Children’s Coaching Event:
Excellent Coaching, Every Time, For Children

Coaching for a Growth Mindset: How Coaching Feedback Can Inspire Ambition and an appetite for learning
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1 Introduction to Mindset:

Quite simply mindset is a belief about ability. Carol Dweck (2000) has popularised a number of psychological theories to help people understand better the nature of outstanding achievement and the factors stopping people fulfilling their potential. Her fundamental argument is that by better understanding people’s self-beliefs and self-theories, we can begin to appreciate why people with apparently the same ‘talent’ don’t all make it.

Her work has challenged some engrained truths and myths about the nature of motivation, self-esteem, confidence, stereotyping, dealing with setbacks and relationship building.

2 Nature versus Nurture:

The nature versus nurture issue has been debated within and outside sport for many years. There is a common belief that people showing exceptional abilities in anything (eg sport, music, science, mathematics) have an innate gift or talent which set them apart from others from birth. In other words, our genetic endowment is responsible for our expertise. Others have strongly argues the role of environment (nurture) over genetics (nature). The research of Ericsson and colleagues in the 80s and 90s found that the key factor in the development of exceptional ability was the amount of hours a person dedicated to ‘deliberate and purposeful’ practice. Also that improvements happened slowly and gradually rather than in leaps and bounds. This led to the 10,000 hours and 10-39er ‘theory’.

Critics of this 10,000 hour rule (eg Stenberg, 1996) have more recently argued that despite the need for a certain amount of deliberate practice, there is firstly a need for a number of innate abilities. Ericsson (2007) has more recently accepted that body size and height are critical factors for some performances but still argue there is no evidence to suggest that a certain genetic endowment is a pre-requisite for the development of exceptional talent. There is evidence cited in recent ‘best selling’ books (Dan Coyle’s Talent Code, Matthew Syed’s Bounce) that everyone who has achieved an exceptional level of performance in a specific domain (eg Mozart, Tiger Woods, Picasso) have done so through sheer determination and undeterred commitment to hours and hours of deliberate and purposeful practice. There is also evidence cited to show that what separates those who make it from those that don’t is often the amount of practice undertaken away from the coaching environment on their own (music example?). There are plenty of examples of expert sportsmen and women who have been renowned for their attitude and commitment to practice (eg Johnny Wilkinson in rugby, David Beckham in football and Tiger Woods in golf). There are extraordinary kids with a hunger for practice (basketball kids).

Indeed there are plenty of examples or ‘experts’ who did not appear to show ‘talent’ at any early age. For example

- Einstein did not speak until he was four and did not read until he was seven, causing his teachers and parents to think he was mentally handicapped,
- In his first film, Harrison Ford was told by the movie execs that he simply didn’t have what it takes to be a star. Today, with numerous hits under his belt, iconic portrayals of characters like Han Solo and Indiana Jones, and a career that stretches decades, Ford can proudly show that he does, in fact, have what it takes
- In 1954, Elvis Presley was still a nobody, he was fired after just one performance and told, "You ain’t goin' nowhere, son. You ought to go back to drivin’ a truck."
- Most people wouldn’t believe that a Michael Jordan, often lauded as the best basketball player of all time was actually cut from his high school basketball team. Luckily, Jordan didn’t let this setback stop him from playing the game
- Stan Smith was rejected from being a ball boy for a Davis Cup tennis match because event organizers felt he was too clumsy and uncoordinated. He went on to win Wimbledon, U. S. Open and eight Davis Cups,
- Ben Hogan, one of the greatest golfers of all time, was completely uncoordinated and graceless as a child;

3 Growth and fixed mindsets:

Motivation theories often talk about motivation towards and away from things. People might search for situations that enhance their feelings of competence and success; they might also adopt an avoidance strategy, avoiding situations that might expose deficiencies and shortcomings and potentially feelings of failure.
This led to the concept of two mind-sets:

- **A fixed mindset** where people feel that ability and intelligence is set at birth, pre-determined and cannot be changed. You are either musical or you’re not; either good at sport or not. They believe that if you are a naturally talented athlete, you’ll naturally pick up new skills and perform well with minimal effort. If you’re not naturally talented, there’s nothing you can do about it but pick something that perhaps you have natural talent for such as art or maths.

