

The Power of Praise

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Research in psychology and neuroscience reveals praise can promote attention, performance, learning, and retention. But there are cautions: Praise given in wrong ways can reduce motivation, performance, and achievement. Let's first examine the benefits of praise, and then turn to two cautions when using praise. Finally, let's conclude with some practical principles of when to praise and how to praise in our classrooms.

Three Benefits of Praise

1. Praise Enhances Performance

There is a very large and growing body of research demonstrating that Eliciting Positive Emotion (EPE) prior to performance enhances performance. It does not matter how the positive emotion is elicited (have students laugh, think of something that made them happy, receive a small gift), it improves problem solving, enhances creativity, promotes cognitive and linguistic fluidity, broadens field of vision, and even boosts IQ! When we are happy, we are smarter.

The research on the benefits of eliciting positive emotion is presented in my book, **Brain-Friendly Teaching**.¹ There I provide details of many studies demonstrating that eliciting positive emotions prior to performance enhances performance, including the following studies:

- Eighth grade students, college students, and adults all more often solve a creative thinking problem if we elicit positive emotion first.
- A good laugh first results in more creativity in boys and girls.
- Adolescent students had greater verbal fluency and superior categorizing skills when positive emotion was elicited prior to being tested.
- Eliciting positive emotion actually makes us see more; we have a wider field of vision.
- When given a series of remote association questions that ask students to think of one word that links three other words (e.g., What is a word that links Mower, Atomic, and Foreign?), students come up with more correct solutions (in this case, the word Power) when positive emotion is elicited prior to the test.
- Four-year-olds told to Think of something that made you happy prior to taking the block assembly test, a subscale of the IQ test, actually score a higher IQ.
- When students are told to Think of a time when you were extremely happy prior to a five-minute math test, they complete more problems and score more correct.

Because praise of any sort (You are a great friend. Glad to have you on our team! Your smile brightens the day.) elicits positive emotion, the implications are clear. We will enhance performance if we have teammates and classmates praise each other prior to performance. As teachers, we too can enhance performance if we praise the class prior to tests, quizzes, project work, and performances. We can praise the whole class with comments like, You are a great class, You have been studying hard so I know you will do well, and You have shown me you really care about improving your essays—your effort is making a huge difference.

In general, we have given praise to students following performance. The EPE studies indicate we would do well to have students receive praise prior to performance. Anything following performance cannot enhance that performance—it is too late! But praise or any other way of eliciting positive emotion prior to a performance enhances that performance. Just as the football team gives a cheer prior to going out on the field, we need to elicit positive emotions prior to performance by our students—and praise is one way of doing that.

Why Does Positive Emotion Enhance Performance? Neuroscience helps explain why positive emotion enhances subsequent performance. Positive emotions work in several ways to enhance performance:

1. When we experience positive emotions there is a release of dopamine.

Dopamine stimulates the attention, motivation, and reward centers in the brain, so we focus more, are more motivated to finish tasks, and feel more pleasure while engaging in and finishing tasks.

2. Positive emotions release endorphins that reduce cortisol, a stress hormone. Cortisol interferes with thinking and learning, so laughing actually promotes thinking and learning by reducing cortisol.
3. When we feel support from others, like when another person praises us, there is a release of oxytocin. Oxytocin inhibits the amygdala that otherwise send inhibitory signals to the prefrontal cortex diminishing our ability to think and problem solve. Via the release of oxytocin, our prefrontal cortex functions more fully and we are actually smarter!
4. Positive emotion stimulates the parasympathetic nervous system, turning off the sympathetic fight or flight response.² When there is a threat, our attention narrows so we can better focus on the threat, and our range of thinking narrows also to concentrate on the threat. When positive emotion is elicited, it stimulates the parasympathetic nervous system, which inhibits the sympathetic nervous system, so our field of visions broadens, as does our ability to think broadly and creatively.

