

# *Cognition, Character and Certificates: Can We Have It All?*

**Guy Claxton**

King's College London

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# *What is “character”?*



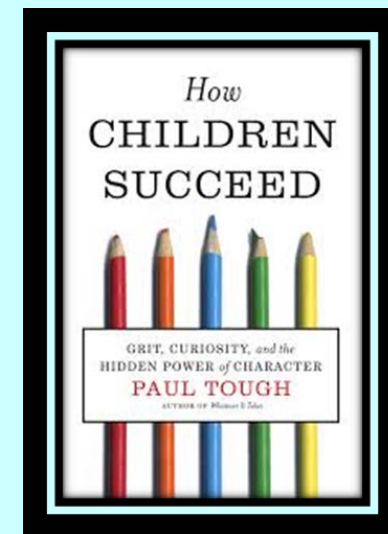
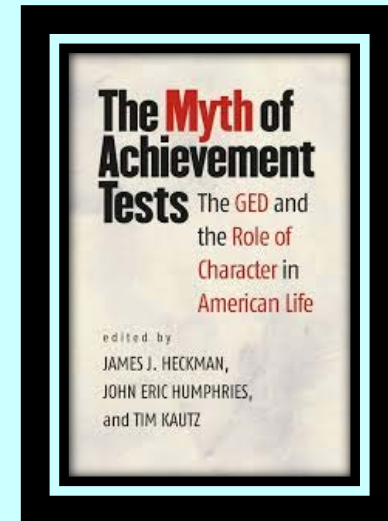
- ‘Good character’ should make for a fulfilled and harmonious life – both personally and socially
  - Talking of character involves daring to be moral
- Default settings of the mind
  - Dispositions, inclinations, attitudes (‘habits’)
- Tendencies to *respond spontaneously* to certain kinds of situation
  - Especially psychological and social challenge and conflict
- Character is about *behaviour*, not knowledge, reasoning or understanding

# Some character dispositions

When I find myself in this situation	I tend to respond like this	And not like this
Find a wallet	Hand it in (honest)	Gut it for cash and cards
Someone in distress	Comfort them (compassionate)	Walk on by and rationalise
Someone in need	Help them (kind; generous)	Be selfish / too busy
Someone wrongs you	Talk and make up (forgiving)	Hold a grudge
I behaved badly	Apologise (humble)	Blame and defend
Don't know or understand	Enquire (curious)	Pretend or bluster
Find something difficult	Persist intelligently (resilient)	Give up
Join a project team	Help it work well (leaderly)	Gossip and criticise

# Character matters

- “Achievement tests predict only a small fraction of the variance in later-life success.”
- “They do not adequately capture such qualities as perseverance, self-control, attentiveness, resilience to adversity, openness to experience, empathy and tolerance of diverse opinions.”
  - NB All involving self-regulation / executive function
- “Learning habits have strong effects on educational attainment...but have additional effects on important life outcomes beyond their effects on schooling.”
- “These habits can be enhanced, and there are proven and effective ways to do so.”
  - James Heckman et al, *Improving Non-Cognitive Skills to Promote Life Success*, OECD 2013

