A Dozen Tools to Foster Growth Mindset and Prevent Learned Helplessness

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Why do some students persist in the face of setbacks and excel in school, while others give up easily, disengage, and suffer academically? There are two theories that explain the difference between your high achievers and your at-risk students even more than does the difference in their intellectual abilities. The theories are Growth Mindset and Learned Helplessness. Growth Mindset and Learned Helplessness predict who will be resilient and who will give up. Understanding and applying these two theories allows us to foster growth mindset and to prevent learned helplessness.

Every teacher can increase student growth and achievement by becoming well versed in these two theories and how to apply them. Research based on these two theories demonstrates students' beliefs about intelligence and student experiences with failure have a profound impact on how hard students try in school and ultimately how well they perform. In this article, we explore these two theories. In addition to closely examining each theory, we will see how these seemingly unrelated theories are intricately intertwined and we examine a dozen research-based tools you can use to help your students develop a growth mindset and prevent learned helplessness. For a preview of the tools we will examine, see box: Growth Mindset Tools.

Growth Mindset Tools

1. ***Teach Neuroplasticity***
2. ***Have Students Advocate Growth Mindset***
3. ***Promote Growth-Mindset Language***
4. ***Allow Make-Up Tests and Assignments***
5. ***Praise Effort, Not IQ***
6. ***Teach Perseverance***
7. ***Have Students Practice Growth Mindset Self-Talk***
8. ***Display Growth Mindset Posters***
9. ***Teach Students to Dispute Pessimism***
10. ***Force Performance***
11. ***Immunize Against Helplessness***
12. ***Teach with Growth-Mindset Kagan Structures***

Understanding these two theories and using these simple tools can set you on a path to fostering in your students a growth mindset and avoiding their slipping into helplessness. Changing your students' beliefs about their own efficacy and how they handle setbacks means the difference

between school success and school failure. It can even mean the difference between personal happiness and despair.

Mindset and Helplessness: Apparent Differences

Whether a student has a growth vs. a fixed mindset depends on their belief about the nature of intelligence.[1] Whether a student develops learned helplessness depends on their reinforcement history.[2] Because learned helplessness is a function of reinforcement history in contrast to a fixed mindset which depends on belief about the nature of intelligence, at first examination it would seem these two constructs are quite different. Learned helplessness is based on the type of reinforcement a person has experienced; fixed mindset is based on an explicit or implicit belief in the nature of intelligence. One theory is cognitive; the other theory behavioural. Mindset is a function of beliefs; helplessness is a function of reinforcement. As we will see, learned helplessness is observed in in rats, fish, and cockroaches. Certainly, it cannot be argued fixed mindset is the same as helplessness—cockroaches almost certainly do not have beliefs about the nature of intelligence! Nevertheless, after we overview each theory we will discover the two theories are joined at the hip.

Fixed vs. Growth Mindset

The concept of a fixed vs. growth mindset was developed by Carol Dweck.[3] She observed that when students were given problems too difficult to solve, some gave up easily and some persisted. Those who gave up easily had a fixed mindset. They believed intelligence was a given quantity and their inability to solve the problems indicated they were not smart enough. Those who persisted in the face of difficulty had a growth mindset. They believed intelligence could be developed with effort and so persisted in the face of difficulty. A student with a fixed mindset believes intelligence is immutable; a person with a growth mindset believes that with effort intelligence can be increased. From these two different beliefs about the nature of intelligence flow a number of differences in behaviour, as pictured in the illustration, Fixed vs. Growth Mindset: Self-Fulfilling Prophecies.

Students with a fixed mindset are primarily concerned with performance goals, appearing smart. They are involved in social comparisons and want to look smart and look smarter than others.

Those with a growth mindset are primarily concerned with learning goals, getting smart. Given these different goals, those with a fixed mindset avoid challenges and give up easily in the face of a challenge because they don't want to fail at a task that can be viewed as a reflection of their intelligence. In short, they don't want to appear dumb; their primary concern is appearing smart. In contrast, those with a growth mindset approach challenges and persist in the face of difficulty. They look forward to challenges, knowing it is from difficult problems that you learn. Their primary concern is getting smarter. Avoiding learning opportunities and giving up easily in the face of difficulty leads those with a fixed mindset to have a static IQ whereas approaching and persisting in challenges leads those with a growth mindset to develop their IQ. In short, both a fixed and a growth mindset are self-fulfilling prophecies.

"Whether you think you can, or think you can't – You're right."
—Henry Ford

Learned Helplessness

Learned helplessness was a serendipitous discovery by Martin Seligman and Steven Maier.[4] They observed that most dogs behaved in a strange way following receiving inescapable shocks. When the dogs that received inescapable shocks were placed in a situation in which they could easily avoid shocks by simply moving, two thirds of the dogs would lay down and take shock after shock. In contrast, almost all dogs that had not received the inescapable shocks very readily moved to a safe area to avoid the shocks. Seligman and his co-workers discovered the helplessness paradigm holds true with cats, rats, fish, birds, mice, primates, and even cockroaches.[5] Learned helplessness frequently results when animals are placed in situations in which their efforts cannot influence their outcomes.

Learned helplessness has been replicated in humans.[6] In an experiment analogous to the initial experiment with dogs, people were given an apparatus that had a red spring-loaded button and were instructed they could do something to turn off a loud annoying sound.[7] Half the participants were in a helpless situation because button pushing could not turn off the noise; the other half could use the button to turn off the annoying noise. In the second phase of the experiment participants were put in a situation in which they could learn to turn off an annoying whooshing sound simply by sliding the lid of a box. About two-thirds of individuals who had the helplessness experience in the first phase of the experiment simply sat without trying to turn off the aversive noise. Those who had not had the helplessness experience readily learned to turn off the annoying sound. Conclusion: A learned helplessness experience causes many people to quit trying—not just in the helplessness situation, but also in situations in which they could control their outcomes if they would only try!

The impact of uncontrollable outcomes for humans depends, however, on how people interpret the cause of the uncontrollability.[8] There are three dimensions to consider: Is the outcome Stable or Unstable; and Internal or External; Global or Specific? What a student believes is the cause of their helplessness in a given situation determines if the impact will be enduring and devastating or just temporary and with little impact. This becomes clear by examples. Let's consider possible attributions a student might make as to the reason he has failed a math test:

Stable: *"I will never be good at math."*
Unstable: *"I had a cold on test day."*

Internal: *"I am not smart."*
External: *"The teacher made a lousy test."*

Global: ***"This will give me a bad grade, and that means I won't go to a good college. My life is ruined."***
Specific: ***"This is just one test in one subject."***

These attributions can combine in a variety of different ways, with different results. To take just two contrasting sets of attributions:

Stable, Internal, Global: ***"I will never be intelligent and that will affect everything."***
Unstable, External, Specific: ***"I was exhausted because I was up all night with my sick dog, but it wont make much difference; I can do a make-up test."***

Clearly stable, internal, and global attributions for failure are a prescription for helplessness and decreased future effort. In contrast, unstable, external, and specific attributions for failure would likely lead to optimism and enhanced effort. Thus it is not just a negative experience that determines helplessness, but rather the attributions one makes as to the cause of the negative experience.

