

5.4 Is Growth Mindset Worth The Hype?



Mindset plays a significant role in determining expectations. Much better to be in a growth mindset than a fixed one. However overclaims abound and effect sizes are lower than expected, so a deeper understanding is needed of why it matters and when.

Growth mindset refers to a belief that intelligence and abilities can be ‘grown’ through experience, effort, strategy, and support from others. The term is most closely associated with Carol S. Dweck, the Lewis and Virginia Eaton Professor of Psychology at Stanford University.

By contrast, being in a *fixed mindset* is a belief that intelligence and abilities are mostly innate, changing very little over time.

The impact of being in one or other of these mindsets is significant, as the decades of precise research by Dweck and her team prove. Having co-presented with Professor Dweck on many occasions, I aim to separate fact from fiction, reality from hype.

Figure 46 gives an overview of the differences between fixed and growth mindsets. It is important to note that most people experience both mindsets, often at the same time. For example, someone might believe they can grow their talents in sport through focus, effort and determination (growth mindset thinking) and at the same time assume there is next to nothing they can do to become more artistic, mathematical or multi-lingual (fixed mindset thinking). As Carol Dweck often teases, ‘claiming you are always in a growth mindset is a very fixed mindset thing to say!’

Figure 46: Comparison Between Fixed and Growth Mindsets

Fixed Mindset	Growth Mindset
Abilities are FIXED	Abilities are GROWN
The belief that abilities and intelligence are fixed by nature and are relatively innate.	The belief that abilities and intelligence are grown through nurture and are relatively malleable.
‘I have always been good at this.’ ‘I don’t have the mind for that.’	‘I have developed a talent for this.’ ‘I have never tried learning that.’
Saying Usain Bolt, Marie Curie, Leonardo da Vinci, Albert Einstein, Whitney Houston, Steve Jobs, Hedy Lamarr, and Wolfgang Mozart were successful because of the gifts they were born with.	Saying the people mentioned in the left-hand column turned their ‘natural advantage’ into world-beating excellence through extraordinary drive, ambition, effort, opportunity, culture and resilience.

Fixed Mindset	Growth Mindset
KNOW Your Limitations	TEST Your Limitations
The belief that our limitations tell us how far we can go before we can expect to fail.	The belief that our limitations are there to be tested, stretched and overcome.

'I know and accept my limitations.'	'I want to test my limitations to the maximum to see if I can break past them.'
Quickly concluding others can't do something because they are female, disabled, poor, have ADHD, are from the wrong side of the tracks, have a bad attitude, and so on.	Thinking of athletes at the Paralympics; and people like Dame Evelyn Glennie; Stephen Hawking, Rosa Parks; Oprah Winfrey.

Fixed Mindset	Growth Mindset
PROVE Your Ability	IMPROVE Your Ability
Abilities and intelligence are relatively fixed. Therefore, it is important to prove one's talents.	Abilities and intelligence are relatively malleable. Therefore, it is important to grow and improve.
'I have always been really good at that.' 'I can't do this but that's ok because I'm better at other things.'	'I would love to have a go at improving that.' 'I have never had much success with this so I'm trying to improve it now.'
Choosing activities that are likely to end in success.	Choosing activities that are likely to take me out of my comfort zone.

Fixed Mindset	Growth Mindset
I CAN'T do that	I can't do that YET
Earlier failures or anticipated failure indicate that you can't do it.	Earlier failures or lack of familiarity indicate I can't do it yet.
'I know I can't do that.' 'I've tried it before and proved I'm hopeless at it.'	'I know I can't do it yet but I'm willing to have a go.' 'I'm hopeful I can do it better next time.'
Saying 'I can't do it' as an excuse for not joining in.	Saying 'I can't do it yet' to reflect the possibilities of future success, and to signal a willingness to try.

Fixed Mindset	Growth Mindset
AVOID Challenges	SEEK Challenges
Challenges are uncomfortable so they should be avoided unless absolutely necessary.	Challenges are stimulating so it is good to seek them out whenever appropriate.