- **A growth mindset** where people feel they have an innate capacity for growth and development and ability and intelligence are therefore largely a function of how much effort we are prepared to put in to the task. They believe that abilities can be developed through learning and hard work. The more talent you have, the higher your starting point but practice is still needed to achieve goals.

The adjacent chart (adapted from Dweck and Lara Bercial, 2013) summarises the behaviours and attitudes towards learning and the differences between a growth and fixed mind set.

### 4 Overview of Research Findings and Coaching Tips

In this section, a number of key findings are shared and the implications for coaching drawn out.

#### Finding 1: you can influence children’s motivation and commitment to practise

The theory that helps us understand this is Deci and Ryan’s Self-determination theory which argues that people are motivated to satisfy 3 basic needs:

- Need for autonomy: able to function without needing (much) support and making own decisions
- Need for belonging: wanting to be part of something bigger
- Need for competence: a self of being able to do something that is perceived to be of value to self and others

The level to which an activity addresses the need for any or all three of these determines how intrinsically motivating the activity is to the child.

**Coaching Tips for applying Finding 1**

Coaches can influence the quality of someone’s motivation. Traditionally coaches have focused on the achievement of competence and assumed a sense of belonging would occur as a consequence of being part of a coaching group. The conventional instructional style of coaching would have mitigated against the fostering of a sense of autonomy. Ensure you:

- overtly work on fulfilling needs for belonging
- encourage children to take decisions by using a range of styles from empowering to instructional
- foster task-oriented competence (mastery, judging performance against self) rather than ego-oriented competence (performance focus where judgement made against other)

#### Finding 2: Children with a growth mindset are more resilient and persistent under pressure

Dweck’s research has identified two different responses to challenge and failure in students:

- **helplessness response** when failure is perceived as they feel it’s out of their control and nothing can be done; they feel anxious and depressed, quickly give up and look to blame others or the situation so avoiding responsibility. As a result they tend to underplay their own ability and keep their expectations low so failure is avoided. **Performance therefore goes down**.
mastery response which views a lack of success as something not yet learn rather than something at which they have failed; consequently they tend not to blame others or situations when things go less well and continue to persist and remain optimistic. Performance tends therefore to improve.

Interestingly these differences were only evident when a task was challenging or they actually failed at a task. Those with a fixed mindset are more likely to set performance goals (ie ones where their performance is tested against others); therefore when things get tough, they are likely to adopt a helpless response. They are also more likely to attribute success to ‘natural ability’ or ‘luck’, things over which they have no control. They will attribute explain failure as ‘never going to be any good at this’ or blame it on others or events, again outside their control.

Children holding a growth mindset will more likely set a learning goal (ie where they test improvements against others or events, again outside their control. They will attribute their success to their hard work or sound strategies (over which they have control) and their ‘failures’ to a lack of ability or hard work or using the wrong strategy (again under their control)

Dweck (2000, p25) suggest that ‘an overemphasis on control) and their ‘failures’ to a lack of ability or hard work or using the wrong strategy (again under their control)

Coaching Tips for applying Finding 2
Help children to set learning rather than simply performance goals; any performance goal must be underpinned by learning goals. This will also encourage attributions that are within their control rather than out with it so encouraging responsibility and learning. Challenge attributions that are outside their control.

Finding 3: Those with a growth mind believe the more effort they put in and the more they practise (deliberately and purposefully), the more they will achieve
Dweck has shown that when a fixed mind set is adopted, students will view effort as something that should not be needed if they are already talented. Having therefore to exert effort therefore infers lack of ability and as ability is needed if they are already talented. Hence, high effort may be associated with a fixed mindset and low confidence. In other words self-confidence did not seem to have a bearing on results; this was more about the ability to respond positively when things went wrong. They did find that those with a growth mind set and high confidence were as likely to show a decrease in performance as those with a fixed mindset and low confidence. In other words self-confidence is therefore important in coaching.

Coaching Tips for applying Finding 3
Think about the way you provide feedback. Reward effort (you must have been practising hard to do that so well) rather than ability (you’re a natural at that). Effort reinforces a growth mindset and that effort and practice are positive traits not signs of inability or weakness.