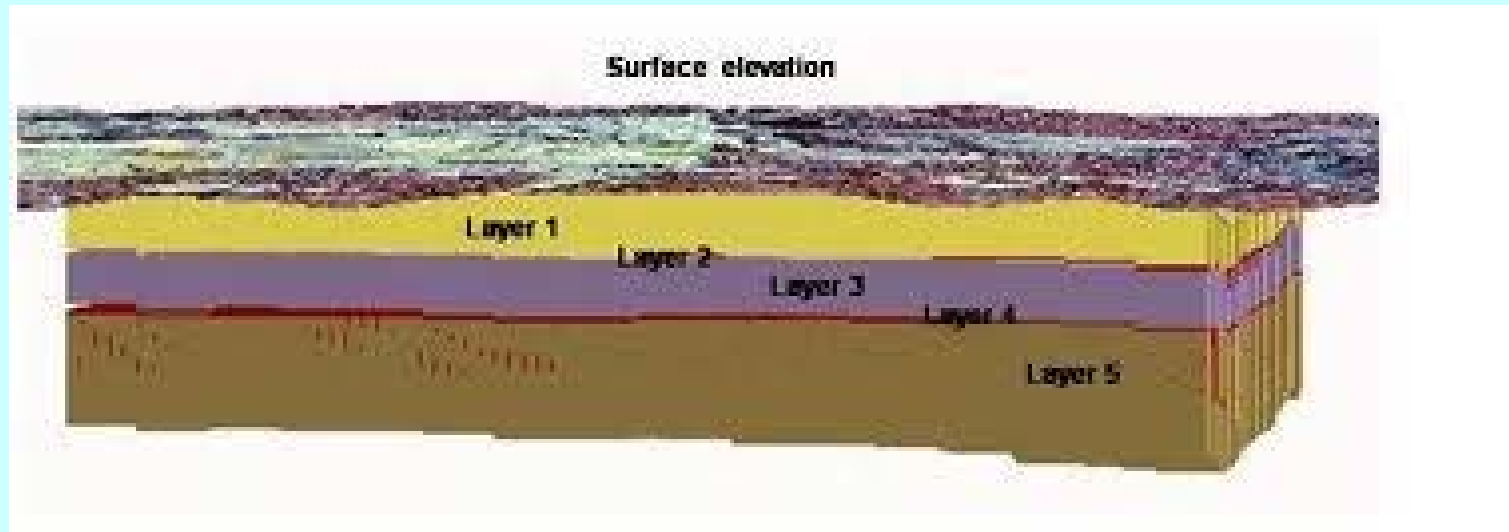


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- Grades are **necessary** to get you through some important portals, but they are **not sufficient** to ensure that you prosper once you are on the other side



# Classroom layers of learning

- **Knowledge** (information, concepts, ideas, theories...)
- **Literacies and expertise** (linguistic, mathematical, digital...)
- **Learning dispositions** (attitudes, beliefs, habits)
- **Values and interests** (passions, vocations, identity)



- **NB These are all going on in every lesson**

# You can't not be coaching character

- History PLUS credulity
- History PLUS criticality
- Magnets PLUS curiosity
- Magnets PLUS passivity
- Fractions PLUS experimentation
- Fractions PLUS fear of mistakes
- Reading PLUS pleasure
- Reading PLUS drudgery



# Pleasure in reading

- “There is a significant link between positive attitudes towards reading and scoring well on reading assessments (Twist et al, 2007)”

**AND**

- “Reading enjoyment has been reported as more important for children’s educational *and life* success than their family’s socio-economic status (OECD, 2002)”

**YET**

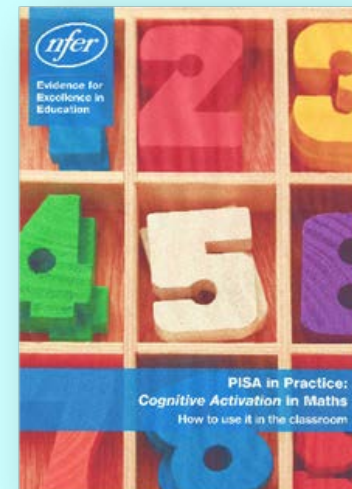
- “Children from lower socio-economic backgrounds read less for enjoyment than children from more privileged social classes (Clark and Rumbold, 2006; Clark and Douglas 2011)”



# How to improve numeracy

## Our teacher...

1. gives us problems that require us to think for an extended time (*persistence*)
2. gives us problems that can be solved in several different ways (*flexibility*)
3. asks us to decide on our own procedures for solving complex problems (*independence*)
4. presents problems that have no immediately obvious method for finding the answer (*experimentation*)
5. presents problems that require us to apply what we have learned in new contexts (*transfer*)



