

## In the Classroom 105

# Giving Students Opportunities to Practice for Success

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**Stan Skrabut:** Well, thanks ever so much for taking time to listen to this podcast. It certainly means a lot. I know you'd be doing other things, but you're hanging out with me anyways, and I really appreciate it. Tell you what, I've been looking at my numbers and you guys are making me feel pretty good. I appreciate the support. This week, we're going to talk about practice, practice, practice, practice. Mastering course content does not happen magically. It requires work. Students need opportunities to practice in order to satisfy your goals or your objectives for your course.

This week, we're going to look at ways that you can have students practice in order to increase core success. In the article, *The Importance of Practice and Our Reluctance to do it*, by Jennifer Long, she shared some research by Malcolm Gladwell and Josh Kaufman. They noted that to be an expert, one needs 10,000 hours of practice, or to go from knowing nothing to being at least pretty good, you need 20 hours of practice spread over a month. Well, 20 hours is certainly far from 10,000 hours but if students are not practicing at all, they really stay in that not knowing nothing or just being barely good. We need to get them to practice.

Based on what they shared, there's some things that were important that I took away. One, it takes a lot of hours to become an expert. Two, it takes time to develop skill and knowledge and three practice needs to be spread over time. That cramming is not necessarily good, that you need to practice deliberately over time. I just finished reading *Small Teaching* by James Lang. He devoted an entire chapter to the concept of practicing. He thought it was that important and it certainly generated a lot of ideas, but also it generated a lot of memories because when I was in the Air Force practicing was central to everything we did as we improved our knowledge and skills.

I, like Dr. Lang, believe more can be done in our classrooms to help students become more successful and this is through practice. Why should you create opportunities for students to practice? We can pack our courses full of content but if students do not get a chance to get their hands dirty, to work with this content, they're not going to grasp the concepts as well. Basically, you can't teach skiing through PowerPoint. No matter how skilled a lecturer you are, one has to hit the slopes. My thoughts on the importance of practice are deeply rooted in my understanding of instructional systems design.

A methodology that I picked up while I was in the Air Force and central to this is something that I've talked about over and over and over again, is called backward design. I discussed this in-depth in Episode 41. I've also mentioned it on many other

occasions. In backward design, you first want to decide what you want your students to know or do because of your class. In other words, you want to create goals and objectives. Based on what I've seen in higher ed, this is an area that can be improved. Now, many instructors are required, based on their institution, to have overall goals for their courses, but not many of them actually break this down into objectives for the specific class.

Then based on the objectives, you're going to create assessments. The assessments should reflect what's in your objective. Again, this is an area that can be tightened up in most college classrooms that I've seen. Next, and the focus of this episode is the importance of creating activities that allow students to practice so they can successfully complete the assessments thus meeting the objectives. These activities should be formative in nature, where assessments are summative. Practice is important.

Think about your own performance. Think about classes that you have taught, which ones were better? The ones that you did cold, that you didn't practice or the ones that you have at least practice. It could be that you're teaching the same section multiple times during the term. Probably the first class that you teach during the day is a little rough but the next class, you've learned from what you've previously done, and that one becomes better. Then if you have to teach the exact same class a third time a day, that's probably even better than the previous two and that's what practice can do.

If you have run through your class at least once, odds are that you're going to perform better on subsequent classes. The same applies to your students. Many of the examples I have relate to skills-based concepts. For example, once upon a time I took guitar lesson. During the lesson I grasped the concept but since I didn't practice, in the end, I've really never learned how to play a guitar. When I taught martial arts I would demonstrate different techniques to my students. However, they did not really understand the technique until they practiced it over and over and over again.

It wasn't that I just taught them once they grasp the concept. They had to get their hands dirty and go over it. Acquiring knowledge works the same way. You can't expect students to know your content when only exposed to it once. They have to get their hands dirty. They have to tie what you are teaching to them to information they already have. They have to activate prior knowledge. They then have to strengthen those connections in their brains. In other words, they have to actively work with the content and not just passively ingest it. Practice is not only for the development of skills, but also the maintenance of skills.

Things that you teach in the first week of class, students need to see this throughout the term. Just like all the contents just going to keep building on each other, but you're going to tie it back to concepts they learned early on in the class. How do we do this? How do we provide opportunities to practice that you have such busy schedules and you're trying to provide all this information? How do we get students to practice and tie it to this prior instruction? I'm going to share some thoughts around this.