2. Praise Enhances Memory

The world's leading memory researcher, James McGaugh, summarizes the work of his research team in the book, *Memory and Emotion. The Making of Lasting Memories.*³ One of the most important principles in that book is retrograde memory enhancement. Retrograde memory enhancement simply means that anything followed by emotion is more likely to be remembered. Emotion is a signal to the brain, "You better remember this!" In McGaugh's words, "The evidence from many kinds of studies is consistent, and the conclusion is that inducing emotional arousal is one way of creating stronger memory."⁴ Emotion causes the brain to release epinephrine (adrenaline) and other neuropeptides that through a series of biological processes promote memory consolidation.

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It makes sense that the brain is designed to remember anything that creates emotion. The brain is designed for survival. Emotion follows experiencing the good stuff and the bad stuff, the pleasurable stuff and the painful stuff. If you touch a hot stove, you better remember that or you will get burned again. If you have a great meal at a restaurant you will remember that and will be likely to visit that restaurant again. We remember things tagged with emotion because they may be a threat or an opportunity.

I illustrate this principle in workshops by asking participants to stand up if they remember where they were when they first heard about the two planes crashing into the World Trade Center buildings. Almost every participant stands. I then say, Remain standing if you remember where you were the day before. Almost every participant sits down. Why? Finding out about planes crashing into the World Trade Center was an emotional event, whereas, for most people, the events of the prior day were not.

Retrograde memory enhancement is important in understanding the positive impact of praise on achievement. Praise produces emotion. So when a teammate, classmate, or teacher praises a student following a performance (solving a problem, sharing an idea, doing a presentation) that performance is better remembered. Anything followed by emotion is better remembered. Remembering the positive emotion associated with the performance, the student will be more motivated to create another successful performance. In effect, praise following a performance reinforces that performance and makes that type of performance more likely in the future. Reinforcement theory demonstrates anything followed by reward is more likely to be repeated. Reward elicits positive emotion and it is the power of positive emotion to enhance memory that may partially explain why reinforcement theory works successfully in a wide spectrum of fields from animal training to corporate sales incentive programs.

3. Praise Enhances Class Climate

Contrast two classrooms. In one classroom students work in isolation and do not know or care for each other. Put downs are common. In the other classroom students work in teams, know and care about each other, and frequently give each other praise. In which classroom will students be more likely to express their ideas, enjoy class and content more, give fuller effort? Praise contributes to a positive class climate that in turn promotes effort and achievement.

Two Cautions

Although the potential benefits of praise are clear, not all praise is beneficial. How we give praise can either promote or inhibit motivation, performance, and learning. There are two ways giving praise can work against achievement.

1. Praising Intelligence Can Create a Fixed-Mindset Undermining Motivation and Achievement

What we praise, intelligence or effort, has a profound impact on achievement. In her book *Mindset*,⁵ Carol Dweck distinguishes a growth-mindset from a fixed-mindset. What we praise in our students, their intelligence or their effort, impacts their mindset which in turn impacts their achievement.

Fixed-Mindset. A person with a fixed mindset believes they have only a certain fixed amount of intelligence, a certain personality, and a certain moral character.

Growth-Mindset. A person with a growth mindset believes intelligence, personality, and moral character can be cultivated and developed through their efforts.

Which mindset a student has determines their self-concept and in turn their behavior when faced with learning challenges. Research reveals that compared to those with a fixed mindset, those with a growth mindset:

Ultimately the student with a growth mindset achieves more.

- Persist more in the face of difficult learning tasks
- Choose more challenging learning tasks
- Correct rather than hide mistakes
- Less often lie to hide errors
- Escalate their efforts in response to difficulty or failure
- Maintain their confidence
- Outperform their classmates

Experiments that have manipulated mindset by teaching students about neuroplasticity, that the brain is like a muscle that becomes stronger with exercise, have demonstrated improved motivation, effort, and grades. Further, teachers recognize the difference: When asked to identify students with improved motivation, they signal out three times as many students who were in the growth-mindset condition.