# A VERY BAD MISTAKE

- “Cognitive activation is significantly related to high maths achievement, and greater interest/engagement, across all pupils”
- AND
- “Pupils with low and medium socioeconomic status (SES) profit most from having high levels of cognitive activation in their maths lessons”
- YET
- “Lower-achieving pupils report undertaking such activities less often”
- BECAUSE
- “their teachers may not believe lower ability pupils are able to cope with the cognitive demand”

# Some more mistakes about character and cognition

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- Developing knowledge and dispositions are in competition
- 'Ability' and 'character' are fixed
  - Separate from personality and beliefs
  - Independent of context
  - The major determinant of learning
- Mental habits cannot become disembodied
- Anything that isn't 'traditional' is 'romantic'
- 'Character' is a conspiracy against the 'working-class'
- Facts have to be 'learned' before thinking can start
- You have to drill LT Memory to spare Working Memory



When you have a big enough pile of bricks, they will automatically turn themselves into a house..

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And only one kind of house – the ‘correct’ one!

# Is life a quiz-show or an adventure?

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## Remedying ignorance

- Facts
- Knowledge
- Memorising
  - “committing to memory”
- Right and wrong
- Correcting
- Thinking just happens

## Growing competence

- Ideas
- Possibilities
- Suppositions
- Experimenting
- Thinking develops
- Experiencing
- Debating
- Improving



## Some cognitive scientists



**Mindset**



**Mindware**



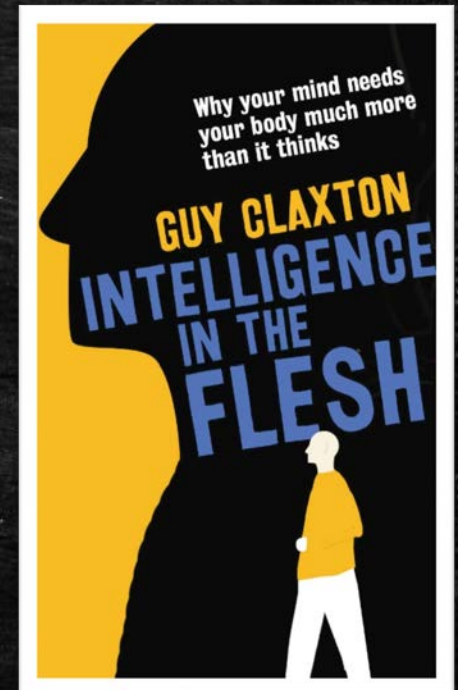
**Working memory**



# Dysrationalia - the apparent inability to think clearly about what is in one's own best interests despite having a high IQ

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- Unwarranted certainty
- Impatience / impulsivity
- Unimaginativeness
- Intolerance for uncertainty / ambiguity / complexity
- Confirmation and my-side bias
- Interoceptive insensitivity
- Mis-wanting





# Working memory: a traditional view

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- “Everyone has a limited working memory – limited to a maximum of about seven items. Any more than that and we get overwhelmed...That’s why it is so important to memorise things. When you memorise something you commit it to LTM, leaving valuable space in Working Memory free for other things...”  
– Daisy Christodoulou, 2014
- “Everything we are currently learning about cognitive science and memory suggests that textbooks are a good thing for pupils – for example the need to sequence instruction so as not to overburden working memory.”  
– Nick Gibb, Nov 2015

**Working memory is an aspect of character  
the brain controlling its maelstrom**

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# Intelligence can be taught