Mindset and Helplessness: Joined at the Hip

Although a fixed mindset results from one's belief about the nature of intelligence and learned helplessness results from situations in which one's efforts do not impact on one's outcomes, an examination of the theory and research in these two fields reveals a fixed mindset is a special case of learned helplessness.

Picture two students, one with a growth mindset and one with a fixed mindset. Imagine further that the students both face initial failures or difficulties in a learning task and attribute the setback to not being smart enough to meet the requirements of the task. The student with a growth mindset believes she or he can become smarter with effort, so persists at the task: *"I am not yet smart enough to solve this problem, but with effort I will get smarter."* The student with a fixed mindset also interprets the initial failure as a reflection of insufficient intelligence, but believes one cannot get smarter through effort. So the fixed mindset student sees no reason to persist at the task. In fact, the student sees a good reason to give up — persisting will only further reveal a lack of intelligence. Essentially, once the student with a fixed mindset interprets initial setbacks as a reflection of lack of sufficient intelligence, the student is in a situation of helplessness: *"I am not smart enough for this task, and I can't get smarter."* Thus, in the face of initial setbacks attributed to lack of sufficient intelligence, students with a growth mindset persist whereas students with a fixed mindset are in the same situation as students who have acquired learned helplessness: Both believe effort will not impact on outcomes, so there is no use in trying. In the face of setbacks attributed to insufficient intelligence, a fixed mindset belief system results in the experience of helplessness.

Support for the conclusion that a fixed mindset is a special case of helplessness comes from research studies examining the behavior of helpless and fixed mindset students. Students with a fixed mindset behave in the same way as those with learned helplessness: Both groups give up in the face of failure, exert less effort toward achievement, and perform more poorly academically.

Response to Failure

Students with fixed mindset and learned helplessness give up in the face of failure.

Mindset and Response to Failure. To measure a fixed vs. growth mindset, experimenters assess how much students agree or disagree with statements that reflect a belief that intelligence is either fixed or malleable. For example, they are tested in how much they agree with statements like:

> **Fixed Mindset:** ***"You have a certain amount of intelligence, and you really can't do much to change it."***
> **Growth Mindset:** ***"You can always greatly change how intelligent you are."***

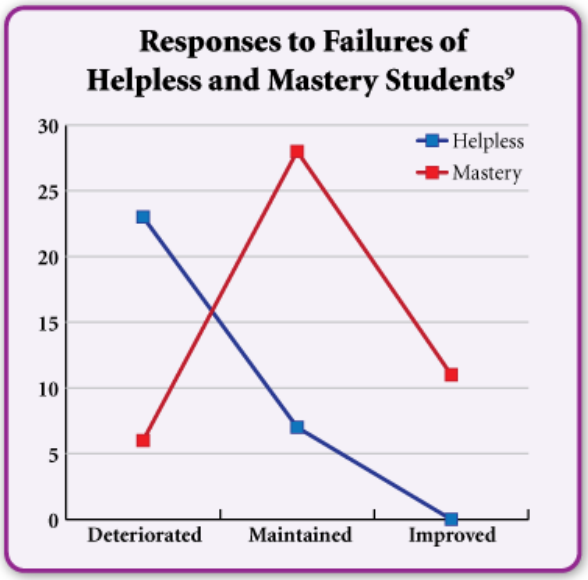
A number of studies reveal that following failures students with a growth mindset improve more than students with a fixed mindset.[9] Growth mindset students approach errors as a learning opportunity. They deeply process where they went wrong; they want to learn from their mistakes. In contrast, those with a fixed mindset treat errors as a negative reflection on their intelligence, and spend less time processing the error. If you believe intelligence is fixed, there is less motivation to attempt to learn from your errors.

Helplessness and Response to Failure. Helpless students respond to failure in the same way as those with a fixed mindset. To measure helplessness, experimenters categorize students as helpless or mastery-oriented based on their explanatory style—how they explain their outcomes. Students are administered a forced-choice questionnaire in which they choose the cause of their outcomes across a variety of situations.[10] For each item they can choose a cause they can control (Mastery-Oriented), or a cause that is out of their control (Helpless). Sample explanatory style items:

> **If a teacher passes you to the next grade, is it**
> **A. Because she likes you or**
> **B. Because you worked hard**
>
> **Suppose you did well in a test in school, is it**
> **A. Because you studied hard, or**
> **B. Because the test was easy**

Helpless and Mastery-Oriented students respond to failure very differently. In an extremely revealing study, students were divided at the medium. Those who more often chose causes out of their control were labelled Helpless; those who more often chose causes they control were labelled Mastery-Oriented. The students were then given a series of discrimination tasks and their verbal and behavioural responses were recorded following successes and failures.[11]

Following failures, helpless students deteriorated in the use of successful strategies; in effect they gave up. In contrast most Mastery-Oriented students either continued to use successful strategies or improved. See graph: Responses to Failures of Helpless and Mastery Students



The response to failures is remarkably different for the Helpless and Mastery-Oriented students. The most frequent response for Helpless students following failures is to give up and begin using non-adaptive strategies. That was the least frequent response for Mastery-Oriented students who most often either maintained or improved their efforts. Following failures, none of the Helpless students were resilient; none improved their attempts to problem solve and very few maintained their prior level of performance. The failure experience was devastating—after failures they could not solve the problems they had easily solved before! Among the Mastery-Oriented students the most common response was to be resilient. That is, they maintained their performance. Following failures their performance more often improved than deteriorated. A failure led them to try harder. This finding was replicated in two additional studies.[12]

