

Culture *of* **ERROR**

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Building a *Culture of Error* in the Classroom

WHAT'S INSIDE

1. Expect Error
2. Withhold the Answer
3. Manage the Tell
4. Praise Risk-Taking

A classroom is a culture established through the words and actions not only of the teacher but also of the students. A teacher alone cannot establish a culture in which it is safe to struggle and fail. If snickers greet a classmate who gets an answer wrong, for example, or if impatient hands wave in the air while another student is trying to answer, very little that a teacher does will result in students' exposing their errors to anyone.

Shaping how students respond to one another's struggles is therefore a must, and is a process that starts with teaching students the right way to handle common situations before they happen. Explain how you expect them to act when someone struggles with the rationale, practice those expected behaviors in hypothetical situations, and when a breach inevitably occurs, reset the culture firmly, but with understanding. You might say something like, "Just a minute. I want to be very clear about the respect we will all show one another when we are in this classroom. We will support each other and help one another. And we will never, ever undertake actions that tear down another person. Among other things, we know that person could just as well be us."

When you think about making it safe to struggle, it's important to consider that this is not about just eliminating potentially negative

or corrosive behaviors among your students. Even better would be fostering a culture where students actively support one another as they struggle through the learning process. Collegiate Academies in New Orleans does a great job of encouraging this culture. When someone is struggling to answer a question, peers (or teachers) "send love," making a subtle hand gesture that means, "I'm supporting you." It's one of the most remarkable and powerful things about a remarkable group of schools.

Lastly, let's not forget that it's not just students whose errors matter. You will of course make a mistake at some point in class, too. That much is inevitable. Most likely, your mistake will be public, with thirty or so students watching you make it. They will note whether you dismiss, deny, minimize, embrace, acknowledge, or even study it. How you communicate and depict mistakes—both students' and your own—in the classroom is very important.

That all said, a classroom culture that respects error, normalizes it, and values learning from it, is one of the characteristics of a high-performing classroom. Culture of Error has four key parts: expecting error, withholding the answer, managing your tell, and praising risk-taking.

Culture of **ERROR**

EXPECT ERROR

Take a moment to examine the language two champion teachers used to communicate to their students their expectations about making mistakes. Consider, first, Bob Zimmerli, who stopped his class after his observation revealed a consistent error (failing to combine like terms) among his students. “I’m so glad you made that mistake,” Bob said to the class, calling them together to reteach. “It’s going to help me to help you.” Message: the mistake is normal, valuable in a way, and a source of insight. Bob is not bothered by the mistakes, but communicates that he expects them and that when they happen, he wants to know about them.

Compare that to something more typical, along the lines of, “Guys, I should not be seeing people with $-2x$ and $+2x$ in the same equation. You know by now to combine like terms.” In that case, students will quickly learn that if they are making mistakes, they are likely to be a source of disappointment to their teacher. As a result, students are likely to respond by trying to conceal their errors. That doesn’t mean they combine like terms any better, just that when they struggle, the teacher won’t find out about it.

By the way, I’m not saying here that you shouldn’t have exacting standards and expect diligence from your students. You should. You don’t have to jump up and down and say, “This mistake is so valuable” every time you get one. What you are looking to do is build a culture that, by seizing opportunities here and there over time, shows that errors are a normal part of learning and perform

their role best when they are out in the open. After a mistake occurs, our message should communicate that we are glad to know about it and, perhaps, that our first assumption is that the misunderstanding is likely to have some cause that is not anybody’s “fault.” It’s easy to assume that confused students weren’t paying attention or don’t value the knowledge, and of course there are cases when that’s true. However, it’s far more productive to assume that students are confused because the material is complex the first time they see it, or because our explanations were somehow imperfect after all, or just because students are like you and me and sometimes need to go over it one more time.



Example Phrases

- “I’m really glad that you made that mistake. It’s going to help me to help you.”
- “Wrong answers are really helpful because we learn from the mistakes we make.”
- “Which of these options do you think is my favorite wrong answer?”
- (After students point out a teacher’s mistake) “Ooh, you all just caught the best mistake I ever made! This is great!”
- “I suspect there’s going to be some disagreement here.”
- After scanning the room to check which answers students picked, say excitedly, “We have a lot of disagreement on this one!”