Praising or rewarding ability with the positive intention of boosting self-esteem can rebound by putting the child into a situational fixed mind set, leading them to goal setting and strategies that may inhibit learning. Consider the implications of early success on mind set. The early developer is often identified as talented possibly because of enhanced physical maturity (eg height, strength), perhaps accompanied by emotional, cognitive or social maturity and the consequent ability to handle new skills and competition. The implication of being rewarded for ability (rather than effort) might create a situational fixed mindset and the potential not to try hard or practise intensely for fear of not looking talented if things don’t go right. Having never had to work hard Conversely late maturers are often not identified as talented (often due to their immaturity rather than perhaps their potential) might increase their effort and practice (and so a growth minds set) in order to try to catch up with their more mature peers. When the maturity differential unwinds, the late matures often overtake their previously selected peers.

Finding 4: Low confidence and a growth mindset can result in strong improvements
We tend to assume that high confidence is needed in order for performance improvements to take place and yet Dweck’s research does not necessarily bear this out. She found that this may not be true in unknown or challenging situations. Henderson and Dweck (1990) found that students with a fixed mind set and high confidence had the greatest improvements, presumably because they were willing to put in greater effort and persistence. It showed while that high confidence is not always a pre-requisite for improvement, those with a growth minds set had more stable levels of confidence over time despite task difficulty.

Tips for applying Finding 4
While confidence may not predict performance in the short or long term, a growth mind set will promote more stable confidence despite difficulties over time. Building confidence is therefore important in coaching.

Finding 5: Labelling and stereotyping may have self-fulfilling outcomes
Research (eg Chiu 1997) has shown that people with a fixed mind set tend to make snap judgments about others and these views are often hard to change subsequently. In other words, if we believe that people cannot change (fixed) and we form a negative judgement, we may not see the potential not to try hard or practise intensely for fear of not looking talented if things don’t go right. Having never had to work hard Conversely late maturers are often not identified as talented (often due to their immaturity rather than perhaps their potential) might increase their effort and practice (and so a growth minds set) in order to try to catch up with their more mature peers. When the maturity differential unwinds, the late matures often overtake their previously selected peers.

Tips for applying Finding 5
Be careful about making snap judgements about ‘new’ athletes in your coaching group. Being labelled as ‘not very coordinated’ or ‘very talented’ can have far-reaching effects.
5 Changing Mindset

Children with a fixed mindset will be more difficult to coach. For tasks they find easy, their mindset will not necessarily be detrimental to performance. When facing more challenging tasks however, they will either seek to avoid it or fail to try. They will be less open to feedback and will attribute any failure to things they cannot control.

The good news is that you can change a fixed mindset into a growth mindset where individuals believe their abilities are a starting point. Children with a growth mindset are more coachable as they are looking for ways to improve and realise it takes time and effort. Understanding the mind set of each child is an important starting point in determining how to work best with each child. You will better understand their approach and avoidance behaviour in the face of challenges. If you can see every child through your growth mindset lens, you will be better able to find creative ways to help each one improve.

You can change your belief from fixed to growth and you can help every child to shift his or her mindset. Start with your own mindset shift; listening to the types of messages you are sending yourself, will tell you where your mindset is and you then have a choice about your thinking pattern; to determine which thoughts are true, which ones are helpful. Choose to use a growth mindset in every facet of your life; whatever your current skill level, you can improve. Then look for strategies to optimise learning. Remember that your participants will model your behaviour so be sure you are modelling a growth mindset.

![Your coaching mind set](image)

You can also help children to shift their mind set. Creating a mastery-oriented climate rather than a performance-oriented climate is a good start. The table at the top of the next column (adapted from work by Lara Bercial) provides some tips.

Dweck believes that the best way to help people adopt and maintain a growth mindset is to teach them about it explicitly. Bergen (1992) found that people who read a growth mindset article changed their mindset and their persistence in the face of setbacks (see following article).