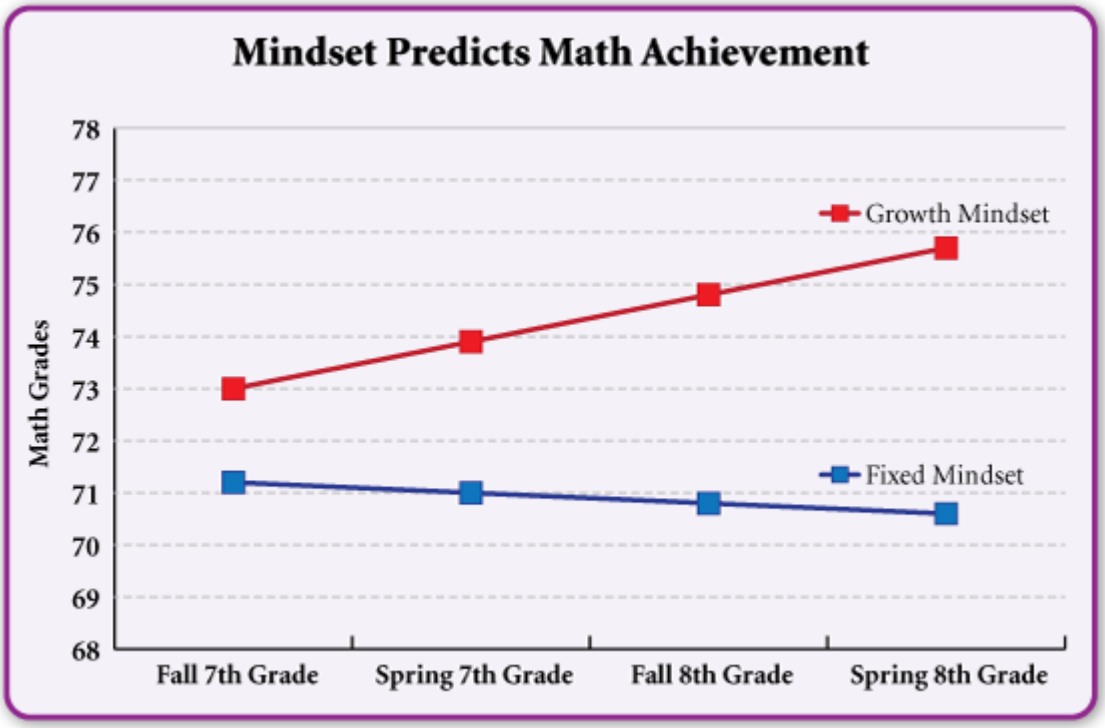
The verbal statements of Helpless students following failures reflected their having stopped trying. They said things like, *"I'm getting confused"* and *"I never did have a good rememory [sic]."* In contrast the mastery-oriented students did not reflect on their failures, rather they focused on searching for a way to improve. They said things like, *"I should slow down and try to figure this out"* and *"The harder it gets the harder I need to try."* Following a series of failures the helpless students gave excuses for their failures; the mastery-oriented students verbalized ways to perform better. One group sought to blame external factors; the other sought solutions.

Academic Achievement

Both fixed mindset and learned helplessness students perform poorly academically compared to growth mindset and mastery-oriented students.

Mindset and Achievement. Having a growth vs. fixed mindset predicts academic achievement. In a clear demonstration of that relation, the math achievement of students entering junior high was tracked for two years.[13] At entry the students were asked just six questions, three that endorsed a fixed mindset and three that endorsed a growth mindset. If a student agreed with statements like *"You have a certain amount of intelligence, and you really can't do much to change it,"* the student was considered to have a fixed mindset. If the student agreed with statements like, *"You can always greatly change how intelligent you are,"* the student was considered to have a growth mindset.

Although students had similar math achievement scores at entry to junior high, students with a growth mindset steadily improved over the next two years whereas those with a fixed mindset declined in math achievement. See graph: Mindset Predicts Math Achievement.



Helplessness and Achievement. A number of studies reveal helpless students perform poorly in school. A study followed elementary school children for a two-year period. Ratings of helplessness in year one predicted poor performance on an objective achievement test in year two.[14]

Researchers use the term "Optimist" as the opposite of "Helpless." Whereas Helpless students believe their failures are due to stable, internal factors they cannot control, Optimists believe failures are temporary and controllable. College freshman students at Virginia Tech were assessed on optimism. High optimism was associated with better grades. Student level of optimism was a better predictor of their first semester grades than was the SAT test, which is highly correlated with IQ and which is designed to predict college achievement![15]

A similar study at the University of Pennsylvania using a measure of optimism administered to five hundred members of the incoming class found optimism was a better predictor of freshman academic achievement than both SAT scores and high school grades.[16]

As an undergraduate I was on the UC Berkeley swim team, so the following research study has particular salience for me. It provides important information for every teacher who has ever seen a student give up in the face of difficulty or a setback. The study was designed to test the power of optimism in determining resilience.[17] Would an optimistic belief system predict which swimmers responded to a serious setback with resilience? Who would step up their effort in the face of difficulty and who would fade? First, a measure of optimism was administered to all the men and women varsity swimmers on the UC Berkeley swim team. Then they were instructed to swim one of their best events as fast as they could. Next, they were given false feedback: they were told their time was quite poor. The swimmers were given a rest and then told to swim the race again. The question: Who would bounce back following this simulated defeat and whose performance would be knocked down? Those swimmers who scored pessimistic on an optimism scale swam much worse following the simulated set back, some swimming so slowly their time would be dead last in a real race. In contrast, the optimists either maintained their prior fast time or got even faster. Several of the optimists improved their time between two and five seconds—tremendous gains, enough to be the difference between a terrible race and a win![18] A swimmer's optimism score also predicted which swimmers had worse than expected swims for the season: Those who scored pessimistic had twice as many "worse than expected" swims as did the optimists!

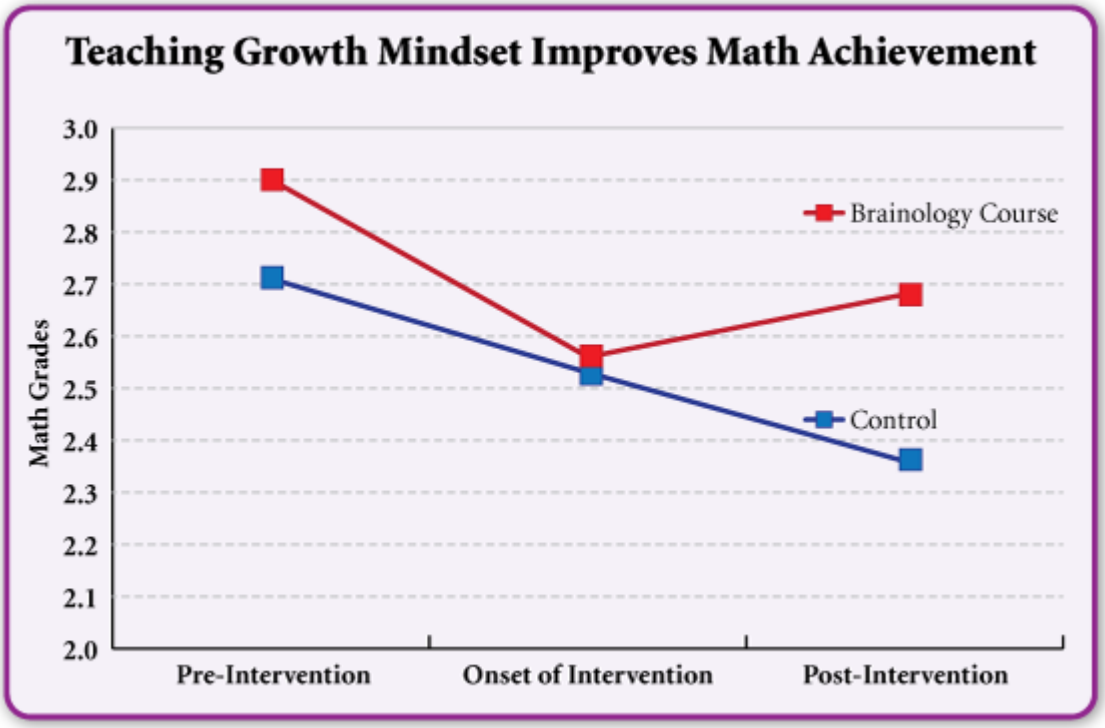
Fostering Growth Mindset and Learned Effectiveness

There are many approaches to overcoming a fixed mindset and learned helplessness. A detailed review of those approaches is beyond the scope of this paper. Here we briefly examine some successful approaches.

