12 Educational Research Myths

[26th December 2017](https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/) [John Dabell](https://www.teachertoolkit.co.uk/author/johndabell/) [12 Comments](https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/#comments) [ability grouping](https://www.teachertoolkit.co.uk/tag/ability-grouping/), [Abraham Maslow](https://www.teachertoolkit.co.uk/tag/abraham-maslow/), [Andy Ash](https://www.teachertoolkit.co.uk/tag/andy-ash/), [bandwagon](https://www.teachertoolkit.co.uk/tag/bandwagon/), [Brain Gym](https://www.teachertoolkit.co.uk/tag/brain-gym/), [Chartered College of Teaching](https://www.teachertoolkit.co.uk/tag/chartered-college-of-teaching/), [critical consumers](https://www.teachertoolkit.co.uk/tag/critical-consumers/), [digital natives](https://www.teachertoolkit.co.uk/tag/digital-natives/), [Education](https://www.teachertoolkit.co.uk/tag/education/), [evidence](https://www.teachertoolkit.co.uk/tag/evidence/), [Fads](https://www.teachertoolkit.co.uk/tag/fads/), [hierachy of needs](https://www.teachertoolkit.co.uk/tag/hierachy-of-needs/), [Homework](https://www.teachertoolkit.co.uk/tag/homework/), [Howard Gardner](https://www.teachertoolkit.co.uk/tag/howard-gardner/), [Knowledge](https://www.teachertoolkit.co.uk/tag/knowledge/), [learning pyramid](https://www.teachertoolkit.co.uk/tag/learning-pyramid/), [Learning Styles](https://www.teachertoolkit.co.uk/tag/learning-styles/), [multiple intelligences](https://www.teachertoolkit.co.uk/tag/multiple-intelligences/), [neuromyth](https://www.teachertoolkit.co.uk/tag/neuromyth/), [Parents and Teachers for Excellence](https://www.teachertoolkit.co.uk/tag/parents-and-teachers-for-excellence/), [Pete Boyd](https://www.teachertoolkit.co.uk/tag/pete-boyd/), [pseudo-science](https://www.teachertoolkit.co.uk/tag/pseudo-science/), [Research](https://www.teachertoolkit.co.uk/tag/research/), [School](https://www.teachertoolkit.co.uk/tag/school-2/), [teaching](https://www.teachertoolkit.co.uk/tag/teaching/)

Reading Time: 12 minutes

What was the last bandwagon you jumped on?

We’ve all been on them – you might even be sat on one now. Some have even driven them. They’ve got shiny wheels, they go fast and they promise the earth.

What am I talking about? Zeitgeist bandwagons carrying magic beans, magic bullets and magic potions, in the form of educational research. These ideas are attractive when you’re trying your best to improve student outcomes but they are often fuelled by faulty claims and dodgy research which is hard to spot. It’s easy to get hoodwinked and carried away by the circus music. We need to beware of quick-fixes and anything built on quicksand.

12 of the best ‘worst’ research myths and legends:

The [bandwagon effect](https://en.wikipedia.org/wiki/Bandwagon_effect) is a dangerous phenomenon because even in the face of opposing evidence, passengers can be blinded by science – made worse by ‘participation virus’; the ease of sharing content on social media. [Kevin Harcombe](http://redlandsprimaryhants.com/) says in his outstandingly astute book, ‘[How to survive and thrive as a headteacher](http://amzn.to/2zbzYPZ)’:

“Snake-oil salesmen used to roam the Wild West selling patent miracle cures: they are mirrored in current education by pedlars of wares that promise to interest, excite, inspire and raise attainment. They often come couched in scientific or pseudo-scientific language, but the empirical background is invariably weak.”

There’s a lot of duff stuff and tosh out there so, it’s time to jump off, go spring cleaning and scam-busting and look at the evidence and reveal some of the Emperor’s with no clothes.