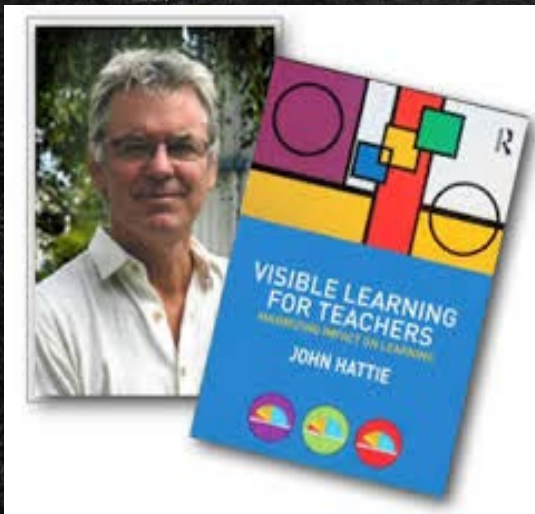
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- “Practice at the simple strategy of triggering the thought ‘Think of the opposite’ can help to prevent a host of thinking errors...including anchoring bias, overconfidence, ‘wisdom of hindsight’, confirmation bias and self-serving bias” (Stanovich 2009)
- “Implementation intentions are formed when you consciously and deliberate declare that ‘When X happens I will do Y’. The triggering of this cue-action sequence on just a few occasions is enough to establish it in the autonomous mind. Implementation intentions have been shown to be effective in increasing the likelihood of successfully achieving a desired habit change” (Gollwitzer 1999)



# Developing dispositions is careful work...

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“Dispositions to learning should be *key performance indicators of the outcomes of schooling*. Many teachers believe that, if achievement is enhanced, there is a ripple effect to these dispositions. However such a belief is not defensible. Such *dispositions need planned interventions*.”

- John Hattie, *Visible Learning* (p40)

# It takes Pervasiveness...

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- "In order for [character education] to succeed, it has to permeate everything in the school, from the language people use, to lesson plans, to how people are rewarded and recognised, to the signs on the wall. If it's not woven into the DNA of an institution it will have minimal impact"
  - David Levin, co-founder of the KIPP schools

- School website
- Communication with parents
- Displays and images
- Report-writing
- Praise
- Lesson design
- Timetable structure
- Feedback and assessment
- Professional development
- Student council
- .....



# And it takes Precision and Progression

We are helping our students to...

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- Trust their own curiosity
- Check what they read and hear
- Help themselves when they are stuck
- Be bold and try new things
- Work well with others
- Use their imagination
- Check and improve their own work
- Seek and value feedback
- Be resourceful
- Enjoy the struggle for mastery
- Practise intelligently
- Be patient and persistent
- Express themselves clearly
- Be self-aware and keen to grow

# *Wren Academy's Ofsted* *character + cognition + certification*

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**The teaching at Wren is stunning.** Lessons are devised to encourage **students** to hypothesise, make connections, **develop ideas and present their thinking in original ways.** Teachers demand that **students assess their own and other's work** in order to help them appreciate how to improve it. As a consequence of these approaches, **students spend a lot of time thinking deeply** and inspectors overheard **powerful learning conversations** as students tried to work out for themselves the answers to questions."