First of all, is active learning. Less lecture, more active learning will help students practice the material. Active learning is exactly what it sounds like. Students actively participating in the course to construct their own knowledge. Different ways that you can do this is you can present a problem, show students how to do it, and then have them work out the problems. You can pose a question. Throw a question out there, have students work on it individually, have them work on it as teams, that's another strategy that you can use or any other type of reflective activity. You want them to constantly be thinking about the material, and maybe even thinking about the material from different angles.

The cool thing about this active learning is you can pose questions anytime during the class. If you're doing it at the beginning of class, you can ask students to reflect on content that they had from previous classes. You can ask them just to summarize what you had gone over in a previous class. That way, they have to think about it. You can have them do this as a written exercise, have them write it down. This makes the brain excited. It's a problem it needs to solve and the brain loves working on those kind of things.

Just getting a lecture is passive learning and the brain is just not as excited about that. If you constantly ask questions, the brain is trying to answer it, it wants to answer it correctly. It may not answer it correctly, which is why you provide some feedback but if you ask questions at the middle and end of class, you can have them reflect on material that has happened, that you taught during the current class. You may have provided some concepts, then give them an opportunity to work on this. During these practice sessions, you have an opportunity to provide feedback.

It could be one-on-one, or you can do it as the entire class. That you see certain trends, you may want to stop the class and provide that feedback and let them get back to it. This allows you to clarify any misconceptions that you see that's going on in your class. Students can practice on their own, or they can work on as pairs or small groups. Naturally, the content should focus on the class objectives. Everything is tied back to those objectives. Like I mentioned, from backward design. It starts with the objective and then you build the assessments, and then you have the activities so they can practice this.

Another way that you can work at this is deliberate practice. When I'm talking about practice, I'm not talking about mindless drill and kill type exercises or mindless repetition of a task. That is a great way to lock in bad skills or misconceptions. Instead, I'm focused on deliberate practice. Deliberate is focused and intentional practice with a specific skill. This may require breaking down a larger tasks into smaller tasks.

For example, if in the end, you want students to write this research paper, you may want them to practice how to write a hypothesis or a research question. Have them write multiple research questions and provide deliberate feedback on those different questions. Or paraphrasing, that you give them a series of articles and have them paraphrase from those different articles and citing it properly. It could be that you're writing annotated bibliography entries, and how to do that. They can write one of

these entries type it up, you can go around, look at them, provide feedback, and overall feedback for your class.

This can apply to all kinds of other skills related to writing a research paper. When I was at the Air Force Academy prep school, they had a special way of deliberate practice. I think I've shared this before, but I'll mention it again. I found this extremely helpful. Math class, for example, we had four rows of seven seats, and when the instructor came in, first of all, we'd probably have a quiz. We had quizzes almost every other day. Also, the instructor would ask the first seven students to go to the boards and the instructor would assign each one of us that was at the boards, a question to work out. We would be working our question and those that were sitting down also had to work all the seven questions that were on the board. Then the instructor would basically go to each one of us that was at the board, and have us talk about, explain how we solved the problem, what strategies we used. We would get concurrence from the rest of the class. If we were wrong, then we had an opportunity to regroup and try to get the correct answer or another student would help clarify.

If everyone was confused, then the instructor would jump in. Then we would systematically go through all seven students that were on the board in the same manner. Then the next seven would go to the board. During class we had 28 problems that we would solve or basically actually 22, because we didn't solve the ones in the set that were up there. 22 opportunities to work out problems. This was a lot of practice and the instructor did not do a lot of teaching in those classes. It was up to us to basically provide most of the instruction unless we were all stuck and confused. Very powerful way of doing that.

Also, tied to this deliberate practice, it's important that the deliberate practice builds upon previous knowledge and that there is immediate or timely feedback, descriptive feedback to get you on track. You did not, you weren't stuck with misconceptions. The key to all this is the quality of the practice, more than the number of repetitions. Quality over quantity. That you wanted to really focus on specific skills and try to perfect those. We talked about active learning, deliberate practice. The other one that I want to talk about is quizzing. I talk about mastery quizzes and test pools in episodes 18 and 40, and they are tremendously powerful tools for providing opportunities for practice.