1. Teach Neuroplasticity

Adolescent students who were taught a course in 'brainology' that emphasized neuroplasticity (how the brain develops with practice) improved their math scores. Those with a fixed mindset declined in their scores.[19]

Prior to the intervention, the math grades of all of the students were declining. At the outset of the intervention the math grades of the brainology and the control groups were almost identical. Following learning about and adopting more of a growth mindset, students in the brainology group improved dramatically compared to those in the control group who continued to decline. See graph: Teaching Growth Mindset Improves Math Achievement.



Student comments after taking the brainology course reflect the intended shift in mindset:[20]

> ***"After Brainology, I have a new look at things. Now, my attitude towards the subjects I have trouble in is I try harder to study and master the skills."***
>
> ***"I did change my mind about how the brain works and I do things differently. I will try harder because I know that the more you try the more your brain works."***

Applying this research, we can increase growth mindset by teaching students how the brain is like a muscle and how the brain is constantly growing new neural connection. Rather amazingly, simply teaching students about neuroplasticity increases their motivation and achievement.

2. Have Students Advocate Growth Mindset

By having students advocate the importance of a growth mindset, they increase their belief in growth mindset and as a consequence increase their motivation and achievement. This was demonstrated in two experiments, one having students create a growth mindset web page and the other by having them write to a pen pal about the power of having a growth mindset.

The Web-Page Experiment. Experimenters relied primarily on the Internet to change student's beliefs from fixed to growth mindset.[21] Experimenters had students construct a web-page advocating the importance of a growth mindset. This intervention was based on research showing "saying-is-believing." That is, when people advocate a position, their belief and commitment to that position increases. Results demonstrated that this intervention significantly improved math and reading. The results are particularly impressive given that math and reading skills were measured by the Texas Assessment of Academic Skills (TAAS), a statewide, standardized achievement test.
The Pen Pal Experiment. Applying this "Saying-is-Believing" approach in a different way, other experimenters had Stanford University undergraduates adopt a low achieving student as a pen pal, writing to them about how with effort they could grow intelligence and achieve academic success.[22] The pen pal they were writing to did not really exist, but the Stanford students were led to believe they were writing to a real, at-risk, low-achieving student. The Stanford students were asked to emphasize in their letter that intelligence is not a finite endowment, but rather an expandable capacity that grows—"like a muscle"—with mental work. Before writing their letter they were told:

> ***"Because intelligence is malleable, humans are capable of learning and mastering new things at any time in their lives. This message is especially important to get across to young, struggling students. If these students view intelligence as a fixed quantity, they may feel that they are incapable of learning if they encounter difficulty with their schoolwork. If, however, students can be convinced that intelligence expands with hard work, they may be more likely to remain in school and put effort into learning."***

Using their official grade transcripts at the end of the academic year, the grade point averages of students in the growth mindset advocacy condition were compared with control conditions. Students in the growth mindset condition had significantly higher grades than those in the control conditions. **This finding is a powerful proof that simply changing a student's belief about intelligence impacts on their academic achievement.** In addition to improved academic achievement, students in the growth mindset condition showed significantly more enjoyment of the academic process than did students in the control conditions, significantly more often indicated they "enjoyed the educational process—studying, going to class, taking tests, etc.—at Stanford."

We can apply these findings by having students advocate the power of effort in growing intelligence. We can have them do research on neuroplasticity, write essays, create posters, and even write letters to lower grade students explaining how they can grow their intelligence by persisting in the face of difficulty.

3. Promote Growth-Mindset Language

Carol Dweck, who formulated the growth mindset concept, advocates teaching students about the power of "yet." To promote a growth mindset, encourage students to add the word *yet* to *I can't* and *I haven't* statements. Have students practice: Using RoundRobin each student in turn makes an *I can't* or *I haven't* statement, pauses, and then adds the word *yet*. For examples,

I haven't memorized my 8's in the multiplication table.
Becomes
I haven't memorized my 8's in the multiplication table *yet*.

I can't do this math problem.
Becomes
I can't do this math problem *yet*.

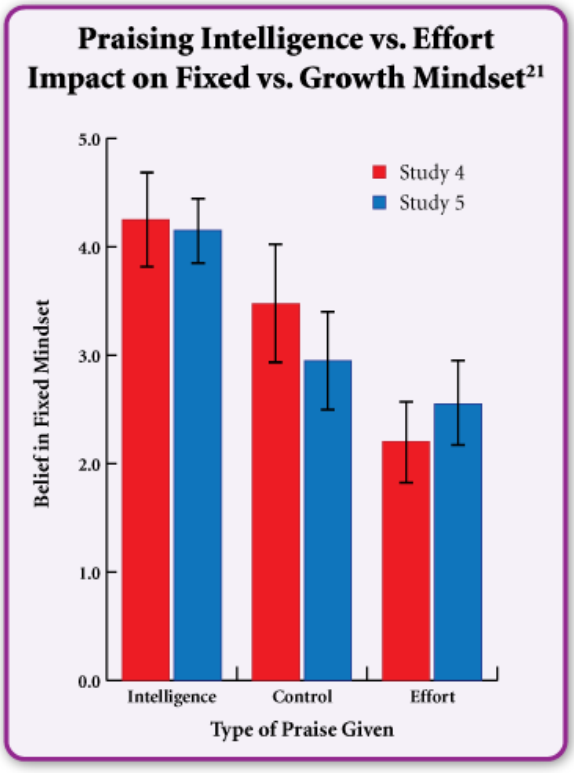
I can't get 100 on my spelling tests.
Becomes
I can't get 100 on my spelling tests *yet*.

4. Allow Make-Up Tests and Assignments

Supporting the "not yet" perseverance philosophy, we can allow students to take make-up tests and to re-do and improve assignments. If a student does not pass a test, or simply wishes to improve her/his grade, we can allow the student to study what they have missed and retake the test. Similarly, after giving feedback on a written assignments or projects, we can allow our students make-up opportunities.

