

CHALLENGING MINDSET

*Why a Growth Mindset Makes a Difference in Learning –
and What to Do When It Doesn't*

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The following critiques have been chosen because they are the most common ones. In each case, we have shared a summary of the criticism and counter-argument, and then a quote direct from the horse's mouth (not that we are calling Carol Dweck a horse).

Growth mindset is not just about effort; it is also about strategy, attitude and environment.

Growth mindset does not ignore genetics; instead, it recognises them as a starting point, not the end point.

The article mentioned above is one example of the growth mindset 'critiques' online. I say 'critiques' in quotes because the vast majority are based on over-simplifications of Carol Dweck's research and theories, which make it easier to discredit. The same is happening with the work of John Hattie, Dylan Wiliam and Guy Claxton, as mentioned at the beginning of this chapter.

So, rather than use this book to get you all revved up to try mindset strategies (we hope), only for you to find criticisms of mindset online, we thought it best to prepare you with some considered responses. As the saying goes, forewarned is forearmed.

Later in the book, we explore the more important or nuanced ideas but for now, we think this brief summary should help deal with the more common misrepresentations of fixed and growth mindsets.

2.6.1 • Common Critique One

As stated above, one of the most common critiques we encounter is the false assumption that Carol Dweck attributes someone's success entirely to their effort and ignores a person's innate ability.

Reality: Carol Dweck does *not* say that performance is 'entirely dictated' by how hard a person tries. Instead, she says that effort is one of the key ingredients to success. She also says strategy, resilience, support and desire are just as important as effort.

A lot of parents or teachers say praise the effort, not the outcome. I say [that's] wrong: Praise the effort that led to the outcome or learning progress; tie the praise to it. It's not just effort, but strategy . . . so support the student in finding another strategy. Effective teachers who actually have classrooms full of children with a growth mindset are always supporting children's learning strategies and showing how strategies created that success.

Students need to know that if they're stuck, they don't need just effort. You don't want them redoubling their efforts with the same ineffective strategies. You want them to know when to ask for help and when to use resources that are available. (Dweck, 2016)

2.6.2 • Common Critique Two

Growth mindset ignores the role of genetics and their influence on performance.

Reality: Carol Dweck does not ignore genetics! In fact, in almost every presentation we have heard from Carol Dweck, she has stated: 'Genetics are the starting point'. In other words, Usain Bolt smashed the 100-metre world record in 2008 because of his stunning genetics *and* his absolute dedication, training and desire to be the best (amongst other things).

Yes, people come with different genes, and yes, genes can certainly influence our behaviour and development. But if we care about how people lead their lives – whether they lead constructive lives, how effectively they can cope when it matters, whether they can attain their goals, how they treat others – genes don't give us the answers. If we care about whether people can sustain successful relationships, succeed in school, and hold meaningful jobs, then environment matters greatly.

These depend on things we are taught. It may be that genes make it easier for some to learn adaptive skills, but under the right circumstances virtually everyone can. (Dweck, 2000: 15)

2.6.3 • Common Critique Three

Growth mindset is over-simplified nonsense; students are not going to succeed merely because they are shown pictures of brains exercising and neurons connecting together.

Reality: It is not the growth mindset research that is over-simplified; it is the reporting and implementation of it that is too often over-simplified (see Sections 2.1–2.5).

Students are not going to succeed merely because they are shown pictures of brains exercising and neurons connecting together. We often lament the fact that teachers are putting up a picture or a chart in their classrooms and expecting changes to occur. To have an impact, growth mindset practices have to infuse the classroom culture. Teachers have to embody them and not just spout about them.

Some of the other over-simplifications include:

- ‘diagnosing’ students with a fixed mindset and labelling them as such
- making students responsible for their mindset
- not understanding that classroom and school triggers are critically important
- focusing only on effort, which is just one of the routes to learning
- praising ineffective (or non-existent) effort.

There is also the significant issue of the high-stakes testing culture that exists in many schools. This is likely to undo any positive effect that might come from short-term or surface-level mindset interventions.

2.6.4 • Common Critique Four

Too many claims are made about the ability of growth mindset to nullify the limiting effects poverty and social injustice have on student achievement.