# *Isaac Newton Academy Ofsted*

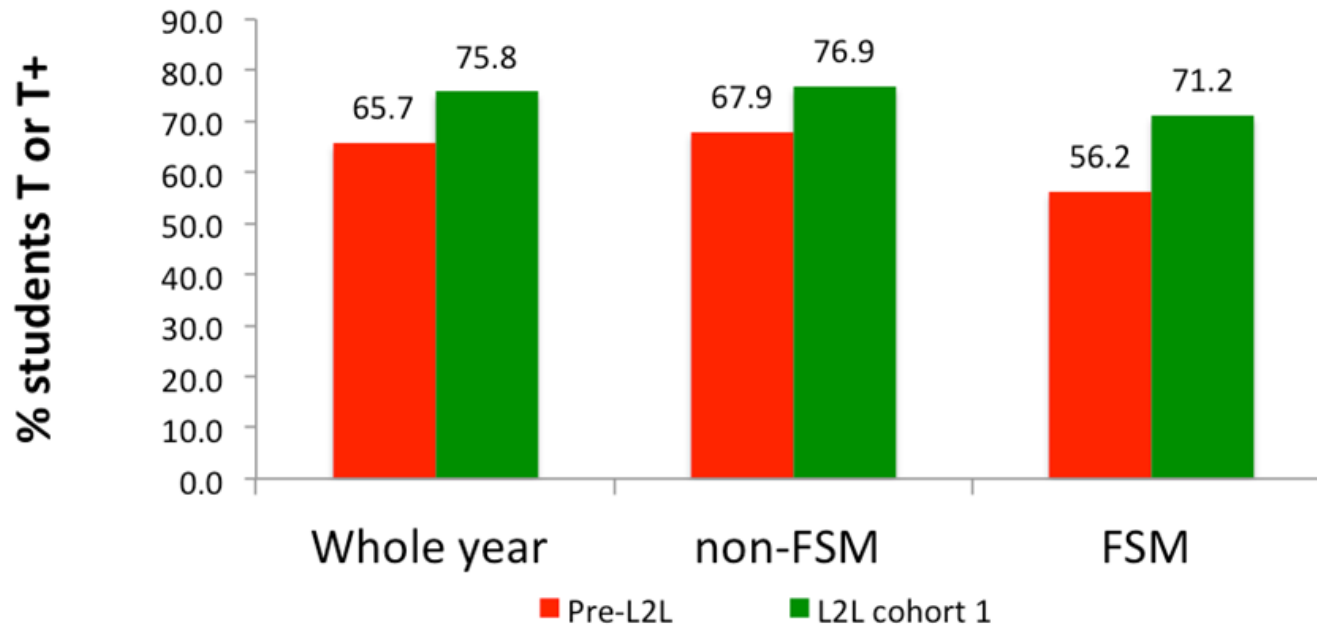
## *Character + cognition + certification*

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- The academy's unique 'BRIDGES' programme enables the students to develop the qualities and skills to become very **well-rounded individuals, exceptionally well equipped for the future world of work.**
- Lessons develop students' knowledge, skills and qualities to **become effective learners, making them well prepared for the future.**
- The achievement of students known to be eligible for additional funding through the pupil premium is outstanding. Their current achievement is similar to that of their peers. The school's current tracking shows that any **gaps have closed.**
- Students have a **passion for learning**, actively contributing to and supporting their own and each other's learning very well...Students make quality responses to their feedback.



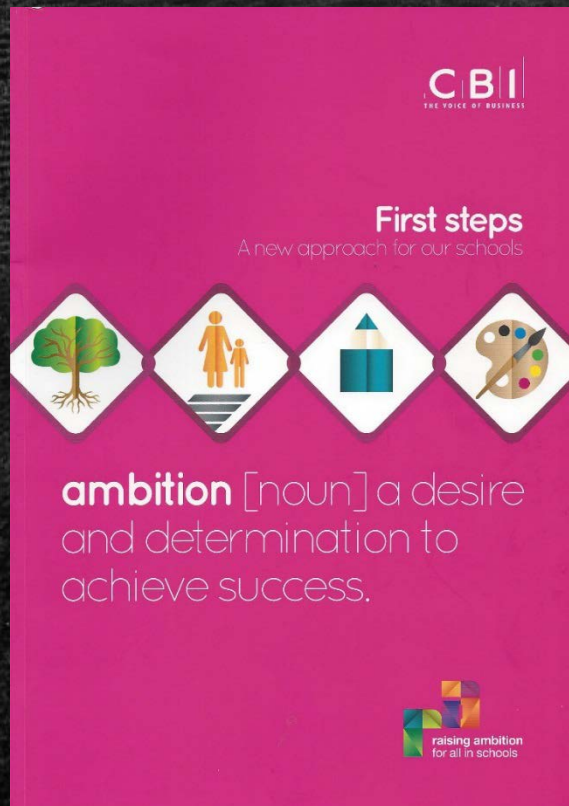
**The impact of Learning to Learn on subject attainment: Percent of students hitting or exceeding their target grades - pre-L2L cohort (current Y11) vs L2L cohort 1 (current Y10)**