### BEHAVIOURS LIKELY TO PROMOTE A FIXED MIND SET

<table>
<thead>
<tr>
<th>Coach behaviour</th>
<th>Participant response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant comparison between children (performance orientation)</td>
<td>Lower self-esteem</td>
</tr>
<tr>
<td>Focus on demonstrating superior performance</td>
<td>Anxiety, health risks (e.g. unhealthy eating)</td>
</tr>
<tr>
<td>Low tolerance of mistakes</td>
<td>Fear of failure</td>
</tr>
<tr>
<td>Favouritism towards more capable children</td>
<td>Exacerbated internal competition and low cooperation</td>
</tr>
<tr>
<td>Provide extrinsic rewards and punishments</td>
<td>Undermine intrinsic motivation, become more coach-dependent</td>
</tr>
<tr>
<td>Labelling children by ability</td>
<td>Self-fulfilling prophecy</td>
</tr>
</tbody>
</table>

### BEHAVIOURS LIKELY TO PROMOTE A GROWTH MIND SET

<table>
<thead>
<tr>
<th>Coach behaviour</th>
<th>Participant response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant comparison between children (performance orientation)</td>
<td>Helping children to self-assess their competence (mastery orientation)</td>
</tr>
<tr>
<td>Focus on demonstrating superior performance</td>
<td>Focus on effort and improvement</td>
</tr>
<tr>
<td>Low tolerance of mistakes</td>
<td>Mistakes seen as opportunities for learning</td>
</tr>
<tr>
<td>Favouritism towards more capable children</td>
<td>Equal treatment of children</td>
</tr>
<tr>
<td>Provide extrinsic rewards and punishments</td>
<td>Foster intrinsic motivation by structuring sessions to promote autonomy, belongingness and competence</td>
</tr>
<tr>
<td>Labelling children by ability</td>
<td>Teach children how the brain grows with work just like muscles</td>
</tr>
</tbody>
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### Helping the children’s mind set:

Help children set learning not performance goals. Praise children’s effort, learning and understanding rather than their ability. Help them see the difference between growth and fixed mindset; choose your words carefully. Gently help them re-structure their thinking into a growth framework. Don’t focus on failure; help the children to identify what to do to improve. Build a positive learning environment that encourages trying new things and accepting mistakes as a part of learning. Help children interpret the losses accurately and focus on the learning rather than the outcome. Help children focus on what will help them improve, what’s stopping them from trying? Encourage them to embrace challenge, learn from setbacks and listen to feedback to determine the next steps to take.

A number of studies have shown that by teaching students mindset training and brainology, there are significant and sustained improvements in school performance, motivation, achievement and resilience (Blackwell et al 2007). There is complementary evidence in the cognitive psychology/neuroscience literature where through neuroimaging an increase in neuron density and neural connections was found during teenage years which corresponded to changes in verbal and non-verbal performance tests (Ramsden, S et al 2011, Nature 479, p13).
YOU CAN GROW YOUR BRAIN
New Research Shows the Brain Can Be Developed Like a Muscle

Many people think of the brain as a mystery. We don’t often think about what intelligence is or how it works. And when you do think about what intelligence is, you might think that a person is born either smart, average, or dumb—either a “math person” or not—and stays that way for life. But new research shows that the brain is more like a muscle—it changes and gets stronger when you use it. Scientists have been able to show just how the brain grows and gets stronger when you learn.

Everyone knows that when you lift weights, your muscles get bigger and you get stronger. A person who can’t lift 20 pounds when they start exercising can get strong enough to lift 100 pounds after working out for a long time. That’s because muscles become larger and stronger with exercise. And when you stop exercising, the muscles shrink and you get weaker. That’s why people say “Use it or lose it!” But most people don’t know that when they practice and learn new things, parts of their brain change and get larger, a lot like the muscles do. This is true even for adults. So it’s not true that some people are stuck being “not smart” or “not math people.” You can improve your abilities a lot, as long as you practice and use good strategies.

Inside the outside layer of the brain—called the cortex—are billions of tiny nerve cells, called neurons. The nerve cells have branches connecting them to other cells in a complicated network. Communication between these brain cells is what allows us to think and solve problems. When you learn new things, these tiny connections in the brain actually multiply and get stronger. The more you challenge your mind to learn, the more your brain cells grow. Then, things that you once found very hard or even impossible to do—like speaking a foreign language or doing algebra—become easier. The result is a stronger, smarter brain.

