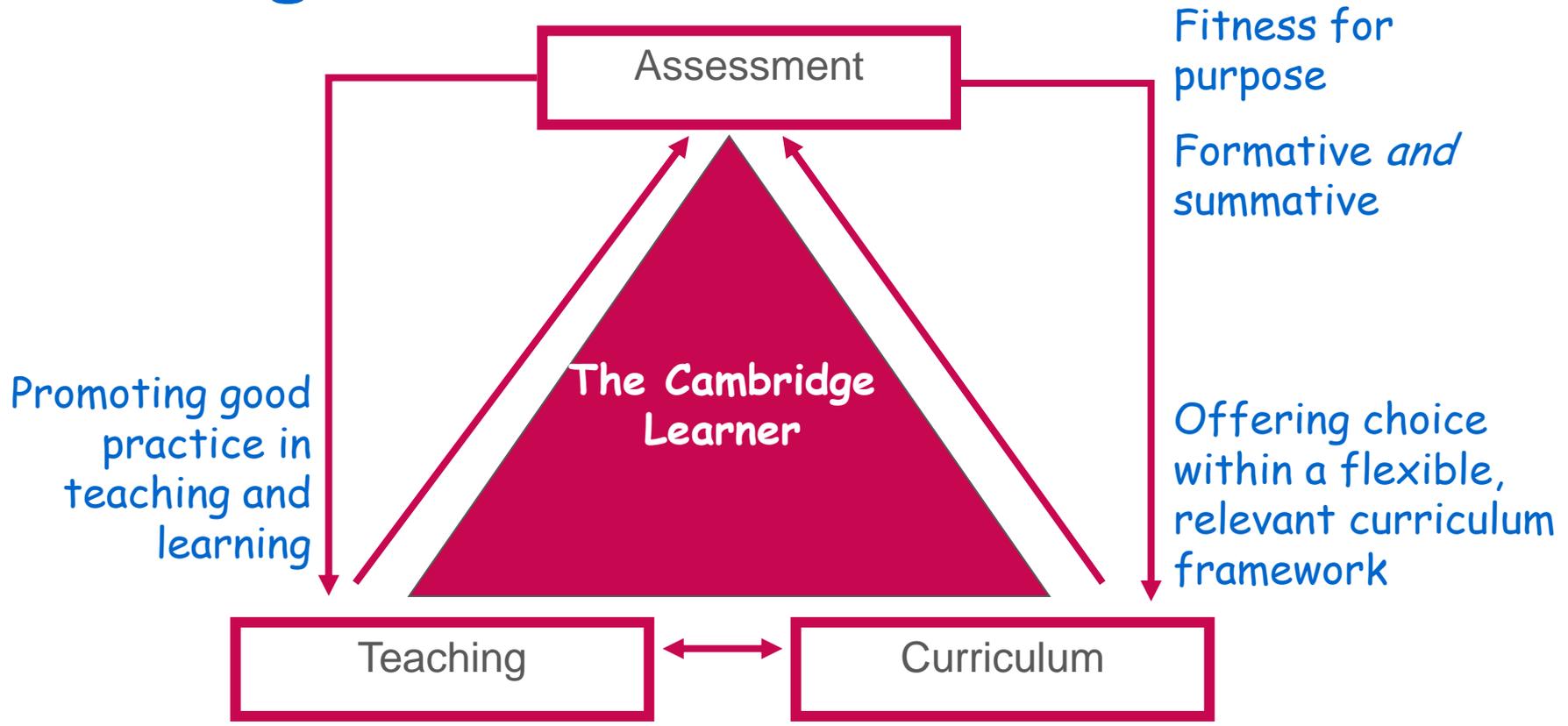


Exam syllabuses should embody a philosophy

- Of curriculum
- Of pedagogy

Qualifications and Examinations systems have a responsibility to ensure both

Assessing what we value not just valuing what we assess



Possible breakout questions

- ▶ What do you do well in your school in terms of building learning power?
- ▶ What are the obstacles you face and how can these be overcome?
- ▶ What small changes could you make to implement the 5 Es
Envisioning, embarking, embedding, embodying and extending?
- ▶ Do you develop the concept of selective depth in your subject area? How could this be developed?



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