# Character + cognition + certificates

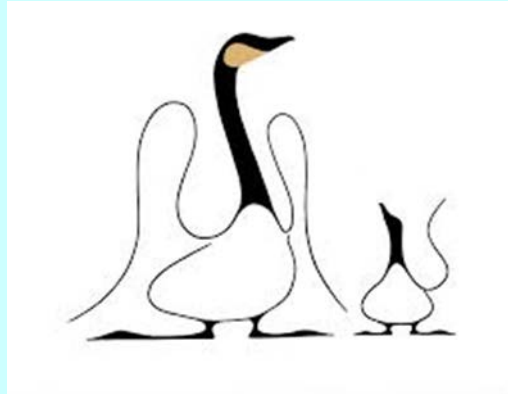
desirable ☒ possible ☒ practical ☒

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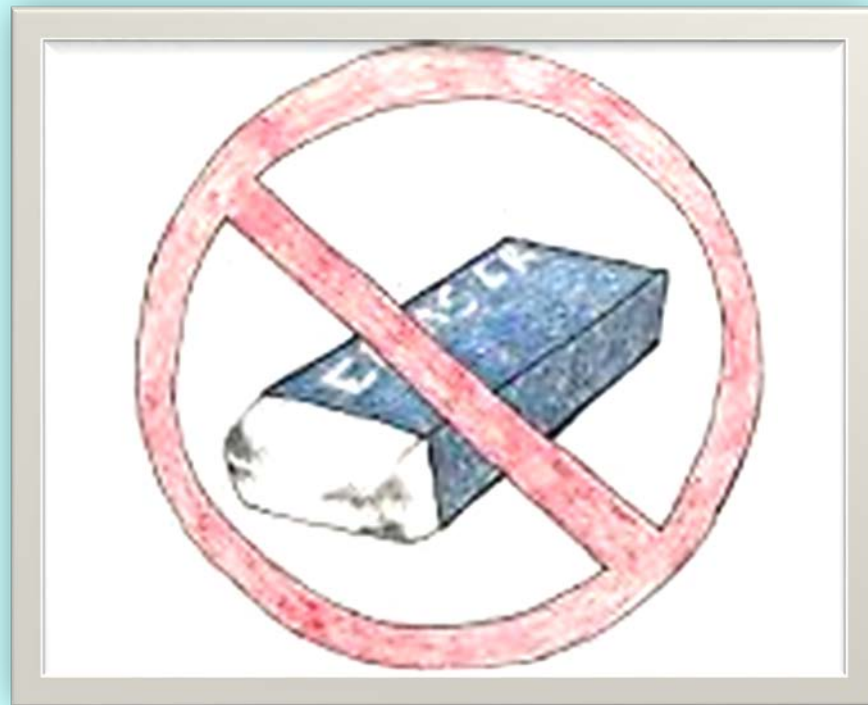
"Rigour in the curriculum is only part of the solution. A culture that extends rigour beyond the merely academic also needs to be part of the solution. This includes defining the whole person we want to develop, and accountability that assesses schools on a wider basis than the narrow measure of exams"

John Cridland, Former Director-General, CBI



- [www.buildinglearningpower.com](http://www.buildinglearningpower.com)
- [www.educatingruby.org](http://www.educatingruby.org)
- [guy.claxton@winchester.ac.uk](mailto:guy.claxton@winchester.ac.uk)

# Instruments of the devil?



## Cultivating self-coaching

- Today's lesson was to be honest quite tough. It ***taught me to ask a lot more questions*** that I usually wouldn't even think about. I don't think I showed much sign of ***persevering*** though... Today I wasn't a strong contributor to my group...but I thought one of my ***strengths was being able to listen...*** I don't think I asked the right ***questions to intensify my learning***. If I was able to ***question myself or others*** more, I think I would have gained a much better understanding of the topic... What ***I need to improve*** on for the next lesson is ***talking about roles and responsibilities in the group...and persevere through tough times***.

- Debbie, Year 9, Bankstown Girls' School, Sydney





# Cultivating curiosity



# Cultivating self-evaluation





*Cultivating  
craftsmanship*

