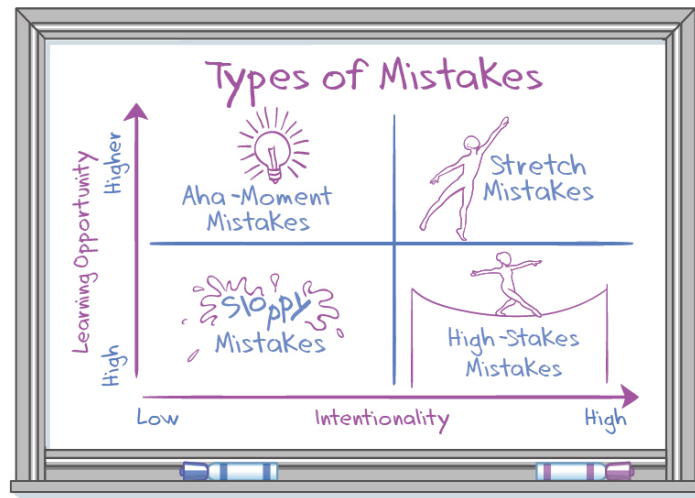


Why Understanding These Four Types of Mistakes Can Help Us Learn

by Eduardo Briceño



© ⓘ Source: Mindset Works (www.mindsetworks.com)



This article was first published in the [Mindset Works newsletter](#).

We can deepen our own and our students' understanding of mistakes, which are not all created equal, and are not always desirable. After all, our ability to manage and learn from mistakes is not fixed. We can improve it. Here are two quotes about mistakes that I like and use, but that can also lead to confusion if we don't further clarify what we mean:

"A life spent making mistakes is not only most honorable but more useful than a life spent doing nothing" – George Bernard Shaw
"It is well to cultivate a friendly feeling towards error, to treat it as a companion inseparable from our lives, as something having a purpose which it truly has." – Maria Montessori

These constructive quotes communicate that mistakes are desirable, which is a positive message and part of what we want students to learn. An appreciation of mistakes helps us overcome our fear of making them, enabling us to take risks. But we also want students to understand what kinds of mistakes are most useful and how to most learn from them.

Types of mistakes

The stretch mistakes

Stretch mistakes happen when we're working to expand our current abilities. We're not trying to make these mistakes in that we're not trying to do something incorrectly, but instead, we're trying to do something that is beyond what we already can do without help, so we're bound to make some errors.

Stretch mistakes are positive. If we never made stretch mistakes, it would mean that we never truly challenged ourselves to learn new knowledge or skills.

Sometimes when we're stuck making and repeating the same stretch mistake, the issue may be that we're mindlessly going through the motions, rather than truly focusing on improving our abilities. Other times the root cause may be that our approach to learning is ineffective and we should try a different strategy to learn that new skill. Or it may be that what we're trying is too far beyond what we already know, and we're not yet ready to master that level of challenge. It is not a problem to test our boundaries and rate of growth, exploring how far and quickly we can progress. But if we feel stuck, one thing we can do is adjust the task, decreasing the level of challenge but still keeping it beyond what we already know. Our zone of proximal development (ZPD) is the zone slightly beyond what we already can do without help, which is a fruitful level of challenge for learning.

We want to make stretch mistakes! We want to do so not by trying to do things incorrectly, but by trying to do things that are challenging. When we make stretch mistakes we want to reflect, identify what we can learn, and then adjust our approach to practice, until we master the new level of ability. Then we want to identify a new area of challenge and continue stretching ourselves.

The aha-moment mistakes

Another positive type of mistake, but one that is harder to strive or plan for, is the aha-moment mistake. This happens when we achieve what we intend to do, but then realize that it was a mistake to do so because of some knowledge we lacked which is now becoming apparent. There are lots of examples of this, such as:

- When we lack the content knowledge: e.g. not finding water, we try to extinguish a fire with alcohol, which we didn't realize is flammable.
- When we find there is more nuance than we realized: e.g. in our painting, we color a sun near the horizon as yellow, and later notice that the sun does not always look yellow.
- When we make incorrect assumptions: e.g. we try to help someone else, thinking that help is always welcome, but we find out that the person did not want help at that moment.
- When we make systematic mistakes: e.g. a fellow educator observes us doing a lesson and later points out, with compelling back-up data, that we tend to call on Caucasian girls much more often than we do other students.
- When we misremember: e.g. we call a friend for their birthday on the right date, but the wrong month.

