

If This Is Wrong, I Don't Want To Be Right

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Just Tell Me What To Do

One of the most frustrating classroom experiences occurs when students disengage from learning because they're scared to be wrong. As a teacher, I met many students who wanted someone to just give them the answer and now with my own children, I see it again. In many schools, students will sit and wait for the answer, whether that answer comes from another student or from the teacher. And if that answer doesn't come, many are unwilling to look for one themselves. Students often feel that the quest is only for the "right" answer, and they are more willing to wait and copy it down than to risk the possibility of putting in the work only to find out that it was wrong. Unfortunately, this perspective oftentimes generates surface learning, not deep learning. It can interfere with a student's entire notion of what learning is, causing them to think that school is a place to complete work, rather than grow one's mind.

I'd like to tell you a story about what this looks like and then share some tips on how to encourage students to take on challenges, risk being wrong, and begin to see "being wrong" as part of a natural process of learning.

Once Upon A Classroom

I observed this lack of willingness to engage in a middle school Science class a few years ago. The teacher carefully set up stations for the students to follow a process to analyze, categorize and classify several items. Each station included materials and a step-by-step list of things for the students to do. They merely had to read the next bullet and do it in order to be successful. Upon completion, the idea was that they would implicitly learn how to classify.

However, the emerging issue was not even that this was a low-level task in which the students were not problem-solving or actively learning. The sobering realization we had was that students were not even reading the bulleted steps.

Once the task began, students raised their hands right away, and when the teacher got there, they said, "We don't know what to do." The teacher would read the first step to them and they said, "Oh, OK." And got to work. I watched, dismayed as the teacher spent the entire class period, popping from table to table, reading the next bulleted item to the students. And it wasn't just the first step. It was every step. Nearly every table waited for their teacher to come to the table to read the next step to them and describe what to do, for each step of their task, rather than begin, test it out, try some things, think about it and discuss it, make a change...all those things that a scientist must do.

The teacher carefully laid out a lesson like this to try to make it accessible, but perhaps an added level of challenge is in order? It might be that the students thought the task was boring and low level and that is why they didn't engage. However, another possible explanation is that after 8 years in school, these students know

that a wrong answer (like a 3/5 correct=60%) counts...permanently. Why not wait and make sure that the answers we write down are correct? Their goals are not learning; their goals are getting correct answers recorded on their papers.

"I'm The Kind Of Guy Who Likes A Puzzle"

How do we add challenge to schoolwork when students are not equipped to grapple with difficult tasks, problem-solve, and persevere? Are our classrooms places where this can be taught? This is a massive issue which includes needed changes in grading, assessment, instruction and partnerships with families.

When we visit schools and districts to talk about growth mindsets and malleable intelligence, we often play a short clip of a young man, Roberlio, who talks about challenges and making mistakes. Roberlio says: "If you want to get good at something, you are gonna have to work for it. And some kids, they like working on challenging things." All over the country, every teacher in the room falls in love with Roberlio. How exciting that he identifies himself as the kind of person who likes to puzzle through something rather than be given an answer! "Oh Yes!" we think, "Why can't more students be like this?"

How do we get more students to understand what Roberlio knows?

Being Wrong Before Being Right

Learning is a physical process that happens in the brain. The brain changes when we pay attention to something and use some effort to make meaning. Jo Boaler of Stanford University explains in her **most recent paper** that we learn math best when we make mistakes, and our brains change during this process in as rapidly as three weeks! So one way to get "smarter" in the sense of having more knowledge or skill, is to be confused at some point, to pay attention as to why and then fill in the gaps. This is what Roberlio says he likes to do. But it is also important to know that later in his interview, Roberlio suggests something very concerning. He says he doesn't mind being wrong, as long as it is not "in front of other people." Then he says, "If it's in front of other people? I wouldn't want to do it."

How one thinks about the state of "being wrong" makes a big difference in whether or not one is willing to be in that state. If "being wrong" is painful for me, I will avoid it at all costs. But, if "being wrong" is part of my normal learning process, and I do not feel judged by other people, I will participate. The students in that science class were so averse to being wrong, they wouldn't even risk reading the step-by-step directions the teacher provided.

Perhaps they too "like puzzles." But they lack the resiliency in a classroom environment to be wrong.

What Does It Mean To Be Wrong?

Being "correct" is such a temporary state anyway. As surely as time passes, I will have a chance to be wrong again soon! Sometimes our errors are evidence of *misplaced* knowledge rather than a *lack* of knowledge – so why be so embarrassed to make a mistake? And even those of us with experience in a topic can be stumped by challenges that require some reasoning and slower thinking. For example, I have observed high school math teachers in discourse over the solution to this seemingly basic math problem:

$$6 \div 2(1+2) = ? \text{ (Is the answer 9 or 1?)}$$

The solution can be tricky because one must know whether to multiply or divide first...and why. It's even trickier when one doesn't understand conceptually how critical it is to use symbols purposefully when writing a math problem (there is probably a more clear way to write this problem). But having questions like these and asking them is a chasm so wide for many students that some never dare to cross it.

In classrooms we teach tricks like PEMDAS to help students who have these questions. We say, "Just memorize that and you will be fine." But in providing that safety net too early, we lose our curiosity. We are taught not to ask why, and we miss out on the opportunity to work out a puzzling situation and engage deeply with it. A larger missed opportunity for our students is the experience and realization that it is a desirable state to engage deeply, be puzzled, make mistakes, and learn from them.

A Place To Begin

Where does one begin? How can we get students to risk making mistakes in the service of learning?

One strategy we talk about in our professional learning sessions is using several metacognitive reflections and prelections. Getting students to think about their process instead of the answers helps them to develop a sense that learning is a process which includes experiencing challenges and struggles, applying a strategy, experimenting, and THEN finding answers.

Below, you will see a sample of some ways to ask students to be metacognitive, pause in their own learning process, and identify where they are in that process. For those students who do not engage at all in the learning process, these prompts help them begin to understand that learning happens inside each of us only when we become active participants. Learning doesn't happen to us just for showing up.

I use these prompts when students get stuck, when they are avoiding a challenge, and to promote the belief that challenge and struggle are desirable (and temporary!) states that help us achieve our larger goal of learning.

<i>Preflections</i>	Reflections
What will be the toughest thing to do in this task? Why?	What was the toughest part of this task? What did you do when it got hard?
What do you think will most challenge you today?	Who had something that challenged you today? What was it?
What will you struggle with today? What strategy might help you?	What is a challenge you are currently struggling with?
Without answering the question, explain the best way a student might solve/approach/think about this (and why).	Adult Think-Aloud: Do you want to know what I struggled with today? 

How do you help students engage deeply in their own process of learning? Share in the comments below or email us at editor@mindsetworks.com

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