<p>'Why would I want to try that and make a fool of myself? 'That looks far too difficult.'</p>	<p>'I would love to have a go at that to see how I get on with it.' 'That looks really exciting.'</p>
<p>Using excuses and diversionary tactics to avoid challenges.</p>	<p>Looking for opportunities to have a go at different challenges.</p>

Fixed Mindset	Growth Mindset
<p>Struggling indicates INADEQUACY</p>	<p>Struggling indicates LEARNING</p>
<p>Talented people can do things with ease. So, if I am struggling then that means I am inadequate.</p>	<p>Talented people have been through many struggles to get where they are today. So, if I am struggling then maybe I am on my way too.</p>
<p>'I hate struggling. It shows I can't do it and that's embarrassing.' 'I get frustrated when I struggle and feel like giving up.'</p>	<p>'Struggling means I am trying to learn.' 'When I'm struggling, I reassure myself that the outcome is going to be worth it.'</p>
<p>Trying not to show anyone that you are struggling; asking to be rescued or giving up too quickly</p>	<p>Persevering through the struggle; even growing to find joy in the knowledge that it leads to growth and personal development</p>

Fixed Mindset	Growth Mindset
<p>HIDE Mistakes</p>	<p>EXAMINE Mistakes</p>
<p>Mistakes are embarrassing because they indicate a lack of talent, understanding or attention.</p>	<p>Mistakes can lead to a better understanding of what might be needed for increased success.</p>
<p>'I hate making mistakes; they show I'm not concentrating or even worse, that I can't do it.'</p>	<p>'Mistakes are not great but I can turn them into something positive if I learn from them.'</p>
<p>Hiding mistakes from other people; pretending (sometimes even to myself) that they never happened; blaming circumstances.</p>	<p>Examining what went wrong, lessons learned and possible solutions. Deciding cause and effect rather than blame and punishment.</p>

Fixed Mindset	Growth Mindset
<p>Feedback is CRITICISM</p>	<p>Feedback is INFORMATION</p>
<p>Feedback is a euphemism for criticism. It leaves the receiver feeling inadequate and crestfallen.</p>	<p>Feedback is not personal; it is information that could be used to improve future performance.</p>

'Please be gentle when giving me feedback' 'So basically, what you're telling me is that I'm not good enough?'	'Feedback helps me to understand how well I am doing and what I could do next to improve.'
Thinking feedback is directed towards the person and their inadequacy. Preferring feedback to be praise-based rather than critique-based.	Thinking feedback is directed towards process and improving future performance. Wanting clarity and purpose rather than flattery or false praise.

Fixed Mindset MOTTOS	Growth Mindset MOTTOS
Fortune favours the strong.	Fortune favours the brave.
If you're really good at something, you shouldn't need to try.	No matter how good you are at something, you can always improve.
If you have to try, you must be stupid; effort is for losers.	If you have to try, you must be learning something; effort is how people succeed.
Don't try too hard; that way you've got an excuse if things go wrong.	Always try hard; that way you've more chance of success and making progress.
No pain, no gain.	No pain, no gain.

5.4.1 Is Mindset Important?

"Students who endorse an incremental theory of intelligence are more likely to make plans to improve their performance after a setback, due in part to their holding learning goals in academic situations and to their focus on the positive role that effort can play in achievement. In comparison, students who hold ability goals are more likely to withdraw from challenges, due in part to their focus on lack of ability as the reason for failure and their tendency to experience deactivating loss of interest/excitement after a setback." (Smiley, Buttitta, Chung, Dubon & Chang, 2016: 890)

The positive effects of growth mindset are well-established. It is not, as some commentators claim, 'pseudoscientific, new-aged thinking'. It does not belong in the same category as Brain Gym or Learning Styles, for which there is no reliable evidence.

In general terms, mindset is important. However, as with most aspects of education, it works better for some students than others, and in some situations more than in others. Some key points include:

- There is some hype about growth mindset, as well as too much over claiming. However, the research supporting growth mindset is robust and reliable.
- The effects are smaller than expected, but they are positive.
- Analysis of the research by Sisk et al (2018) suggests mindset has a bigger impact on academically high-risk and economically disadvantaged students than it does on other students.
- Growth mindset may have a detrimental effect on students who are confident in, or rely upon, their 'natural' talents.