We can gain more aha moments from mistakes by being reflective. We can ask ourselves What was unexpected? Why did that result occur? What went well and what didn't? Is there anything I could try differently next time? We can also ask people around us for information we may not be aware of, or for ideas for improvement.

The sloppy mistakes

Sloppy mistakes happen when we're doing something we already know how to do, but we do it incorrectly because we lose concentration. We all make sloppy mistakes occasionally because we're human. However, when we make too many of these mistakes, especially on a task that we intend to focus on at the time, it signals an opportunity to enhance our focus, processes, environment, or habits.

Sometimes sloppy mistakes can be turned into aha moments. If we make a mistake because we're not focused on the task at hand, or we're too tired, or something distracted us, upon reflection we can gain aha-moments on how to improve, such as realizing we're better at certain tasks after a good night's sleep, or that if we silence our gadgets or close our doors we can focus better.

The high-stakes mistakes

Sometimes we don't want to make a mistake because it would be catastrophic. For example, in potentially dangerous situations we want to be safe. A big mistake from the person in charge of security in a nuclear power plant could lead to a nuclear disaster. We don't want a school bus driver to take a risk going too fast making a turn, or a student in that bus to blindfold the bus driver. In those cases, we want to put processes in place to minimize high-stakes mistakes. We also want to be clear with students about why we don't want the risk-taking behavior and experimentation in these situations, and how they're different from learning-oriented tasks.

Aside from life-threatening situations, we can sometimes consider performance situations to be high-stakes. For example, if going to a prestigious college is important to someone, taking the SAT could be a high-stakes event because the performance in that assessment has important ramifications. Or if a sports team has trained for years, working very hard to maximize growth, a championship final can be considered a high-stakes event. It is okay to see these events as performance events rather than as learning events, and to seek to minimize mistakes and maximize performance in these events. We're putting our best foot forward, trying to perform as best as we can. How we do in these events gives us information about how effective we have become through our hard work and effort. Of course, it is also ok to embed learning activities in high-stakes events that don't involve safety concerns. We can try something that is beyond what we already know and see how it works, as long as we realize that it may impact our performance (positively or negatively). And of course, we can always learn from these performance events by afterwards reflecting and discussing how things went, what we could do differently next time, and how we could adjust our practice.

In a high-stakes event, if we don't achieve our goal of a high test score or winning the championship, let's reflect on the progress we've made through time, on the approaches that have and haven't helped us grow, and on what we can do to grow more effectively. Then let's go back to spending most of our time practicing, challenging ourselves, and seeking stretch mistakes and learning from those mistakes. On the other hand, if we achieve our target score or win a championship, that's great. Let's celebrate the achievement and how much progress we've made. Then let's ask ourselves the same questions. Let's go back to spending most of our time practicing, challenging ourselves, and growing our abilities.

We're all fortunate to be able to enjoy growth and learning throughout life, no matter what our current level of ability is. Nobody can ever take that source of fulfillment away from us.

Let's be clear

Mistakes are not all created equal, and they are not always desirable. In addition, learning from mistakes is not all automatic. In order to learn from them the most we need to reflect on our errors and extract lessons from them.

If we're more precise in our own understanding of mistakes and in our communication with students, it will increase their understanding, buy-in, and efficacy as learners.

Eduardo Briceño is the Co-Founder & CEO of [Mindset Works](#), which he created with Carol Dweck, Lisa Blackwell and others to help people develop as motivated and effective learners. Carol Dweck is still on the board of directors, but has no financial interest in or income from Mindset Works. The ideas expressed in this article, which [was first published](#) in the Mindset Works newsletter, are entirely Eduardo Briceño's.