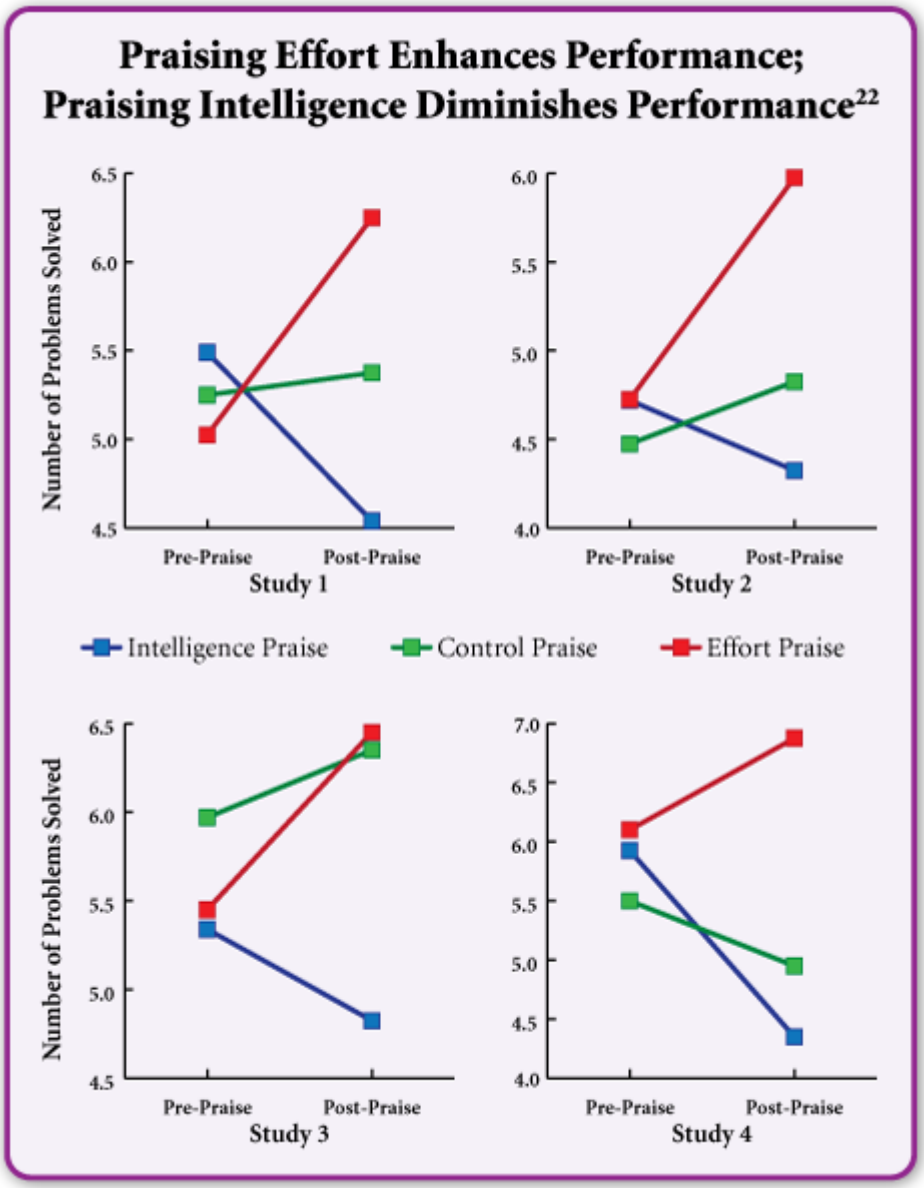
5. Praise Effort, Not IQ

How we praise students has a dramatic impact on their mindset. Praising effort promotes a growth mindset; praising IQ promotes a fixed mindset. This finding has been established through carefully controlled research. After solving problems, students were praised in one of two ways. They were told either that they were smart or that they had worked hard. In a control condition they were simply told they had done well with no attribution to intelligence or effort. Students were then assessed on having a fixed or growth mindset. The findings were almost identical in two separate studies. Students who were praised for being smart adopted a fixed mindset far more than those who were praised for their effort.[23] See Graph: Praising Intelligence vs. Effort Impact on Fixed vs. Growth Mindset.



Further evidence that how we praise has a dramatic impact on student effort and performance comes from the same study. Students who were praised for effort enhanced their performance; those who

were praised for intelligence diminished their performance. This finding held across four replications.[24]



It is not that I am so smart. I just stay with problems longer.
—Albert Einstein

6. Teach Perseverance

We can foster a growth mindset by sharing with students the power of perseverance. This can be done through literature and inspiring examples.

Literature. Have students read and reflect on stories that have as a moral the virtue of perseverance. Among the possibilities:

The little Engine That Could
The Rabbit and the Hare

Inspiring Examples. Another way to promote perseverance is by examples of famous individuals who have succeeded because of their perseverance in the face of setbacks. For examples,

- **Colonel Sanders** was rejected 1,009 times before a restaurant accepted his recipe.

- **Thomas Edison** had 9,000 experiments that did not succeed before creating a successful light bulb.
- **Michael Jordan** was cut from his high school basketball team sophomore year. He came back to become the greatest basketball player ever.
- **Steve Jobs** at 30 years old was fired from Apple Computers, the company he founded. He came back to revolutionize the music industry, the phone industry, and personal computing.
- **Walt Disney** was fired from a newspaper. The reason: he "lacked imagination" and "had no original ideas." His first animation studio went bankrupt.
- **Oprah Winfrey** was demoted from her job as a news anchor. The reason: "she wasn't fit for television." She went on to host the highest ranked TV show of it's kind, became a media billionaire and renowned philanthropist.
- **Charles Schultz**'s drawings were rejected by his high school yearbook. His Peanuts cartoons and product revenues generated over 1 billion a year. His high school now has a statue of snoopy in the main office.
- **Steven Spielberg** was rejected both times he applied to attend film school at the University of Southern California.
- **Albert Einstein** was evaluated by a teacher as someone who "would never amount to much."
- **The Beatles** were rejected by Decca recording studios. The reasons: "We don't like their sound" and "They have no future in show business."
- **Milton Hershey**'s first two businesses went bankrupt. He went on to found the Hershey Chocolate Company, a worldwide success. Hershey created a foundation, the Milton Hershey School for at-risk children.
- **J. K. Rowling** persisted after a dozen publishers rejected her first Harry Potter manuscript. She is now a billionaire.

7. Teach Growth Mindset Language and Self-Talk

Language. We can promote a growth mindset by the language we use and don't use in our classrooms. For example, we can tell students that our class is a "failure free" classroom. That is we will never use the word "failure." We never have failures, we only have setbacks.

