

Evidence Based Teaching



WHITE PAPER



Teaching is about to embark on a revolution and, like medicine, abandon custom and practice, and fashion and fads to become evidence-based.

GEOFF PETTY

Is teaching evidence based?

Medicine, agriculture and industry employ techniques they know work best.

These top strategies are identified by a statistical method called a meta analysis that makes sense of tens of thousands of research papers.

When education uses this knowledge on a daily basis, it can claim to be evidence-based.

What does a meta analysis tell you?

It directly compares the factors that affect achievement in a very objective way. And tells you which are the most effective.

Why are meta analyses so important?

They help schools avoid the snake oil of marketing as well as the political pressure to adopt unproven methods. Using the best saves teachers' time and energy. Above all, students have the right to be taught using the top proven methods.

Why do visual tools come out on top?

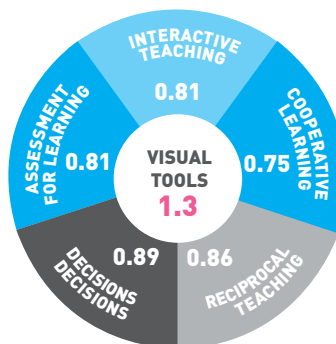
Visual tools display the structure of knowledge and this helps students to organise their thoughts. As Geoff Petty says, seeing "the links between discrete bits of knowledge... enables this productive thinking".

They also prompt, focus and sustain learning conversations —the cornerstone of effective learning. As a result, students assess their learning while they are working which is the hallmark of an expert learner.

The implications for schools of this knowledge are enormous, ranging from CPD to observations, and from audits to plans.

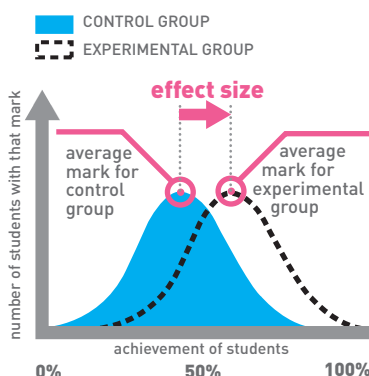
We are moving from the art to the science of teaching.

What are the top six teaching strategies?



Geoff Petty bought together the works of Hattie and Marzano and found the six strategies with the highest effect sizes. You can see that they all involve active learning and centre around learning conversations that provide feedback. You'll also notice the top spot goes to visual tools with an effect size that is equivalent to raising scores by over 2 GCSE grades.

How are effect sizes calculated?



Control groups are taught with conventional methods and the experimental group with a new technique. Both groups are given a pre and post test.

Results are directly compared as you can see on the left. The shift, positive or negative, is measured in standard deviation units and is termed the effect size.

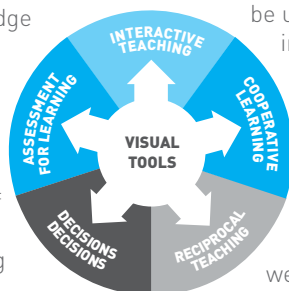
The effect size is translated into percentile gain through the bell curve of normal distribution.

From this we can conclude that an effect size of 0.5 is equivalent to two adjacent grades at GCSE or A level. And here lies the full significance of these meta studies.

Is it good news?

You bet it is. Especially when you consider that the effects are additive, accumulating benefits by employing all the strategies.

Furthermore, visual tools can be used to optimise the impact of the other strategies. Take assessment for learning. Making sure the learning is visible improves both assessment and feedback. As well as being quicker.



REFERENCES

Hattie, J. (2009) Visible Learning. Routledge
Marzano, R.J. et al (2001) Classroom Instruction that Works. ASCD, USA
Petty, G. (2006) Evidence Based Teaching Nelson-Thornes