In all cases, mindset does not matter very much when you are in your comfort zone. When engaged in easy tasks, you have no need to question your abilities or find alternative solutions. A similar thing could be said of grit, determination, and self-efficacy (all of which are linked with growth mindset): they are all unnecessary when tasks are straightforward.

Mindset becomes relevant when faced with situations that give rise to questions such as: is it worth persevering in the hope of finding a better solution or should I admit defeat before I embarrass myself? Will I be able to outdo myself or have I reached my limit? Is it better to involve others or to cover up my failings? Why can't I do this? Why do others succeed, seemingly with ease when I find it so difficult?

In these situations, someone in a growth mindset tends to choose the positive, proactive option. They do so because they believe talents are malleable and with that comes the recognition that effort, strategy, and perseverance will make breakthroughs more likely. Whereas those in a fixed mindset believe that everyone has limitations; therefore, setbacks and failure are likely to indicate they have reached, or are close to, their natural limits.

Other situations in which mindset is important include ...

Feedback

Being in a growth mindset helps learners to be more receptive to feedback. They seek out ways to improve because they believe progress is possible. They know that if they take good advice and apply it properly that outcomes will be better. This compares to someone in a fixed mindset who is primarily interested in how well they did and how this compares with other people's achievements.

You can link these findings with the differences between formative and summative assessment: those in a fixed mindset tend to use feedback summatively (by wanting to know how well they did); whereas those in a growth mindset use feedback formatively (by seeking to understand what they could do next to improve).

Challenge

Being in a growth mindset engenders positive attitudes towards challenge. When someone believes improvements are possible given the right adjustments, they are much more willing to engage in short-term discomfort to secure longer-term benefits. Whereas those in a fixed mindset tend to worry about the negative outcomes or long-term effects of mistakes or failure.

That is not to say that mindset is the only factor influencing attitudes to challenge. Other aspects include how often someone has succeeded with similar tasks; how much they trust the intentions of the person setting the challenges; and whether or not they value the intended outcomes. In other words, are they likely to succeed; do they trust the situation; and is the pain worth the gain? If the answers to these questions are no, then mindset is unlikely to be important; whereas, if they are yes – or a borderline yes – then being in a growth mindset could very well make the difference between taking on or avoiding these challenges.

Failure

When gathering together the research available to write *Challenging Mindset* (Nottingham & Larsson, 2018), the analysis I was most fascinated by was the conclusion that a teacher's

attitude towards failure is more influential than their mindset is. As I will show in [Section 5.8](#), a teacher's mindset is important. However, anyone else's mindset is difficult to detect without an interview or focussed observations. Whereas their attitude towards mistakes and failure is visible and therefore much more likely to be of influence.

Thus, teachers who respond to failure with despondency are likely to put their students into a fixed mindset; whereas those who respond as if failure is a learning opportunity that always has options for improved iterations, are more likely to encourage students into a growth mindset.

To summarise, being in a growth mindset is particularly important when your students are ...

- ✓ Out of their comfort zone
- ✓ Nervous about their chances of success
- ✓ Faced with setbacks or failure
- ✓ Setting goals or choosing tasks
- ✓ Responding to feedback
- ✓ Comparing themselves with others
- ✓ Imagining what they are capable of

As a footnote to this section, it is worth noting that growth mindset is not the be-all and end-all. Developing interests and talents is complex and multi-faceted.

In Nature's Gambit, Feldman and Goldsmith (1991) concluded that talent is the result of a lucky coincidence of factors. This includes a willingness to put in the hours necessary to improve, the proximity of the resources needed, healthy social and emotional development, birth order and gender, public recognition and approval, family traditions, historical forces, events, and trends.

5.4.2 When Is Mindset Most Effective?

In this section, I share some of the findings and nuances of the research. These are drawn from four meta-analyses, covering 283 studies about the effects of growth mindset.