Rather than saying *"This is a problem,"* we teach students to say, *"This is a challenge."* We approach problems with reluctance and with the belief they may not be solved, but we approach challenges more eagerly, and with anticipation of success.

Rather than saying, *"This problem is hard."* Teach students to say, *"This problem is growing my brain."*

Another language alteration that promotes an optimistic growth mindset is to eliminate the word *"try."* Rather than saying, *"I will try to do my homework tonight."* Teach students to leave out the word "try" and instead say, *"I will do my homework tonight."*

When possible catch students and have students catch each other to align their language with a growth mindset.

Self-Talk. We can share with students the power of self-talk. What we say to ourselves determines our behaviour. Ask students what a student is likely to do if, after a learning setback, the student says to himself or herself:

1. I am just not smart enough.
vs.
2. I need to try harder.

Point out that one self-statement leads the student to give up and the other leads the student to persist. Point out further than both statements support self-fulfilling prophecies. After sharing with students the importance of effort oriented self-talk, share with students that in our class we want to release the power of self-talk. We can provide students with self-talk statements, post them, and, have students practice growth mindset self-talk statements like those below.

"The harder I try the more I grow my brain."
"I learn from my mistakes."
"My effort makes a difference."
"If I didn't make mistakes, I would not be learning."
"If it doesn't challenge you, it won't change you."
"Persistence grows my brain."
"My brain is like a muscle. I am working it out."
"I never fail. I have temporary setbacks."
"My brain is making new connections!"
"Smarts weigh an ounce. Effort weighs a pound."

8. Display Growth Mindset Posters

We can post or have students create growth mindset posters. A search on the web under the topic "Growth Mindset Posters" produces literally hundreds of possibilities. The posters can be the form of a quote. We can have the students search for quotes and then illustrate them to create their team poster. Some possibilities:

"Whether you think you can, or you think you can't – you're right. "
—HENRY FORD

"Anyone who has never made a mistake has never tried anything new. "
—ALBERT EINSTEIN

"I have failed over and over and over again in my life. And that is why I succeed. "
—MICHAEL JORDAN

"You may have to fight a battle more than once to win it."
—MARGARET THATCHER

"Choose to be optimistic, it feels better."
—DALAI LAMA XIV

"How wonderful it is that nobody need wait a single moment before starting to improve the world. "
—ANNE FRANK

"For myself I am an optimist – it does not seem to be much use to be anything else."
—WINSTON CHURCHILL

"I can't change the direction of the wind, but I can adjust my sails to always reach my destination."
—JIMMY DEAN

"When you are asked if you can do a job, tell 'em, 'Certainly I can!' Then get busy and find out how to do it."
—THEODORE ROOSEVELT

"Optimism is the faith that leads to achievement. Nothing can be done without hope and confidence."
—HELEN KELLER

"One of the things I learned the hard way was that it doesn't pay to get discouraged. Keeping busy and making optimism a way of life can restore your faith in yourself."
—LUCILLE BALL

"They can because they think they can."
—VIRGIL

"Persistence melts resistance."
—SPENCER KAGAN

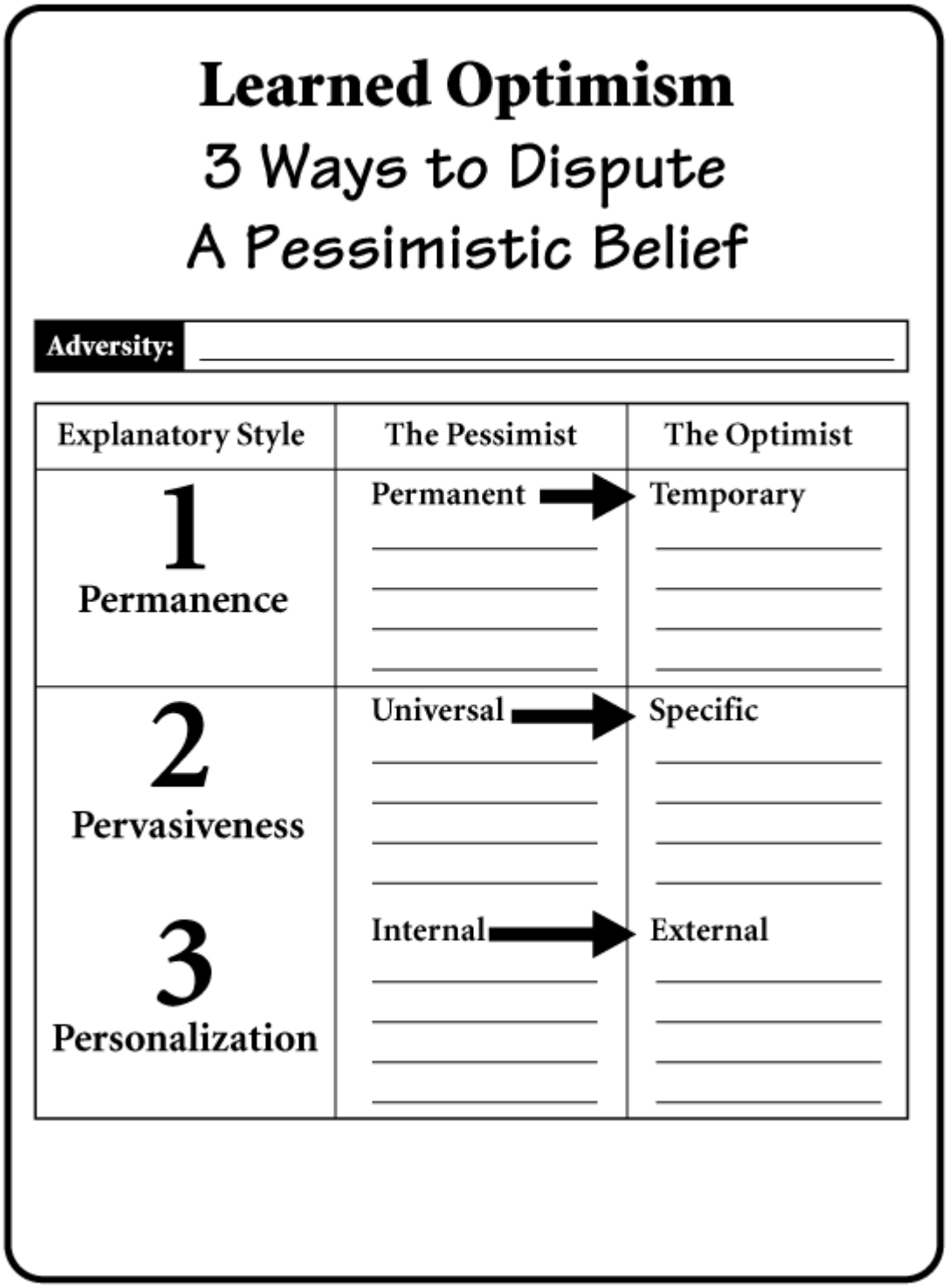
9. Teach Students to Dispute Pessimism

Martin Seligman and his associates have identified the three components of pessimistic beliefs that lead to helplessness.[25] When a setback occurs the pessimist believes it will be permanent, universal (effect everything) and internal (due to their own inadequacy). In contrast the optimist believes the setback is temporary, specific, and external. Contrast the beliefs of a pessimist and an optimist following a poor test performance:

Pessimist: ***"I will never be good at test taking. It will ruin my whole life. And it is because I am dumb."***
Optimist: ***"I scored low on this test, but I won't let it happen again. This one test won't ruin my course grade. I think the test didn't really cover the assigned content."***

We can teach students about the power of having an optimistic explanatory style and have them practice disputing their own pessimistic self-talk. Useful in this process is the form: Learned Optimism: 3 Ways to Dispute a Pessimistic Belief.