1. The Learning Pyramid

Described as “the Loch Ness Monster” of educational theory, the learning pyramid is a “fake” ([De Brutckere et al 2015](http://amzn.to/2BwkHM4)) and its time to debunk it. We probably all know this pyramid theory as

* 10 percent of what they READ
* 20 percent of what they HEAR
* 30 percent of what they SEE
* 50 percent of what they SEE and HEAR
* 70 percent of what they SAY and WRITE
* 90 percent of what they DO

Myths have many fathers but the learning pyramid appears to have started life loosely associated with [Edgar Dale’s cone of experience](http://acrlog.org/tag/learning-theories/), a visual device which summarised his classification system for different types of mediated learning experiences. This evolved into a pyramid in the early 1960s (commonly attributed to the National Training Laboratories in the US) and since then has taken on a life of its own especially in CPD PowerPoints.

The nicely rounded off % figures often quoted could go back to 1912 or prior to that, but they have no basis and are impossible to interpret or verify – it’s [bogus information](https://www.worklearning.com/2006/05/01/people_remember/).

As [Will Thalheimer(2015)](https://www.td.org/Publications/Author.aspx?ItemId=837C5A35699F4496AEF1473ADA389636) points out: “People do not necessarily remember more of what they hear than what they read. They do not necessarily remember more of what they see and hear than what they see. The numbers are nonsense and the order of potency is incorrect”. Somehow the “truthiness” of information seems more believable when presented diagrammatically, especially when in pyramid form ([Newman et al 2012](https://www.ncbi.nlm.nih.gov/pubmed/22869334)). (See also the [Mehrabian myth](https://speakingaboutpresenting.com/presentation-myths/mehrabian-nonverbal-communication-research/) relating to nonverbal communication).

Verdict:

[The Learning Pyramid is total tosh!](https://twitter.com/share?text=The+Learning+Pyramid+is+total+tosh%21%C2%A0&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=The+Learning+Pyramid+is+total+tosh%21%C2%A0&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

2. Maslow’s Hierarchy of Needs

Apart from the % learning pyramid and the ones in Giza, one of the most famous pyramids of all time is [Maslow’s pyramid showing a hierarchy of needs](http://psychclassics.yorku.ca/Maslow/motivation.htm) even though [Abraham Maslow](https://en.wikipedia.org/wiki/Abraham_Maslow) himself didn’t actually frame it as a pyramid. He also added two more layers to the hierarchy (‘knowing and understanding’ and ‘aesthetics’) even though people mostly refer to a five layered pyramid.

While Maslow’s hierarchy of needs, and the research methods he used to derive his conclusions were flawed, the pyramid is still frequently used and referred to in educational circles and beyond. In 1962 Maslow described how surprised he was that people “swallowed it whole” and that at the time nobody repeated his motivation theory, “tested it, or really analysed it or criticised it.”

Maslow’s non-existent pyramid was eventually tested after his death and researchers found  that the hierarchy of needs makes intuitive sense but is completely wrong because [“the actual structure of motivation doesn’t fit the theory.”](http://www.bbc.co.uk/news/magazine-23902918) So, why do we still refer to a flawed model of human needs and motivations? Maslow himself offered no empirical evidence for his theory and the absence of solid evidence has tarnished his status.

Verdict:

[Maslow’s Hierarchy of Needs is decidedly defective.](https://twitter.com/share?text=Maslow%E2%80%99s+Hierarchy+of+Needs+is+decidedly+defective.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Maslow%E2%80%99s+Hierarchy+of+Needs+is+decidedly+defective.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

3. Learning styles

Once upon a time, learning styles were all the rage. It wasn’t uncommon to hear teachers pigeon-holing their students as ‘visual, auditory or kinaesthetic’ learners and organising classroom activities to match preferred learning styles. But, “[monsters never die](https://en.wikipedia.org/wiki/Abraham_Maslow)” and the worrying thing is some teachers still do,  “a zombie theory, staggering from classroom to classroom, mauling lesson plans” ([Bennett , 2013](http://behaviourguru.blogspot.co.uk/2013/06/teacher-proof-why-educational-research.html)) but we need to stop propagating this myth ([Kirschner, 2017](http://www.sciencedirect.com/science/article/pii/S0360131516302482)). It’s “[a rusting can of worms](http://www.learningspy.co.uk/learning/some-thoughts-on-learning-styles-2/)” (Didau, 2011) that keeps on coming back at us.