Ideally, the quizzes you create should mirror the type of questions that you're going to be using on exams. When I was in the Air Force, we used quizzes extensively to help develop knowledge among our airmen. We had massive test banks that we would go through over and over again. Which reflected all the objectives that we wanted these airmen to know. You can set up these same large test banks so that students can have multiple attempts. That you can randomly generate, say 25 question quizzes, over and over and over again, and have students take them over and over and over again. As you move through the course, your weekly quizzes can be cumulative. In other words, you can add questions from previous weeks.

Perhaps you have 80% that are new questions that are related to the week you're in and 20% come randomly out of the previous test banks. This helps maintain that

knowledge or skills that you want them to maintain. If I was setting up one of these quizzes, I would provide credit only when a student aces the quiz. This is formative in nature. I want them to continuously go through the quiz banks and I'll only give them credit when they master the quiz. You may also want to provide quizzes at the beginning of class to assess previous content. You may, as happened at when I was at the Air Force Academy prep school, we'd walk in the door. First thing we would get is our quiz.

We'd have a time limit, 10 minutes to take the quiz, knock the quiz out, turn it in and then go through the lesson. This is something that you may want to do. Don't make it extremely long. Don't make it very arduous. Especially in terms of grading, something that you could do pretty quickly, but it gives you an idea of where your students stand and it gives them an idea and an opportunity to practice, tying things back to prior knowledge and strengthening those connections in their brain. You can also create a participatory quiz as a pre-test to the class.

The class, you may have asked them to read on some content or maybe not even done that. You just want to see what they know and you can use it as a pre-test. Now naturally, you probably don't want to grade this type of quiz, but just give them participatory credit. What it'll do is it'll activate their prior learning. The fact that once again, you're getting the brain excited and they see this content and they want to answer it correctly. It's their brain starts firing. Based on the results of the quiz, then you can start guiding roll out of the class content throughout your course.

You can have immediate feedback to these quizzes that you could see, and with that information, you can kind of guide the lecture and really clarify areas where students have misconceptions, but it also lets students know what to expect for that particular class. They have kind of an outline in their mind on what's coming up and they know what they were weak on and what they need to improve on. They can start working on that.

Those are three major ideas on how to build this idea of practice into your class. I'm going to give you a bunch more based on episodes that I've already recorded. Across the past 100 plus episodes, I've shared out different ways that you could have students practice that I encourage you to check out. ITC 13, this is where I talked about simulations. LabStar is an example of using virtual labs to practice skills that you would practice in a science lab. Being able to use simulations. In episode ITC 16, I talked about using games and game application in the classroom. Another great way to practice, but just a fun, playful way of doing that, but you can have serious games.

It gives them a chance to get their hands dirty. I just talked about episodes, ITC 18 and 40, which focuses on quizzes for mastery learning. These differ from formative exams or summative exams, I'm sorry, summative exams using quizzing helps to practice what will be on those exams. In ITC 42, I talked about how to practice learning vocabulary that's central to the discipline. Ways that you can have students practice the vocabulary because you want to create that foundational knowledge for your discipline. ITC 43 shares ideas for using concept maps to help practice relationships in a discipline.

Because everything builds on each other, you can build a concept map and just ask students to document a concept map on a specific part of the course, has them practice pulling that information out of their brain. I talked about raft assignments, so roll audience format and topic assignments that can provide various ways to help students practice different concepts. That's in ICC 49. Project based learning is another strategy for allowing students to practice what you are teaching them in class. You can learn more about that in ITC 56.

ITC 81 shared a number of different strategies for information recall. A lot of this is really focused on the idea of practice. In episodes, ITC 84, 89 really focuses on activating prior knowledge. I talked about this active teaching strategy I learned at the Air Force Academy prep school. I kind of summarize it here, but I talked about that strategy in episode 89. Finally, check out Lit Trips, because this is another way that the students can get their hands dirty with your content and allows them just to practice pulling ideas together.

Different ways of getting students to practice. Practice, practice, practice. It's essential. You can't just be one and done. You can't just give them the content, expect them to get it. Students, majority of students are not good at practicing on their own, so providing those opportunities in the classroom is really useful because you can provide that feedback right there to make sure that they are understanding the concepts correctly. I think it's good stuff. I think it's important. I think we need to figure out how to weave this into the classroom more. Well, with that, here is a quick plug for my book, which will be a focus of next week's topic.