To Use



Learned Optimism

3 Ways to Dispute A Pessimistic Belief

Adversity: _____

Explanatory Style	The Pessimist	The Optimist
1 Permanence	Permanent →	Temporary
2 Pervasiveness	Universal →	Specific
3 Personalization	Internal →	External

10. Force Performance

Seligman and Maier first demonstrated the power of forced performance in their experiments with dogs. What they did was repeatedly drag the dogs to the safe area until the dogs began responding on their own. Once the helpless dogs learned their actions could avoid the shock, they were no longer helpless; they spontaneously moved to the safe area as soon as they heard the warning sound.[26] The procedure has cured helplessness in rats as well as dogs.[27]

Interestingly, it was only with great initial effort that forced performance worked:

After from 25 to 200 draggings, all dogs began to respond on their own....The recovery from helplessness was complete and lasting.... The behaviour during leash pulling was noteworthy. At the beginning of the procedure, we had to exert a good deal of force to pull the dog across the centre of the shuttle box. Usually the whole dead weight of the dog had to be dragged; in some cases, the dog resisted. Less and less force was needed as training progressed. Typically, we reached a stage in which a slight nudge of the leash would drive the dog into action. Finally, each dog initiated its own response, and thereafter never failed to escape.[28]

This direct approach to overcoming helplessness, forced performance, is employed in various ways by very strong teachers. One of the simplest approaches is to call for all students to respond via choral response.

Choral Response, like many Kagan Structures, causes all students to perform. The teacher stops mid-sentence and has students in unison complete the sentence. If not all students respond, the teacher says, "I didn't hear everyone," and then repeats the first part of the sentence, stopping for the students to fill in the missing word or phrase. The process is repeated until all students respond.

Choral Response is a favourite strategy of Marva Collins who is an expert at moving students from helplessness to mastery. Marva used the technique both with individual students and with the class as a whole. While teaching the meaning of Emerson's essay on Self-Reliance, Marva used Choral Response to get the whole class responding:[29]

"Now," she said, "self-reliance means to believe in yourself. What does self-reliance mean? To be _____."
"To believe in yourself," echoed a few faint voices.
"Everybody, in big outdoors voices, what does it mean?"
"To believe in yourself," the children said, more boldly.

An example of her using Forced Performance with an individual student occurred during the same lesson:

"Freddie, tell me what you learned from Mr. Emerson's essay."
Freddie looked attentively at Marva but didn't answer.
"You have a right to your opinion. You say what you think," Marva told him. "Don't care what anyone else thinks. What's inside of you is important."
"I learned about self-reliance," Freddie whispered.
"Speak in a big voice, peach. What does self-reliance mean? Believing in ———."
"Believing in yourself?"
"Of course it does, but say it with confidence so we all know you believe in what you're saying. Let us know how bright you are," Marva said, nodding.

Marva Collins simply insisted on performance. If a student was not responding, Marva cajoled or demanded performance, depending on the student and the situation.[30] In response to a student who was refusing to go to the blackboard to do some problems, Collins stated, "Sweetheart, what are you going to do? Use your life or throw it away?" The boy went to the board, but did not do the writing, stating, "I'm not going to do any damn work." Collins responded,

"I am not going to give up on you. I am not going to let you give up on yourself. If you sit there leaning against this wall all day, you are going to end up leaning on something or someone all your life. And all that brilliance bottled up inside, you will go to waste."

The boy went to the blackboard but refused to begin the required writing. Collins demanded performance:

"If you do not want to participate, go to the telephone and tell your mother 'Mother in this school we have to learn, and Mrs. Collins says I can't fool around, so will you please pick me up.'" At that the boy began writing.[31]

Collins simply insisted on performance. She would not take no for an answer. On the first day of class, she approached a second-grade student, who wanted no part of school,

Come on, peach, she said to him, cupping his face in her hands, "We have work to do. You can't just sit in a seat and grow smart…. I promise, you are going to *do*, and you are going to *produce*. I am not going to let you fail."[32]

Forced performance in the classroom is not unique to Marva Collins. Many very strong and successful teachers demand specific performance from their students. Jaime Escalante, whose students performed at previously unimaginable levels on the national Advanced Placement Calculus Test, demanded students perform exactly as instructed:

He checked their work. When he found a student who had not followed his form to the last decimal point, he would yell loudly, only a few inches from the accused's ear: *Burro!* Why waste my time? This got to be done. You don't understand me? *This is the way you have to do it!* Not that way, my way."[33]

It is extremely important to note, forced performance will backfire and generate even greater resistance among students unless it is coupled with love. The student must feel the teacher is on their side, trying to help them. The student needs to feel the teacher is trying to help them achieve something that will benefit the student, not simply have the student jump through hoops set up by the teacher. Students don't care how much a teacher knows or can teach until they know how much a teacher cares and is there to help them reach their goals. Escalante yelled at students and called them Burro, but he also demonstrated in many ways that all of that was in the service of helping them rise out of poverty and become successful.

Marva Collins was very strict and demanding, but she coupled demands for performance with expressions of love. She repeatedly let her students know her demands were out of her wanting the students to grow and develop. She was on their side. For example, when she saw a student playing with a locket and chain while Marva was reading a story, she said, "You knew how to play with a chain when you came to school. Playing with a chain is a good way to get a job, isn't it? Put it away and listen to the story…." Marva followed the reprimand by putting it in the context of love: "I love you children all the time, even though I may correct you or disagree with you some of the time."[34]

11. Immunize Against Helplessness

In both the animal studies and human studies of helplessness, about two thirds of the subjects who receive inescapable shocks or aversive sounds fall into helplessness. What about the other third? Seligman and his colleagues speculated that life experiences had immunized those subjects against helplessness. That is, they had a sufficient number of experiences of learned effectiveness prior to the experiment so they did not fall into helplessness. They had learned that what they do makes a difference. They were resilient.