Overall effect on student achievement: 0.15

Implicit theories of intelligence and academic achievement: A meta-analysis by Costa & Faria, 2018 (46 studies): 0.14 effect size

To What Extent and Under Which Circumstances Are Growth Mind-Sets Important to Academic Achievement? by Sisk, Burgoyne, Sun, Butler, & Macnamara, 2018

- (Growth Mindsets, 123 studies): 0.20 effect size
- (Growth Mindsets Interventions, 29 studies): 0.08 effect size

Mind-sets matter: A meta-analytic review of implicit theories and self-regulation, by Burnette, O'Boyle, van Epps, Pollack & Finkel, 2013 (85 studies): 0.19 effect size

These meta-analyses show the effects of growth mindset on student achievement are positive. However, given the significance of the attitudes and behaviours associated with growth mindset (setting aspirational targets; being more willing to accept and use feedback;

persevering in the face of setbacks, and so on), it is surprising that the effects are smaller than the average effect of 0.40 (see [Section 1.5.1](#))

There are many reasons why these effects, though positive, are below average including:

1. A significant proportion of the interventions included in the meta-analyses took less than an hour to administer. For example, David Yeager et al (2016) ran a web-based intervention involving two 25-minute sessions with 7,335 students in the USA that significantly lowered the dropout rate among socially and economically disadvantaged students. Three years later, Yeager ran the same intervention with a nationally representative sample of 12,490 ninth graders attending 65 schools. The results were particularly effective with lower-achieving students, raising their GPA by an average of 0.10 grade points (on a 4.0 scale) in core classes. This represents a substantial increase when compared with other, equivalent educational interventions (Yeager et al., 2019).

Beyond the USA, Mari Rege et al (2021) ran Yeager's intervention with 6,541 high school students in Norway, prompting significantly more students to enrol in higher maths classes the following year.

So, although many home-grown mindset projects are designed to run throughout a school year, most of the data included in the meta-analyses are based on just two 25-minute sessions with students. Being able to achieve effect sizes between 0.08 to 0.20 (20-50% improvement) with such a low-cost, time-effective approach, is remarkable.

2. The size of the relationship between growth mindset and achievement is dependent upon the many factors shaping the culture of learning. For example, it is difficult to maintain a growth mindset if asking thought-provoking questions or seeking more challenging work is met by the scorn of peers; the same could be said if too much attention is given to test taking such that other educational aims are displaced.

This interpretation is supported by the largest study to examine growth mindset and achievement, administered as part of the PISA testing programme by the [OECD \(2019\)](#). Questions designed to identify a link between mindset and performance in the rest of the test were asked of 500,000 15-year-old students in 79 countries. Those in a growth mindset scored on average, 32 points higher on the reading portion of the test than those in a fixed mindset. The examiners also concluded that being in a growth mindset was positively associated with students setting higher learning goals, students' motivation to master tasks, and students perceiving value in attending school. There was also a strong correlation between growth mindset increasing and fear of failure decreasing.

However, when breaking down the data by country, these effects were large in some and non-existent in others. The conclusion therefore was that the role of context is very significant. It is false to say that growth mindset works everywhere, every time. There are very many factors that lead to successful outcomes, of which mindset is just one.

3. The theory is right, but the implementation takes more care and attention than is often given. For example, many educators and researchers have created their own interventions rather than replicating the successful methods used by others.

Reading through the meta-analyses, it is clear that the interventions with the highest effect sizes have all been administered by trained instructors taking an iterative approach. They

have begun with an already-proven strategy and then used participant interviews to identify what was engaging, clear, and meaningful. The data they collected have then been used to further refine later iterations. No wonder these researchers had more success than the busy teacher for whom growth mindset is just one of the many strategies they're using to engage and extend their students' learning!

Connected to this is Dweck's concern that too many people have over-simplified growth mindset such that it has become mainly about praising students' efforts. She has noted that students are all-too-often praised even if their efforts have been misdirected or fruitless (Dweck, 2015). This is despite her assertions that growth mindset theory actually demands that feedback is gathered about what went wrong, carefully considering that feedback, and then developing new strategies to overcome failure or mistakes.