Next, consider Roxbury Prep math teacher Jason Armstrong, who, in one recent lesson, began communicating his expectations even

Culture of **ERROR**

before he started teaching the problem he was reviewing with his class. Asking to hear the answers his students came up with, he didn't ask for someone who had the "right answer." His words were, "Let's hear people's answers for number 2. I suspect there's going to be some disagreement here, so I might hear a couple different people's answers." He then took four different answers from the class. Each time he asked for more, his words—"Are there any other answers out there?"—implied that the normal state of affairs is to see different answers among smart people doing challenging work. This also serves to teach that math is not just a matter of deciding between a right answer and a single alternative but, sometimes, a matter of deciding which among a wide array of plausible answers makes sense. If the questions are hard, Jason's teaching intimidated, of course people will disagree.

WITHHOLD THE ANSWER

In the same lesson as the one I just described, Jason Armstrong introduced a second problem to his students for discussion, and his choice of language was again striking:

Jason: *Okay, now for the four answers we have here, A, B, C and D, I don't want to start by asking which one you think is right, because I want to focus on the explanations that we have. So let me hear what people think of D. I don't care if you think it's right or wrong; I just want to hear what people think. Eddie, what did you say about it?*

You've probably noticed that Jason's language emphasizes the importance of mathematical

thinking (as opposed to just getting it right). That's valuable. Where many teachers say things like, "I want to focus on the explanation. How you think about this is as important as whether you got it right," what Jason does is different because students don't know whether or not they are discussing a right answer. He has asked them not to discuss how they got the answer they gave—and therefore think is right—but an answer that he chose.



Example Phrases

- "For the four options to this question, I don't want to begin by asking which one you think is right because I want to focus on the explanations that we have."
- "I see several students picked answer choice X and that several others picked answer choice Y. How can I defend my answer whether I picked X or Y?"
- "I heard some snaps and I heard some stomps. College discussion. Be ready to defend your answer."

We often begin reviewing a problem by revealing the right answer and then, suspense alleviated, talking about it. However, as soon as students know the right answer, the nature of their engagement tends to change. They shift to thinking about whether they got it right and how well they did. No matter how much they love the math for the math's sake (or the history or science or literature for its sake), part of them is thinking "Yes! I got it" or "Darn, I knew that" or "Darn, why do I keep messing up?" If Jason had said, "The answer here is B, but I want to look at D," some students would almost assuredly

Culture of **ERROR**

have thought, “Cool, I knew that,” and then stopped listening as closely because in their minds they had gotten it right and didn’t need to listen.

One of the simplest and easiest things you can do to begin building a Culture of Error is to delay revealing whether an answer is right or wrong until after you’ve discussed it, and perhaps an alternative. By withholding the answer until after you’ve discussed the question, you retain a bit of suspense, keep students productively engaged, and avoid the distraction of “Did I get it right?” for a few seconds. This can be very productive, not just as an intellectual exercise, but as a cultural one, in causing students to spend less energy evaluating their work (“I got it right. That’s awesome! I’m awesome” or “I got it wrong. I am such an idiot”) and more energy thinking about the underlying ideas (“I hadn’t thought of doing it that way. I wonder if he’ll get the answer I got”).

The fact that Jason’s question is a multiple-choice question makes it simple to withhold the answer, but it’s also viable to do this with an open-ended question. If you were a history teacher and your question was, “How did the Treaty of Versailles affect Europe in the twenty years after the treaty?” you might put up on the board: Here are some bullet points you might see in an answer; what do you think? This would be more productive, probably, than tipping your hand and saying, “Here are the key points you should have” or “Here’s Sally’s answer. What’d she leave out?” Knowing whether they are looking at right or wrong answers focuses students more on evaluating and less on analyzing.



See It in Action

Watch Jason Armstrong create an environment in which students are free to make and admit mistakes as they seek to understand every possible answer choice and facet of each problem.

MANAGE THE TELL

In poker circles, players have to watch their “tell”—the unintentional signals they give that reveal the status of their hand to savvy opponents. A good player can figure out that an opponent’s habit of rubbing his eyes is a nervous tic revealing a poor hand. Having a tell puts you at such a disadvantage that some elite players wear sunglasses and hooded sweatshirts to ensure they don’t reveal too much.