[An initial review of the huge research literature](https://www.pearsoned.com/education-blog/mythbusters-review-research-learning-styles/) (by Pearson) on learning styles appears to support its efficacy, but a closer look shows that some articles have been published in peer-reviewed journals and “under the radar” of legitimate scholarly critique ([Lilienfeld et al. 2009](https://www.amazon.co.uk/Great-Myths-Popular-Psychology-Misconceptions/dp/1405131128)). The learning styles approach been exposed and vacuumed up by [eminent academics](https://www.theguardian.com/education/2017/mar/12/no-evidence-to-back-idea-of-learning-styles) as a ‘[neuromyth](https://www.frontiersin.org/articles/10.3389/fpsyg.2017.01314/full)’ who say there is a shocking lack of evidence to support it. They say that  there is no coherent framework of preferred learning styles which is confusing classifying learners can lead to the assumption of fixed or rigid learning style. Take a look at the [video](https://www.youtube.com/watch?v=4bfMXKGhcSQ" \t "_blank)from [Carol Lethaby and Patricia Harries](https://academic.oup.com/eltj/article-abstract/70/1/16/2450153) and their brilliant exploration of neuromyths. [The Educational Endowment Foundation](https://educationendowmentfoundation.org.uk/resources/teaching-learning-toolkit/learning-styles/) supports this view saying:

“There is very limited evidence for any consistent set of learning ‘styles’ that can be used reliably to identify genuine differences in the learning needs of young people, and evidence suggests that it is unhelpful to assign learners to groups or categories on the basis of a supposed learning style”.

Although the use of learning styles has been [challenged for years](http://3csn.org/files/2010/04/Dembo_Howard_2007_Learning-Styles.pdf) as a major myth, the evidence has had little impact on its continued practice. Can we recommend learning styles as an effective strategy for improving outcomes? No, we’ve been [VARK](http://vark-learn.com/introduction-to-vark/biography/?p=biography)ing up the wrong tree!

[Willingham (2009)](https://www.aft.org/sites/default/files/periodicals/WILLINGHAM%282%29.pdf) states, “Children are more alike than different in terms of the way they think and learn” and so let’s get this straight: “the myth is that our preferences for experiencing information presented in a particular mode, or style, leads to improved outcomes. It doesn’t.” ([Didau, 2016](http://www.learningspy.co.uk/myths/whats-the-difference-between-modalities-and-learning-styles/%22%20%5Ct%20%22_blank))

Verdict:

[Learning Styles is hogwash mixed with codswallop.](https://twitter.com/share?text=Learning+Styles+is%C2%A0hogwash+mixed+with+codswallop.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Learning+Styles+is%C2%A0hogwash+mixed+with+codswallop.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

4. Left-Right Brain

Is Chloe a left-brained dominant learner?

Why pigeon-hole a child with a false binary label? The idea that we are dominantly left- or right-brained has never had a concrete basis in neuroscience, “and now the best evidence we have is convincingly negative” so “labelling people as left or right-brained is no better than approaching people according to their astrological sign or blood type” ([Novella, 2014](https://sciencebasedmedicine.org/left-brain-right-brain-myth/)).

This brainiac maniac myth has convinced us that:

* a right-brainer is intuitive, spontaneous, emotional, nonverbal, visual, artistic, holistic, playful, diffuse, symbolic, physical
* a left-brainer is analytical, linear, explicit, sequential, verbal, concrete, rational, active, goal-oriented

The concept of hemisphericity is just full of jelly and using it to [“to guide and direct educational practice is highly questionable.”](http://www.oecd.org/edu/ceri/neuromyth6.htm)Yet there is no direct scientific evidence supporting the idea that different thinking styles lie within each hemisphere and brain scans the two hemispheres are in fact highly complementary ([Nielsen et al 2013](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0071275)). The brain is a single, spectacularly complicated, and profoundly integrated system:

“And far from having separate lives, the two halves work together. They are not isolated systems that compete or engage in some kind of cerebral tug-of-war” ([Kosslyn and Miller, 2014](https://www.psychologytoday.com/blog/the-theory-cognitive-modes/201405/left-brain-right-brain-two-sides-always-working-together%22%20%5Ct%20%22_blank))

Will the [bunk](https://www.livescience.com/39373-left-brain-right-brain-myth.html) myth die away? [Probably not.](https://www.psychologytoday.com/blog/brain-myths/201206/why-the-left-brain-right-brain-myth-will-probably-never-die)

Verdict:

[Left-Right Brain is a no brainer: simplistic and dubious.](https://twitter.com/share?text=Left-Right+Brain+is+a+no+brainer%3A+simplistic+and+dubious.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Left-Right+Brain+is+a+no+brainer%3A+simplistic+and+dubious.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

5. Multiple Intelligences

[Howard Gardner’s](https://howardgardner.com/) [multiple intelligences (MI)](https://howardgardner.com/multiple-intelligences/) theory is well-known and has been used as a basis for a more flexible type of teaching and learning but it has never been supported by research and is best described as a ‘flaky’ theory. MI has been discredited as a model of how we learn by neuroscientists and education experts. [John White](https://www.wtc.ie/images/pdf/Multiple_Intelligence/mi11.pdf) says that the eight intelligences have not been shown to exist and the [“further one looks into the theory, the more unsubstantiated it appears](http://www.independent.co.uk/news/education/education-news/john-white-multiple-intelligence-its-a-flaky-theory-518528.html)” because “there are eight criteria by which an intelligence is identified, but no reason is given for selecting them”.

The different types of intelligence proposed by Gardner are hard to measure and difficult to assess and some of the intelligences, such as interpersonal and intrapersonal, are problematic to even define clearly. [Lynn Waterhouse (2006)](http://alliance.la.asu.edu/temporary/students/katie/MultipleIntelligenceMusic2.pdf) found that Gardner declined to postulate what he thinks the components of the various intelligences might be or how these might be measured and has only provided hazy and ambiguous descriptions of them.

The great majority of scientists do not accept the MI theory and see it as a confused and nebulous set of claims that have not been empirically validated. [Professor John Geake (2008)](https://eric.ed.gov/?id=EJ799273) says:

“Neuroimaging studies do not support multiple intelligences; in fact, the opposite is true. Through the activity of its frontal cortices, among other areas, the human brain seems to operate with general intelligence, applied to multiple areas of endeavour.”

Verdict:

Verdict:

[Evidence of ‘Multiple Intelligences’ is multiple mush!](https://twitter.com/share?text=Evidence+of+%27Multiple+Intelligences%27+is%C2%A0multiple+mush%21&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Evidence+of+%27Multiple+Intelligences%27+is%C2%A0multiple+mush%21&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

6. You Only Use 10% of Your Brain

This myth has been[revived in the film Lucy](https://www.youtube.com/watch?v=_qdx06sL4-o) and plenty of people believe it. Says who? The 10% idea is 100% false. This neuromyth is [one of the most prevalent](https://anatomia.icb.ufrj.br/pdfs/HerculanoHouzel2002TheNeuroscientist.pdf) and its one we’ve all heard of and continue to hear doing the rounds. Attributed incorrectly to super-brain Albert Einstein, you’ll see it on posters in classrooms!

Neurologist Barry Gordon at Johns Hopkins School of Medicine in Baltimore says that though an alluring idea, [the 10% myth is so wrong it is almost laughable](https://www.scientificamerican.com/article/do-people-only-use-10-percent-of-their-brains/). Brain imaging research techniques such as PET scans (positron emission tomography) and fMRI (functional magnetic resonance imaging) clearly show that the vast bulk of the brain does not lie unused. Although not all parts are used at once, over the course of a whole day, just about all of the brain is used.

Does 90% of our brain get unused? Of course not, “[Brain activity scans show that even the most menial tasks activate many parts of it](http://www.bbc.com/future/story/20171017-do-we-use-10-of-our-brains).” As [Dr Eric Chudler](https://brainconnection.brainhq.com/2013/04/17/myths-about-the-brain-10-percent-and-counting/) says, “It appears that there is no hidden storehouse of untapped brain power. We use all of our brain.”

Verdict:

[The myth that we use 10% of our brain, is 100% tripe.](https://twitter.com/share?text=The+myth+that+we+use+10%25+of+our+brain%2C+is%C2%A0100%25+tripe.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=The+myth+that+we+use+10%25+of+our+brain%2C+is%C2%A0100%25+tripe.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

7. Brain Gym

In a brilliant article, [Charlie Brooker](https://twitter.com/charltonbrooker?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor) once warned us to, “[Man the lifeboats, the idiots are winning.](https://www.theguardian.com/commentisfree/2008/apr/07/education)”