How Do We Know That The Brain Can Grow Stronger?

Scientists started thinking the human brain could develop and change when they studied adult animals’ brains. They found that animals who lived in a challenging environment, with other animals and toys to play with, were different from animals who lived alone in bare cages. While the animals who lived alone just ate and slept all the time, the ones who lived with different toys and other animals were always active. They spent a lot of time figuring out how to use the toys and how to get along with other animals. These animals had more connections between the nerve cells in their brains. The connections were bigger and stronger, too. In fact, their whole brains were about 10% heavier than the brains of the animals who lived alone without toys. The adult animals who were exercising their brains by playing with toys and each other were also “smarter”—they were better at solving problems and learning new things.

Can Adults Grow Their Brains?

Scientists have recently shown that adults can grow the parts of their brains that control their abilities—like the ability to do math or even to juggle. In one study, scientists found a group of adults who were not jugglers. They taught half how to practise juggling in the right way. These people practiced for a long time and got much better at juggling. The other half didn’t practice, and didn’t get better. Next, the scientists used a brain scanner to compare the brains of the two groups of people. They found that the people who learned how to juggle actually grew the parts of their brains that control juggling skills—the visual and motor areas. Their brains had changed, so they actually had more ability. This was surprising because these people said before the study that they couldn’t juggle—just like some people say they’re “not good at math.” But when they learned good strategies for practicing and kept trying, they actually learned and grew their brains. This can happen because learning causes permanent changes in the brain. The jugglers’ brain cells get larger and grow new connections between them. These new, stronger connections make the juggler’s brain stronger and smarter, just like a weightlifter’s toned muscles.

A Formula For Growing Your “Math Brain”: Effort + Good Strategies + Help From Others

Scientists have also found that learning to juggle is a lot like getting better at math. When people learn and practice new ways of doing algebra or statistics, it can grow their brains—even if they haven’t done well in math in the past. Strengthening the “math” part of your brains usually happens when you try hard on challenging math problems. But it’s not just about effort. You also need to learn skills that let you use your brain in a smarter way. If you use a bad strategy, you may not learn—even if you try hard. A few people study for math by doing the same set of easy problems and skipping the hard ones, or just re-reading the textbook, because it feels easier. Yet when it comes time to do the test, they don’t do well because they didn’t work on problems that stretched their brains and taught them new
things. When this happens, they may even say “I’m just not smart at math.”

But the truth is that everyone can become smarter at math if they practise in the right way. If a weight lifter watched other people exercise all day long, he wouldn’t get any stronger. And if someone tried to learn how to juggle by just reading a book about juggling, they wouldn’t learn. You actually have to practise the right way—and usually that means the hard way—to get better at something. In fact, scientists have found that the brain grows more when you learn something new, and less when you practise things you already know. This means that it’s not just how much time and effort you put in to studying math but whether, when you study, you learn something new and hard. To do that, you usually need to use the right strategies. People often learn those good strategies from others, like teachers or students who do well. Luckily, strategies are easy to learn if you get help.

The Truth About “Smart” and “Dumb”
People aren’t “smart” or “dumb” at math. At first, no one can read or solve equations. But with practice, they can learn to do it. And the more a person learns, the easier it gets to learn new things—because their brain “muscles” have gotten stronger. This is true even for adults who have struggled for a long time to learn something.

Dr. Wittenberg, a scientist from Wake Forest University, said “We used to think adults can’t form new brain connections, but now we know that isn’t true… The adult brain is like a muscle, and we need to exercise it.” People who don’t know this can miss out on the chance to grow a stronger brain. They may think they can’t do it, or that it’s too hard. It does take work to learn, just like becoming stronger physically or becoming a better juggler does. Sometimes it even hurts! But when you feel yourself get better and stronger, you realize that all the work is worth it!

References:
A similar version of this article was written by Lisa Blackwell and can be downloaded from: www.brainology.us/websitemedia/youcangrowyourintelligence.pdf
HEALTH & SCIENCE News You Can Use

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