As teachers, we also have tells—unintentional cues that reveal more than we realize about what we’re thinking, such as whether an answer was right or wrong or whether we valued what a student said. A tell causes us to communicate more than we realize, earlier than we realize it. It compromises our ability to withhold the answer and can often result in our unwittingly communicating disdain for errors.

One of my tells as a teacher was the word “interesting,” offered in a benign but slightly

Culture of **ERROR**

patronizing tone of voice and usually with a “Hmmm” in front of it and a single long blink of both eyes. I would use it, without realizing it, in my English classes when a student gave an interpretation I thought was flimsy. I know this was my tell because one day after a student offered an interpretation of a chapter that I disagreed with, I said, “Hmmm. Interesting.” At which point, a student named Danielle said quite clearly from the back of the classroom, “Uh oh. Try again, Danny!” She knew what “interesting” meant: “Well, that was disappointing.” Like most teachers, I was saying a lot more than I thought I was. My message to Danny was, “You probably should have kept that thought to yourself,” and Danny and all my students knew that. So much for making it safe to be wrong. And of course I was tipping savvy students off in other ways. I could always count on Danielle to step in just when I wanted someone to debunk a poor idea. She was so reliable! In part, it turns out, because she’d been interpreting my tell all semester long and as a result got a steady stream of hints about how to express my own opinion back to me.

One of my most capable colleagues describes a different tell. When students gave an answer in her class, she would write it on the board if it was correct, but wouldn’t bother if it was wrong. Sometimes she would call on a student and turn to the board, marker poised as if to write, only to turn back to the class upon hearing the answer, and recap the marker. Click. Message received.

We all have tells—several, probably—and because they are unintentional, we may send them over and over, communicating a

message to students that undercuts what we might intend to say. Students figure out these tells surprisingly quickly, so it’s important to seek them out in our own teaching and manage them. Of course, we’ll never be perfect. Of course, it’s fine to say, “Interesting” or even to explicitly say, “I think we can do better” or “No, I’m sorry that’s not correct.” You just want to be aware of and intentional about what you communicate and when. Think for a moment about what might be the most common teacher tell: “Does anyone have a different answer?” (When was the last time you said that when someone got it right?) In using this phrase without intentionality, you would first communicate that the answer was wrong and therefore risk disengaging students from thinking as deeply about it as they would if they didn’t know. Second, you would implicitly say to the student who answered, “If that’s all you’ve got, please don’t speak again.”

It’s worth noting that the most persistent tells are usually in response to wrong answers, but we can also have tells for right answers—a big bright face or perhaps the inflection on the word “why” in a statement like, “And can you tell us why you think Wilbur is afraid?” Clearly, it’s not a negative to show appreciation and enthusiasm for a great answer. But it is worth considering whether that enthusiasm sometimes gives away too much, too soon or, if it’s used too often, what its absence communicates. Ideally, we’d all be alert to our tells and manage them—replacing them as often as possible with a consistent and balanced expression of appreciation that’s not quite approval.

Culture of **ERROR**

PRAISE RISK-TAKING

The final point in creating a *Culture of Error* is to praise students for taking risks and facing down the challenge of a difficult subject. Katie McNickle talked about this when she reflected on how she built the Culture of Error in her classroom: “I praise students who are brave enough to ask questions.” It’s especially useful to encourage students to take risks when they’re not sure. A statement such as, “This is a tough question. If you’re struggling with it, that’s a good sign. Now, who’ll be bold and start us off?” reminds students that being a scholar means offering your thoughts when you’re not sure, and sometimes because you’re not sure. You can reinforce that positively by saying, for example, “I love the fact that this is a hard question and so many of you have your hands in the air.” If discussing a particularly difficult passage in a book, try acknowledging the difficulty by saying something like, “This is a question that people have debated for decades. Who even knows if there’s a right answer, but you’re really attacking this.” In a *Culture of Error*, students should feel good about stepping out on a limb, whether they’re right or wrong.



Example Phrases

- “I love the fact that this is a hard question and that I see so many brave hands in the air. Thank you for taking a risk.”
- “People have debated this question for centuries. Who even knows if there’s a right answer. What’s important is that you’re really grappling with it.”
- “This is a tough question. If you’re struggling with it, that’s a good sign. Now, who will be bold and start us off?”
- “Romelle has been brave enough to offer to share his work so that we can revise it because he made a mistake that a lot of us made. So, give him two claps on two. One...two!”

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