

Active Learning Lesson of Graded Learning Method (ALL of GLM=AoG)

A lot of children were having trouble with math at first, because they had all of these gaps accumulated in their learning. And because of that, at some point they got to an arithmetic class and they might have been a little bit shaky on some of the arithmetic, and because of that, they thought they didn't have the arithmetic gene. Or they'd get to a calculus class, and they'd be a little bit shaky on the arithmetic.

It was getting difficult as they got into more advanced math topics. By the time they got to mathematics, they had so many gaps in their knowledge they couldn't engage with it. They thought they didn't have the math gene. But when they were a bit older, they took a little agency and decided to engage. They were able to fill in those gaps and master those concepts, and that reinforced their mindset that it wasn't fixed; that they actually were capable of learning mathematics.

How you would master a lot of things in life: AoG

This is not the way a traditional academic model is structured, the type of academic model that most of us grew up in. In a traditional academic model, we group students together, usually by age, and around middle school, by age and perceived ability, and we shepherd them all together at the same pace. And what typically happens, let's say we're in a middle school math class, and the current unit is on exponents, the teacher will give a lecture on exponents, then we'll go home, do some homework. The next morning, we'll review the homework, then another lecture, homework, lecture, homework. That will continue for about two or three weeks, and then we get a test. On that test, maybe I get a 75 percent, maybe you get a 90 percent, maybe you get a 95 percent. And even though the test identified gaps in our knowledge, I didn't know 25 percent of the material. Even the A student, what was the five percent they didn't know?

Even though we've identified the gaps, the whole class will then move on to the next subject, probably a more advanced subject that's going to build on those gaps. It might be logarithms or negative exponents. And that process continues, and you immediately start to realize how strange this is. I didn't know 25 percent of the more foundational thing, and now I'm being pushed to the more advanced thing. And this will continue for months, years, all the way until at some point, I might be in an algebra class or trigonometry class and I hit a wall. And it's not because algebra is fundamentally difficult or because the student isn't bright. It's because I'm seeing an equation and they're dealing with exponents and that 30 percent that I didn't know is showing up. And then I start to disengage.

If your reaction is the reaction you typically have in education, or that a lot of folks have, you might say, maybe we had a bad contractor, or maybe we needed better inspection or more frequent inspection. But what was really broken was the process. We were artificially constraining how long we had to something, pretty much ensuring a variable outcome, and we took the trouble of inspecting and identifying those gaps, but then we built right on top of it.

So the AoG is to do the exact opposite. Instead of artificially constraining, fixing when and how long you work on something, pretty much ensuring that variable outcome, the A, B, C, D, F ? do it the other way around. What's variable is when and how long a student actually has to work on something, and what's fixed is that they actually master the material.

It's important to realize that not only will this make the student learn their exponents better, but it'll reinforce the right mindset muscles. It makes them realize that if you got 20 percent wrong on something, it doesn't mean that you have a C branded in your DNA somehow. It means that you should just keep working on it. You should have grit; you should have perseverance; you should take agency over your learning.

Now, a lot of skeptics might say, well, hey, this is all great, philosophically, this whole AoG and its connection to mindset, students taking agency over their learning. It makes a lot of sense, but it seems impractical. To actually do it, every student would be on their own track. It would have to be personalized, you'd have to have private tutors and worksheets for every student.

But this is not just ideal theory. When that happens, all sorts of neat things happen. One, the students can actually master the concepts, but they're also building their growth mindset, they're building grit, perseverance, they're taking agency over their learning. And all sorts of beautiful things can start to happen in the actual classroom. Instead of it being focused on the lecture, students can interact with each other. They can get deeper mastery over the material. They can go into simulation of prediction and experiment, debate dialogue.

But what if that estimate is just based on your own experience in a non-mastery framework, your own experience with yourself or observing your peers, where you're being pushed at this set pace through classes, accumulating all these gaps? Even when you got that 95 percent, what was that five percent you missed? And it keeps accumulating? you get to an advanced class, all of a sudden you hit a wall and say, "I'm not meant to be a cancer researcher; not meant to be a physicist; not meant to be a mathematician." I suspect that that actually is the case, but if you were allowed to be operating in the AoG framework, if you were allowed to really take agency over your learning, and when you get something wrong if you embrace it, if you view that failure as a moment of learning, that number of the percent that could really master calculus or understand organic chemistry, is actually a lot closer to 100 percent.

So as a society, we have a question: All this new productivity is happening because of this technology, but who participates in it? Is it just going to be that very top of the pyramid, in which case, what does everyone else do? How do they operate? Or do we do something that's more aspirational? Do we actually attempt to invert the pyramid, where you have a large creative class, where almost everyone can participate as an entrepreneur, an artist, as a researcher?

And I don't think that this is utopian. I really think that this is all based on the idea that if we let people tap into their potential by AoG concepts, by being able to exercise agency over their learning, that they can get there. And when you think of it as just a citizen of the world, it's pretty exciting. I mean, think about the type of equity we can have, and the rate at which civilization could even progress. And so, I'm pretty optimistic about it. I think it's going to be a pretty exciting time to be alive.