[Brain Gym](http://www.braingym.org/about) is a classic piece of snake oil in education that has been mis-sold to thousands of schools and has been peddled by many in order to cash in on the neuroscience gold rush. It has [“bad science”](http://archive.senseaboutscience.org/data/files/resources/55/braingym_final.pdf) written all over it [“with a scientific explanatory framework that is barkingly out to lunch.”](http://www.badscience.net/2006/03/squabbles-in-class/)

Created by [Paul and Gail Dennison](http://www.braingym.org/history) in the 1980s, Brain Gym is the shop-front name for what they call [Education Kinesiology](https://braingym.org.uk/) or Edu-K. Brain Gym is a movement based programme based on the idea that  moving leads to optimal learning and “we empower all ages to reclaim the joy of living.” The founders claim that laying brain-training games can help improve your memory, concentration or intelligence and the Brain Gym website makes lots of grand statements but these are backed by zero evidence.

Brain Gym do cite evidence on their site but the research they drew on has been [widely discredited.](http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1167&context=educ_fac_pubs) Of the few published studies one involved four participants, one of whom was the author of the study and the others were published in a journal that required the authors to pay for publication. Another study had severe methodological failings. There is no evidence that Brain Gym improves academic skills, listening and thinking skills, or learning disability deficits ([Hyatt, 2007](http://journals.sagepub.com/doi/abs/10.1177/07419325070280020201))

[Watson and Kelso (2014)](https://pdfs.semanticscholar.org/8f82/69575e9471324fe0fa38d26a3920c063045b.pdf) found Brain Gym “does not produce clear and substantial differences in academic engagement” but “even with the inadequacy of empirical support, Brain Gym is still an often promoted intervention” and “those who buy into the program are either children who naively assume their teachers know what they are doing or teachers who are bamboozled by the pseudoscientific jargon or seduced by charismatic and enthusiastic believers.” ([Carroll 2009](http://www.skepdic.com/braingym.html))

Verdict:

[Brain-Gym is ludicrous and pointless flim-flam.](https://twitter.com/share?text=Brain-Gym+is%C2%A0ludicrous+and%C2%A0pointless+flim-flam.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Brain-Gym+is%C2%A0ludicrous+and%C2%A0pointless+flim-flam.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

* [Bad science](https://www.theguardian.com/commentisfree/2011/may/28/bad-science-goldacre-brain-gym) – Ben Goldacre
* [Brain Gym is pointless for pupils](http://www.dailymail.co.uk/news/article-1237042/Brain-gym-pupils-pointless-admits-Balls.html) – The Daily Mail.

8. Pupils Are Digital Natives

There is the idea that children are super-savvy highly information-competent digital natives who code for fun and can multitask with various technologies. But do these [Homo Zappiens](https://www.oecd.org/edu/ceri/38360892.pdf) really exist?

This is a myth. There are very few pupils who are digital whizz-kids and “many, probably most, are rarely progressing beyond the trivial and banal” [(Angela McFarlane, 2014).](https://www.tes.com/news/school-news/breaking-views/idea-young-people-are-digital-natives-a-myth) A number of research studies note that students do not really have deep knowledge of technology because they flit from one piece of technology to another like butterflies and their “fluttering” leads to a very fragile network of knowledge at best.

There is overwhelming evidence that the homo zappiens and the multitasker do not exist and as [Paul A. Kirschner and Pedro De Bruyckere (2017)](https://www.gwern.net/docs/psychology/2017-kirschner.pdf) note, students task switch which negatively impacts learning and educational design which assumes students are information-savvy digital natives hinders rather than helps learning.

Verdict:

[Pupils are Digital Natives is all bilge and piffle.](https://twitter.com/share?text=Pupils+are+Digital+Natives+is%C2%A0all+bilge+and+piffle.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Pupils+are+Digital+Natives+is%C2%A0all+bilge+and+piffle.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

9. Boys Are Better At Maths Than Girls

There is still a stereotype that boys are naturally better at maths than girls which is simply untrue. Girls are not inherently less good at maths than boys. Yes, in lots of studies boys do achieve better scores than girls, but in other studies girls perform better, but the differences aren’t biological but social and cultural.