Fifth grade students were praised either for their intelligence or for their effort. Those praised for their intelligence became more concerned with how well they did on tasks rather than how much they learned. After failures they persisted less at tasks, enjoyed the tasks less, attributed their failure more to lack of ability than lack of effort, thought they were less likely to improve, and performed more poorly.⁶

Let's imagine a student confronting a difficult math problem, poem to write, or science project. When the student experiences an initial difficulty, the student with a fixed-mindset is likely to say to himself, I am not smart enough to meet this challenge, and so gives up. In contrast the student with a growth-mindset is more likely to say, The more I persist at this challenge, the more I will develop my skills. One student gives up; the other persists. And persisting in the face of difficulty results in development of skills, learning, and achievement.

What does this have to do with praising? What we praise can impact the mindset of our students. If we praise students with phrases like, You are smart, You are Intelligent, or How very bright of you, we are fostering a fixed-mindset. The student is likely to attribute success to their intelligence, and if faced with

difficulty may give up, feeling they are not smart enough to solve the problem. Further, the student is not likely to tackle difficult problems because they fear failure will reveal they are not smart.

If, in contrast, we praise students with phrases like, Great effort, I can see you have been working hard at that, or Your persistence is paying off, we are fostering a growth–mindset. The student is likely to attribute success to effort, and when faced with difficulty they are more likely to persist. Further, the student is more likely to tackle difficult problems, seeing them as an opportunity to develop skills. Ultimately the student with a growth mindset achieves more.

In sum, we want to praise effort rather than intelligence to promote a growth–mindset.

2. Praising Performance Can Undermine Intrinsic Motivation

There have been hundreds of studies on the impact of extrinsic rewards on intrinsic motivation.⁷ In a prior paper, In Praise of Praise,⁸ I summarized those results. In brief, extrinsic rewards, like tokens and gold stars, are likely to erode intrinsic motivation because students begin working for those tangible rewards rather than for the satisfaction of learning. In contrast, positive feedback and verbal praise usually increase intrinsic motivation and achievement.

In brief, extrinsic rewards, like tokens and gold stars, are likely to erode intrinsic motivation because students begin working for those tangible rewards rather than for the satisfaction of learning.

Whereas the research reveals that verbal praise usually increases both motivation and achievement, there is one fairly rare condition in which verbal praise can erode intrinsic motivation—when it creates an attribution shift in a student who otherwise was intrinsically motivated.

Attribution Shift. Imagine a student who loves to paint. She readily spends time painting pictures, with no extrinsic reward. If I ask that student why she paints, she would likely say, I enjoy painting. This student is intrinsically motivated. Imagine that I then tell the student, I will give you \$50 for each painting you do. The student gladly agrees to create paintings and collects money for each painting she does. After some time, the student might say to herself, I am creating these paintings to earn money. At this point an attribution shift has occurred: Motivation once attributed to an intrinsic reward (I enjoy painting), is now attributed to an extrinsic reward (I paint to earn money). Imagine I then withdraw my monetary offer. It is possible that the extrinsic reward may have eroded intrinsic motivation, and the student might lose interest in painting (If I'm not going to get paid, I won't paint.). If painting, however, had been very intrinsically rewarding in the first place, the student might remain intrinsically motivated, saying to herself, The money was nice, but I still like to paint.

Notice, rewards erode intrinsic motivation only if there is an attribution shift. It is possible, although unlikely, that even verbal praise can erode intrinsic

motivation, but only if it causes an attribution shift. If we repeatedly give praise following performance, and the student begins working for the praise rather than the satisfaction of learning or completing tasks, then the praise has eroded intrinsic motivation. Research reveals, however, verbal praise most often increases intrinsic motivation.⁹

When to Praise; How to Praise

From the research on praise, we can draw a number of conclusions about the effects of praise, when to praise, and how to praise.