Reality: Over-enthusiastic advocates do indeed over-claim but Dweck herself does not. In a recent big study of 168,000 students in Chile where mindsets were examined in relation to socio-economic variables, Dweck and her colleagues discussed how these factors might affect each other:

To be clear, we are not suggesting that structural factors, like income inequality or disparities in school quality, are less important than psychological factors. Nor are we saying that teaching students a growth mindset is a substitute for systemic efforts to alleviate poverty and economic inequality. Such claims would stand at odds with decades of research and our own data. Rather, we are suggesting that structural inequalities can give rise to psychological inequalities and that those psychological inequalities can reinforce the impact of structural inequalities on achievement and future opportunity. (Claro, Paunesku & Dweck, 2016: 8667)

Importantly, the title of that paper was ‘Growth mindset *tempers* the effects of poverty on academic achievement’. It does not say, ‘Growth mindset cures/eradicates/ignores the

Although it is true to say that mindset messages are often over-simplified, the research underpinning these messages is not. So, critiques would be more correctly aimed at the application of mindset rather than at the theory itself.

There are indeed many over-claims about mindset. These can always be checked by referring to Dweck’s own words and the research she has been involved with.

Mindset is not so much about being positive all the time; it is about being more open to possibilities for growth.

effects of poverty'. Advocates might be a little less careful but a quick reference back to Dweck's own work will show that she is very precise with her language (as you would expect from a Professor of Psychology who has all her work peer-reviewed before publication).

2.6.5 • Common Critique Five

Growth mindset is just another new 'stay-positive-at-all-costs' movement where the message is to always say yes, be happy, smile, celebrate mistakes, praise everyone. This makes people prone to over-confidence and unrealistic expectations.

Reality: Mindset is the term given to the observed phenomenon that people have subconscious (implicit) beliefs about intelligence. Some people think intelligence is an inherited, fixed quality whereas others think it is more malleable and developed. This belief exists anyway, whether or not they have read Carol Dweck's work. It is true that when in a growth mindset, a person is more likely to respond to challenge, feedback and mistakes in a more positive fashion than if they were in a fixed mindset but it does not mean they are impossibly happy, smiley people! It means they are more interested in learning opportunities than they would be if they were in a fixed mindset.

As for over-confidence, it would appear that being in a growth mindset might make you less prone to over-confidence, as this abstract from a paper by Ehrilnger, Mitchum and Dweck (2015) shows:

Study 1 demonstrated that participants with an entity (fixed) theory of intelligence showed significantly more overconfidence than those with more incremental (malleable) theories. In Study 2, participants who were taught an entity theory of intelligence allocated less attention to difficult problems than those taught an incremental theory. Participants in this entity condition also displayed more overconfidence than those in the incremental condition, and this difference in overconfidence was mediated by the observed bias in attention to difficult problems. (Ehrilnger et al., 2015: 94)

2.6.6 • Common Critique Six

Educators are far too quick to speak with certainty about research that is not yet widely accepted. For example, educators will explain growth mindset in terms of neuroscience, even though those involved directly in neuro-research are themselves cautious in making claims about brain development and brain plasticity.

Though it is likely that educators have indeed over-claimed the certainty and efficacy of many aspects of research (and not just in terms of neuroscience or mindset), it is also true to say that talking about brain development with students *can* have a positive effect on their mindset. Indeed, many interventions from which the impact of mindset is drawn, have involved teaching students about brain plasticity. They have explained to young people how the grey matter within our brains can shrink or thicken; that neural connections can be forged and refined or weakened and severed; and that every time an action is repeated, new 'wires' or neural pathways can be created. Though these explanations are simplistic, there is evidence that thinking our brains are *able* to change at any age is more likely to lead to growth mindset thinking than to lead to fixed mindset thinking. After all, in a growth mindset, people believe that change is likely, whereas in a fixed mindset, people believe abilities and intelligence are far more static.

In the growth mind-set classes, students read and discussed an article entitled 'You Can Grow Your Brain.' They were taught that the brain is like a muscle that gets stronger with use and that learning prompts neurons in the brain to grow new

It is worth remembering that mindset comes from psychology and not from neuroscience, so any claims about the links between mindset and brain research should be treated with caution.

connections. From such instruction, many students began to see themselves as agents of their own brain development . . . Other researchers have replicated our results. Psychologists Catherine Good, now at Baruch College, Joshua Aronson of New York University and Michael Inzlicht, now at the University of Toronto, reported in 2003 that a growth mind-set workshop raised the math and English achievement test scores of seventh graders. In a 2002 study Aronson, Good (then a graduate student at the University of Texas at Austin) and their colleagues found that college students began to enjoy their schoolwork more, value it more highly and get better grades as a result of training that fostered a growth mind-set. (Dweck, 2015b)

Why should [memory] retain so much better the events of yesterday than those of last year and, best of all, those of an hour ago? Why should repeating an experience strengthen our recollection of it? Why should drugs, fevers, asphyxia, and excitement resuscitate things long since forgotten? . . . Such peculiarities seem quite fantastic. . . .