In general, [gender differences in maths performance](http://psycnet.apa.org/journals/bul/136/6/1123/) are small and as Dr Ansari says in this [video](https://www.youtube.com/watch?time_continue=15&v=la0Z6nOPu2A), “all the research that we know of shows us there are more gender similarities than there are gender differences.” [Professor Paola Sapienza](https://www.kellogg.northwestern.edu/kwo/sum08/faculty/sapienza.htm) found “The so-called gender gap in maths skills seems to be at least partially correlated to environmental factors” and the gap doesn’t exist in more gender-equal societies. Boys outperform girls in maths in cultures where there is an expectation that boys are stronger than girls in maths (and other skill areas).

It is crucial therefore we grow the awareness around gender similarities and that everyone has a maths brain (see [Jo Boaler’s video](https://www.youtube.com/watch?time_continue=291&v=3icoSeGqQtY)) so we can avoid the ‘boys are better at maths’ mindset which is creating a gender gap in STEM subjects.

Verdict:

[Boys perform better than girls at maths is binary balderdash.](https://twitter.com/share?text=Boys+perform+better+than+girls+at+maths+is+binary+balderdash.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Boys+perform+better+than+girls+at+maths+is+binary+balderdash.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

10. Homework

It has been described as an inefficient, jaded and bankrupt practice. [Dylan Wiliam](https://www.youtube.com/watch?v=6ajXJ6PbDcg) said once that “most homework teachers set is crap.” [Alfie Kohn](http://www.alfiekohn.org/homework-myth/) (2006) in [‘The Homework Myth’](http://amzn.to/2BN9CH4) thinks schools should set their default policy to ‘no homework’. Why? There is no evidence of any academic benefit supporting the value of homework for primary age children ([John Hattie says it “has an effect of zero”)](http://www.bbc.co.uk/programmes/p0252t4j) and there are grim uncertainties about whether homework benefits older students.

Even though Hattie says that 5-10 minutes of practising what was taught that day at school has the same effect as 1-2 hours does, an [OECD report](http://www.keepeek.com/Digital-Asset-Management/oecd/education/does-homework-perpetuate-inequities-in-education_5jxrhqhtx2xt-en#page1) on data from the PISA survey looked at homework among 15-year-olds and found socio-economically advantaged students and those who attended socio-economically advantaged schools tended to spend more time doing homework than other students which could perpetuate inequalities in education.

Is homework a meaningful contribution to learning? Does it promote higher achievement and teach study skills and responsibility? No, it’s all pain for no gain and schools have proven that educational excellence is possible by ditching it but it could further widen inequality.

Verdict:

[Excellence is possible by ditching homework or it could further widen inequality.](https://twitter.com/share?text=Excellence+is+possible+by+ditching+homework+or+it+could+further+widen+inequality.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Excellence+is+possible+by+ditching+homework+or+it+could+further+widen+inequality.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

11. Ability grouping

Policy makers have repeatedly supported the practice and many parents back it, yet research regularly tells us that ability grouping has no academic benefits and there is a severe negative impact for students in the lowest groups. Professor Rob Coe and colleagues at Durham University published ‘[What makes great teaching](https://www.suttontrust.com/wp-content/uploads/2014/10/What-makes-great-teaching-FINAL-4.11.14-1.pdf)?’. The research warns that many common practices can be harmful to learning and have no grounding in research including grouping students by ability. They note:

“Evidence on the effects of grouping by ability, either by allocating students to different classes, or to within-class groups, suggests that it makes very little difference to learning outcomes” (Higgins et al, 2014).

Described as a zero-sum game, watch the [Toolkit Talk video](https://www.youtube.com/watch?time_continue=45&v=e4BKg30HxV0) from the EEF’s website and [see John Hattie’s highly pertinent comments](https://www.youtube.com/watch?v=m6czhy6kPpc) in relation to equity. But ability groups take many forms. [Saiying Steenbergen-Hu et al (2017)](http://journals.sagepub.com/doi/pdf/10.3102/0034654316675417%22%20%5Ct%20%22_blank) have recently scrutinised thousands of studies and the results of almost 100 years of research on the effects of ability grouping and acceleration. They found  evidence of academic benefits of within-class grouping, cross-year grouping by subject, and grouping for the gifted, *but didn’t find any benefit of between-class* grouping and the results were consistent regardless of whether pupils were high-, medium-, or low-achievers.