Thus, was born the concept of immunizing against helplessness. The theory: Provide an animal or student many experiences in which effort improves outcomes so that when they experience a

situation of helplessness they will not generalize to a conclusion that effort is ineffective. Essentially immunization against helplessness is training resilience.

In support of this theory is the observation that following a devastating life event such as death of a loved one or loss of a job, some individuals fall into depression (a form of helplessness) and others do not. The explanation, those who are resilient and bounce back from devastation have had life experiences in which they have learned their efforts make a difference. In contrast, those who fall into a deep, prolonged depression have not had sufficient experiences in which their efforts improved their outcomes. Support for this interpretation came from an additional experiment: Dogs were raised singly so they had little or no experience in controlling anything.[35] These dogs were far more susceptible to helplessness: it took half as many experiences of inescapable shock for them to fall into helplessness.
To test the theory of immunization, dogs and rats were given escape experiences prior to receiving the inescapable shocks.[36] The result: immunization worked! That is, those animals who had learned that their efforts controlled their outcomes, did not fall into helplessness. Animals who had earlier experiences of control made far more assertive efforts at escaping the shock.

Thus there is support for providing students many experiences in which they can control their outcomes. This can take many forms in the classroom. Some possibilities:

- Provide student choice over how to be evaluated: Essay, performance, test, video production….
- Provide student choice over reading material.
- Teach a skill no student has mastered in a way all students can master it, and then celebrate how effort led to mastery.
- Have students write on the topic "A Skill I Am Proud of Mastering."
- Allow make-up tests, essays, and performances, and then celebrate improvement.
- Have students reflect on and share with teammates how effort lead them to mastery in areas like swimming, riding a bike, tying their shoes.

12. Teach with Kagan Structures

Many Kagan Structures inoculate students against helplessness and provide experiences that promote a growth mindset. Here we will overview just three: Team-Pair-Solo, RallyCoach, and Numbered Heads Together.

Team-Pair-Solo
Team-Pair-Solo is an outstanding example of a Kagan Structure that inoculates students against helplessness. Progressing through the steps of the structure, students have an immediate experience reinforcing the belief that effort leads to mastery.

Student teams are presented a problem beyond the capacity of most students. They are encouraged to work as a team to solve the problem. When the team can readily solve that type of problem, the team of four breaks into two pairs. Working in pairs students take turns solving the same type of problem, receiving help from their partner if necessary. When pairs can readily solve that type of problem, the partners separate to solve the same type of problem on their own. If an individual falters, they re-join their partner to solve additional problems as a pair until they can confidently solve the problems working solo.

Students discover that with effort they can do on their own what prior to Team-Pair-Solo they could do only with the help of teammates. The structure causes students to see that effort improves outcome.

The steps of Team-Pair-Solo are detailed in our basic book of cooperative learning.[37]

RallyCoach

RallyCoach is one of the most popular of the Kagan mastery structures. In the mastery structures students receive guided practice that ensures success. Instead of working alone on a worksheet that can lead to a fixed mindset ("I am not smart enough to do these problems"), in RallyCoach students work with a partner, taking turns solving problems. The student watching their partner solve a problem provides coaching if necessary and celebrates success with growth mindset praise like: "Your effort is making you smarter!"

Students working alone on a worksheet, either in class or for homework, too often don't receive the coaching or support necessary to promote a growth mindset. Students too often discover at home they don't know how to solve the worksheet problems and don't know where to turn for help, promoting helplessness. Even in class some students are too embarrassed to ask for help and sit with their pencil on the paper while their mind wanders, or worse yet, practice an entire sheet of problems wrong. A student receiving negative feedback after the teacher has had time to grade her worksheet is likely to conclude, "I am not smart enough." This cannot happen in RallyCoach as the students receive immediate corrective feedback. They see that with corrective feedback they can improve. They acquire a growth mindset.

The steps of RallyCoach are detailed in our basic book of cooperative learning.[38]

Numbered Heads Together

Numbered Heads Together is a great antidote to class review sessions in which the teacher calls on one student at a time to answer teacher-generated questions. That traditional format often devolves into a conversation between the teacher and the high achieving students in the class because the low achievers don't raise their hands to be called upon. Low achievers in that structure are likely to feel they are not smart enough to answer, promoting a fixed mindset.

In contrast, a class review using Numbered Heads Together holds each student responsible for responding to each question. After the teacher asks a question there is silent think time followed by each student writing her or his best answer. Then each student in turn shares their answer with their teammates. After that, teammates discuss their answers and reach consensus on their best answer. Students have a number, usually 1 through 4, and in the next step of the structure the teacher calls a number. Each student with that number stands up to share her or his best answer, usually using simultaneous response modes, like holding up their answer board.

Following the use of Numbered Heads Together, achievement increase dramatically and over 80% of students agreed to the statement, "Other students thought I was smarter."[39] Why? In Numbered Heads Together all students are engaged and each responds to each question. Students who think they are not smart enough to respond when the whole class question-answer approach is used become fully engaged, and in the process, others come to appreciate their intelligence.
The steps of Numbered Heads Together are detailed in our basic book of cooperative learning.[40]

Conclusion

Seeing fixed mindset as creating helplessness in the face of intellectual challenges deepens our understanding of both mindset and helplessness. Exploring the links between the two theories provides additional tools both for fostering a growth mindset and for preventing helplessness.

Two additional theories are linked to mindset and helplessness: Internal vs. external locus of control[41] and Self-efficacy.[42] These theories are quite similar theoretically to the theories of fixed mindset and learned helplessness. Further, empirical studies demonstrate that an external locus of control, as well as a lack of self-efficacy predict diminished academic achievement. For example, the Coleman Report, perhaps the largest study of schooling ever conducted, found a simple measure of belief in internal vs. external control predicted school performance better than IQ and better than a combination of many other predictors of achievement.[43] Support for the relation of external control and lower school achievement comes also from a large review of the literature on locus of control and academic achievement.[44] Similarly, lack of self-efficacy, not believing one's actions can produce desired outcomes, is strongly associated with diminished academic achievement.[45]

To an important extent these four theories provide different languages to describe the same phenomena: Students achieve more when they feel what they do makes a difference, when they are optimistic, confident, and feel that with effort they can grow their brain. There is perhaps one word that best captures what these theories are pointing to: Resilience. These theories inform us what causes a student faced with a challenge to either wilt or step up to the challenge.

Applying these theories allows us to improve school achievement. But more importantly, applying these theories gives us the power to promote resilience—one of the most important life skills and character virtues. As educators we have the power to foster resilience. Our students can feel empowered, confident, and optimistic. And to the extent we foster this expectation of success in our students, the more likely they are to succeed not just in school, but also in reaching their life goals. To the extent we foster resilience in our students, an optimistic "can do" attitude, our students are destined to have happier and more successful lives.

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