Evidently, then, **the faculty does not exist absolutely, but works under conditions; and the quest of the conditions becomes the . . . most interesting task.**

James, 1890

WHEN DOES MINDSET WORK BEST?



In the previous chapter, we shared the evidence that growth mindset interventions are not working as well as expected in schools. Not yet, anyway. We also gave suggestions as to why this might be.

This chapter shows that the effects are in fact highly nuanced and make much more of a difference in some circumstances than in others. Indeed, the meta-analysis by Burnette et al. (2013) that we described in Chapter 2, can be summarised as follows:

Implicit theories are indeed consequential for self-regulatory processes and goal achievement. However, these consequential relations are nuanced. We sought to clarify when (e.g., when facing ego threats) and how (e.g., monitoring processes) implicit theories are consequential for goal achievement. Findings suggest . . . that the literature would be better served by asking **when** and how implicit theories are consequential . . . rather than asking **if** incremental theories are generally beneficial. (Burnette et al., 2013: 680)

Although it is clear that mindset does make a difference, the question remains 'when' does it make the most difference?

3.0 • GOALS, STRATEGIES AND EXPECTATIONS

On page 670 of their report, Burnette et al. (2013) shared their SOMA (Setting, Operating, Monitoring, Achievement) model showing the relationship between incremental beliefs (growth mindset) and goal achievement. Some of their findings are shown in Figure 5 of this book, which to recap shows:

- The effect of 'learning goals' on goal achievement is 0.32, which compares favourably with the effect of 'performance goals' of *minus* 0.02. The difference between these two effect sizes is 0.34.

A growth mindset helps most when goals are learning-focused rather than performance-focused.

(Note: Learning goals are often described as 'mastery-orientation'; they focus on learning and improvement, whereas performance goals or 'performance-orientation' focus on demonstrating competence relative to others, generally in an attempt to look clever or to avoid looking stupid.)

- The effect of 'mastery strategies' on goal achievement is 0.31, which compares favourably with the effect of 'helpless strategies' of *minus* 0.24. The difference between these two effect sizes is 0.55.

(Note: Mastery strategies are used by a person who responds to challenges by remaining task-focused and aiming for mastery in spite of difficulties and setbacks, whereas helpless strategies are used by a person who responds to challenges by giving up and withdrawing, acting as if the situation were out of their control.)

A growth mindset helps most when failure seems to be a distinct possibility.

- The effect of 'expectations' on goal achievement is 0.41, which unsurprisingly compares favourably with the effect of 'negative emotions' of *minus* 0.32. The difference between these two effect sizes is 0.73.

(Note: Expectations refer to a person thinking, 'I believe in my ability to reach my goal', whereas 'negative emotions' are connected with the belief that 'I feel hopeless or anxious when evaluating my goal progress so far'.)

A growth mindset helps most when you are faced with a challenge.

What their SOMA model shows, which Figure 6 does not, is that a person holding an incremental theory is much more likely to set learning goals for themselves, employ mastery strategies and have positive expectations of success.

As Burnette et al. hypothesise:

Implicit theories will predict goal setting processes, with entity theorists especially likely to set performance goals oriented toward proving their ability and incremental theorists especially likely to set learning goals oriented toward developing mastery. After all, one of the most immediate consequences of believing that ability is fixed (entity beliefs) is that people will try to demonstrate that they possess the ability in question, and one of the most immediate consequences of believing that ability can be developed (incremental beliefs) is that learning has value. (2013: 659)

3.1 • MINDSET WORKS BEST WHEN GOALS ARE LEARNING-ORIENTATED

Performance goals focus on success relative to others. Learning goals focus on personal progress.

Here is the bad news: there is a *negative* correlation between incremental theories and performance goals. That is to say that if you are in a growth mindset, and you perceive the task in front of you is a 'performance-related goal' (e.g. let's see who is the best), then the benefit derived from being in a growth mindset is reduced.

Furthermore, when beating their peers on performance tasks motivates a person with an entity theory, then the negative effects of being in a fixed mindset are reduced. Thus, a person with a fixed mindset in these circumstances is likely to apply himself or herself just as much, maybe even more, than the person in a growth mindset who suspects there are no learning opportunities within the task.

Pause for a moment to consider how many tasks in school are performance-related, either by design or by ethos! Small wonder, then, that being in a growth mindset is less effective in real-world classrooms than we thought it would be.

Of course, if you can set learning-related tasks for all of your students *and* you can get them all into a growth mindset then the effects should be significant. We realise that those are two very big *ifs* but then that is what this book aims to help you with, particularly Chapters 5, 6 and 7.

3.2 • MINDSET WORKS BEST WHEN THERE IS CHALLENGE

As we mentioned in Section 3.0, mastery strategies are used by a person who responds to challenges by remaining task-focused, whereas helpless strategies are used by a person who responds to difficulties by giving up and withdrawing.