The whole-class approach of maths mastery programmes has now started to a shift in thinking about ability groups. As [Pete Boyd and Andy Ash (2017)](http://insight.cumbria.ac.uk/id/eprint/3286/1/Mastery%20Maths%20No%20Problem%20CPD%20Resource%20Pete%20Boyd%20%20Andy%20Ash%20%28002%29.pdf) have found, setting is in tension with the beliefs of a mastery approach and teachers are beginning to move away from ability groups as it is the old-way of doing things. [Mastery has made setting irrelevant](https://www.tes.com/news/school-news/breaking-views/maths-mastery-makes-setting-according-ability-irrelevant).

For a real insight into the politics of setting see Tim Dracup’s (aka the Gifted Phoenix) [incredible blog](https://giftedphoenix.wordpress.com/2014/11/12/the-politics-of-setting/). Ability groups is rubbish if you are in the bottom group.

Verdict:

[Ability grouping has no academic benefits, yet policy makers back it.](https://twitter.com/share?text=Ability+grouping+has+no+academic+benefits%2C+yet+policy+makers+back+it.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=Ability+grouping+has+no+academic+benefits%2C+yet+policy+makers+back+it.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

12. We Don’t Need To Teach Knowledge

Knowledge is dead, long live Google. We can all rely on knowledge being ‘out there’ and all we have to do is ‘Google it’ – we therefore don’t need to teach knowledge but just teach children how to learn and other 21st century future-proof skills. The idea that we don’t need to teach and acquire knowledge any more is complete nonsense because as [Daisy Christodoulou (2014)](https://files.eric.ed.gov/fulltext/EJ1023875.pdf) says:

“… if we fail to teach knowledge, we fail to learn” and “factual knowledge is closely integrated with creativity, problem-solving and analysis. It allows these skills to happen.”

The idea that students can jump on the internet and ‘self-educate’ through their own research is dangerous and naïve. Generation Z might be great at copying and pasting but this is proof that [they are not the best managers of their own learning](http://ocw.metu.edu.tr/pluginfile.php/3298/course/section/1174/Do%20Learners%20Really%20Know%20Best.pdf) (Kirschner and van Merrienboer, 2015) as it takes knowledge to gain knowledge. Prior knowledge largely determines how we search, find, select, and process (i.e., evaluate) information found on the web and the Googlification of education strips students of core knowledge.

Miller and Bartlett (2012) argue that learners are not intelligent Internet users because they skitter and bounce between which “militates against critical, deep, single-source reading” and they often trust the first thing they see, making them prone to “the pitfalls of ignorance, falsehoods, cons and scams”. According to [Parents and Teachers for Excellence 2016 research note](http://www.parentsandteachers.org.uk/application/files/7014/7438/0651/Why_we_need_a_knowledge-based_curriculum.pdf), we need a knowledge based curriculum. See also their 2017 pamphlet [The Question of Knowledge](http://parentsandteachers.org.uk/research/question-knowledge).

Verdict:

[We do need to teach knowledge – it pays the best interest.](https://twitter.com/share?text=We+do+need+to+teach+knowledge+-+it+pays+the+best+interest.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

[**CLICK TO TWEET**](https://twitter.com/share?text=We+do+need+to+teach+knowledge+-+it+pays+the+best+interest.&via=TeacherToolkit&related=TeacherToolkit&url=https://www.teachertoolkit.co.uk/2017/12/26/20-research-myths/)

And finally…

The next time a bandwagon comes along, press pause and as [Professor Rob Coe](https://www.youtube.com/watch?v=bN6cwYTXu5c) suggests, “Be more scientific, be curious, be rigorous, be tough on yourself, be tough on what people are telling you … argue your case with schools that ask you to do things without evidence: teachers can be a lot more powerful than they suspect”.

[Spaulding, Mostert and Beam (2010)](http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1167&context=educ_fac_pubs) agree with Wolfe and Brandt (1998) and argue that teachers need to become critical consumers of research and “separate the wheat from the chaff” and teacher training programmes need to consider how they equip pre-service teachers to critically examine education literature. The [Chartered College of Teaching](https://chartered.college/) is putting all its weight behind ‘best-evidence’ and so let’s hope it can act as a guardian for what works and what doesn’t. It’s up to all of us to be informed and to share the stuff that actually does make a difference, rather than something that rides on the back of a unicorn selling miracles.