Praise Prior to Performance Enhances Performance. A wide body of research establishes that eliciting positive emotion prior to performance enhances performance. Praise elicits positive emotion actually changing brain chemistry in ways that enhance problem solving, creativity, test performance, and even IQ! Thus we should encourage students to praise each other prior to working on problems or projects, and prior to tests. The praise can come from the teacher to the class, and from students to each other:

From Teacher to Class

- Your persistence is paying off; you will do well.
- You are really working hard, great job!

From Students to Partners

- You've got grit. You don't quit.
- Persistence melts resistance!

Praise Following Performance Enhances Memory and Retention of Learning. The research on retrograde memory enhancement makes it clear that eliciting emotion following performance enhances memory for the performance. Thus, praising students immediately following a performance cements memory for that performance. We can have students work together in pairs, taking turns solving problems, and praising each other on the successful completion of each problem. Surprising praise is likely to elicit more emotion, so we can encourage students to say things like:

Fantastic job! You make learning fun. I love having you as my partner.

Praising Effort Rather than Intelligence Fosters a Growth Mindset. We want students to know, the harder they try, the longer they persist, they will actually become smarter and more successful. We can teach students about neuroplasticity—that practice leads to the growth of new dendrite connections. We want to encourage students to attribute their success to effort rather than intelligence so they will persist in the face of difficulty and be more likely to take on new challenges. We can teach students self-talk

like Persistence Melts Resistance. We can tell students the story of Edison and others who have succeeded only after great effort. We can wean ourselves and classmates from saying You are really smart, saying instead, Your effort is really paying off.

Verbal Praise and Feedback Promote Intrinsic Motivation. Given the research, we do well to give our students verbal praise rather than tokens or gold stars. Students are likely to begin working for tangible, extrinsic rewards, undermining intrinsic motivation. Verbal praise and feedback generally fosters rather than erodes motivation. A caution is to provide praise in ways that do not foster an attribution shift. We don't want students working for the praise, but rather enjoying the praise as an added benefit of engaging in intrinsically motivating curriculum and instruction.

A classroom rich in praise prepares brains for optimal performance and learning. Frequent praise creates a positive class climate and a liking for class, classmates, and content. The research demonstrating the positive effects of eliciting positive emotion prior to performance calls on us to rethink when we have students praise each other—not just following performance, but prior to performance as well! Overall, with just a bit of caution, we can unleash the power of praise to boost attention, motivation, and performance, as well as retention of learning.

Further Reading

¹Kagan, S. **Brain-Friendly Teaching: Tools, Tips, & Structures.** San Clemente, CA: Kagan Publishing, 2014.

²Benson, H. **The Relaxation Response.** New York, NY: William Morrow and Company, Inc. 1975.

³McGaugh James L. **Memory and Emotion.** The Making of Lasting Memories. New York: Columbia University Press, 2003.

⁴McGaugh James L. **Memory and Emotion.** The Making of Lasting Memories. New York: Columbia University Press, 2003, p. 94.

⁵Dweck, C.S. **Mindset. The New Psychology of Success.** New York, NY: Random House, 2006.

⁶Mueller, C.M., Dweck, C.S. Praise for Intelligence Can Undermine Children's Motivation and Performance. *Journal of Personality and Social Psychology*, 1998, 75(1), 33-52.

⁷Deci, E. L., Koestner, R. & Ryan, M. R. A Meta-Analytic Review of Experiment Examining the Effects of Extrinsic Rewards on Intrinsic Motivation. *Psychological Bulletin*, 1999, 125, No. 6, 627-668.

⁸Kagan, S. In Praise of Praise. San Clemente, CA: Kagan Publishing. Kagan Online Magazine, Spring 2007. www.KaganOnline.com

⁹Deci, E. L., Koestner, R. & Ryan, M. R. A Meta-Analytic Review of Experiment Examining the Effects of Extrinsic Rewards on Intrinsic Motivation. *Psychological Bulletin*, 1999, 125, No. 6, 627-668.