Therefore, if there is no challenge then there is no need for a growth mindset; you will simply 'get the job done' and move on. It is only when confronted with difficulties that anxieties and fears, or grit and determination, rear their heads; that is when your mindset makes a difference.

If you are in a fixed mindset then it is likely that you will focus on ways to avoid losing face. Classic strategies include making excuses, predicting failure, claiming nonchalance and so on. On the other hand, if you are in a growth mindset then you are more likely to have a go, seek feedback, try again and persevere. This is when mastery strategies are crucial.

Little challenge means little effect of mindset; high challenge is when mindset matters most. Chapter 8 explores this topic in much more depth.

3.3 • MINDSET WORKS BEST WHEN THERE IS A CHICKEN AND AN EGG!

When expectations of success are high then we are more likely to engage with a task; even more likely if it is a learning task rather than a performance-related one. This, in turn, leads to a greater chance of success.

Similarly, the more success we have previously encountered within the same or a similar context, the more likely we are to think we will be successful next time too. Of course, mindset makes a difference as Burnette et al.'s meta-analysis showed but so too does prior success.

So, there we have it: a chicken or egg situation! We are more likely to succeed if we have high expectations and we are more likely to have high expectations if we have succeeded previously. So now for the clichéd question: which comes first?

As a teacher, a leader, a parent, or indeed anyone responsible for the well-being and success of others, it is up to us to raise the bar of expectation by showing those we care for how much further they can go than they thought possible. Achieve this and we will set them on an upwards spiral. With more successful experiences under their belt, they are more likely to raise their expectations next time. With higher expectations, they are more likely to succeed. And so it goes on.

Of course, very sadly the opposite is true for so many students: negative experiences lead to low expectations, which in turn lead to lower levels of success and so on. No wonder there are so many disaffected teenagers in our schools if they have endured years upon years of a negative spiral.

A growth mindset is more likely to exist when a person has experienced success beforehand. Success leads to a growth mindset and a growth mindset leads to success.

The good news (for those of us investing our time and energy in growth mindset strategies) is that teaching our protégés the theory of mindset can be one way to start off the upwards spiral. By showing them that talents and intelligence are malleable, they will be more likely to suppose that changing their efforts, strategy and perseverance will reap rewards.

This topic is explored in more depth in Chapter 10.

3.4 • MINDSET FOR LIFELONG LEARNING

A growth mindset is more important when goals are less grade-orientated and more focused on engaging in the fullness of life.

This book has been very research-heavy so far. Our focus, as with all the books in the Challenging Learning series, is to bridge the divide between research and practice. So, we'd like to round this chapter off with some practical suggestions.

To begin with, we'd like to share an email from one of our colleagues. After we had completed draft one of this book, we sent the manuscript to our team to ask for their feedback. The following is part of the response from our organisation's financial controller, Beccy Morley, shared with permission:

Reading as a parent, I actually found the beginning bit really interesting regarding misinterpretation of theory and I think parents could do with being armed with more of this stuff because teachers do sometimes cite such things and there's a tendency to believe them as the professionals (my son told me a couple of weeks ago that they'd done a diagnostic at school and he was a kinaesthetic learner! Before working here I wouldn't have been equipped to have a discussion about that, but I was, so we did, and it wasn't quite as bad as he made it sound! In fact, he was just trying to use it as an excuse!).

I know that this is a book mainly for teachers, so I get that the positive benefits of growth mindset are phrased in terms of achievement. However, I think its relevance is far wider, in terms of wellbeing and developing well-rounded people able to enjoy life. Like most parents, I worry about the world the kids are going to grow up into; tech means the world is shrinking so they'll be competing for jobs with people worldwide, far more jobs will be automated, and the 'edge' is going to come from being more creative and more human – being able to combine disciplines, take risks in the interest of innovation and 'have a go'. To me, growth mindset seems to foster these things.

And really, if I'm honest, I worry more about their wellbeing than their future careers and, again, growth mindset would seem to feed wellbeing by making sure they don't shut down opportunities and have as wide a range of experiences as possible.

I think I've said to you before that I had the 'gifted and talented' label all through school. I don't think it made me less resilient in the subjects that I was good at, because when I struggled I had the rock-solid conviction that I'd get it in the end, but I closed off whole areas to myself that I considered weren't 'my subjects'. I'm thinking of music and sport in particular, which could arguably have given me great pleasure across the years and improved my physical health and wellbeing. It's probably only in the last five years that I've actually started doing more exercise, which I would have previously said I couldn't join in with because 'I wasn't sporty'.