In the Classroom 136
Using Active Learning Strategies in the Classroom

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Stan Skrabut: Well, thanks ever so much for taking time to listen to this podcast. I certainly do appreciate it. I know you could be doing other things, perhaps you are, but you're still hanging out with me. I really, really do appreciate it.

Over a number of episodes, I have been beating around the bush and I've been talking about active learning strategies. I've been even sharing active learning strategies, but we really haven't talked about active learning. Well, in my mind, learning is supposed to be messy. It's supposed to be challenging and full of conversation. However, in most classrooms dominated by lectures, this is not the case.

Students will not learn as much in a passive learning setting as they will in an active one. If you want students to improve, we need to stop spoon-feeding them information. It's more important that they wrestle with the content, both in and out of the classroom.

This week we're going to take a deeper dive into active learning. As I said, across the podcast, I have been sharing and referencing to lots of different active learning, but I didn't really explain myself. Besides, this concept of active learning, this has been going around since the 1860s. I went into Google Scholar and I just started doing a search for active learning. I found references to active learning back into the 1860s.

I suspect that it's not used in classrooms more because it's not convenient for the instructors. It's a lot easier just to spew out information as those students were sponges and are soaking in all this information. In most cases, students are not retaining that information because they have not put it to use. They haven't been required to work with that information. Research has demonstrated over and over again that just spewing out information and hoping students suck it up, they proved this is not the best way to learn. We learn better when confronted with opportunities to work with concepts.

Let's take a closer look at active learning. Active learning refers to instructional methods that engage students beyond listening and passive note-taking. Active learning promotes skill development, higher-order thinking. With active learning students are constructing knowledge. They do this individually as well as in small groups.

The nice thing about it is you're really not introducing a lot of crazy new technologies or having to do a whole lot of hard work in creating activities. The activities are very simple. There's nothing magical about active learning activities other than the results.

They focus on four basic activities that we're already using in the classroom, talking and listening. We're just focused on getting students to really actively listen and respond to that listening, and make connections to what they're learning.

The same with writing. We're already doing this in the classroom. We're using writing for analysis to make those connections. Reading, we're just getting students to read at a deeper level, and then finally reflecting. These are the basics. What we are doing, verbally talking and listening, that we're writing and reading, and reflecting. Just how we are engaging those, that's where it makes the day difference.

According to research, there was an analysis of 225 studies. Researchers found that students enrolled in STEM courses that included active learning earned higher exam scores than those in lecture courses with no active learning. Also, the students in classes with no active learning were more likely to fail exams. There is many, many other studies that are coming to the same conclusions, that using active learning in the classroom, we're just going to improve what we're doing. It just makes sense that we put these into practice.

Fortunately, you have a lot of different activities that you can choose from. Kevin Yee has put together a document of close to 300 active learning activities. It is a creative commons document. I have gone ahead and put it into the show notes. You can find it there. 300 activities, they're organized into 20 different categories. Some of these categories include activities to be used during lectures. I'm not saying give up lectures. I'm just saying we just need to do it a little different, using them for quizzes, for group work, student presentations, all ways.

I'm going to touch upon some of these categories, share some of these activities. As I said, there is a link to the full list in the show notes, so I encourage you to go check it out. Also, in the show notes, I've provided a lot of other articles that speak about active learning, so check them out. Since we are already doing a lot of lectures in the classroom, let's start with lectures.

Ideally, you want to use lectures sparingly in your classroom. You can use them to introduce a topic. You can use it to clarify topics and summarize a topic, but really, you should not be using lecture for the entire class period. That is passive learning. You're expecting students to suck up that information and that's just not how it works.

Here is some strategies that you can use during and follow these short brief lecture periods.

The first one is just having a pause. A purposeful pause, where students can take a break for two to three minutes and allow them to basically catch up, allow them to update their notes, allow them to compare their class notes with fellow students. That way they have a chance to fill in the gaps and develop questions that they can get back to you. Having just a purposeful pause.

Another way that you can start off a lecture period is with a word cloud. Have students guess what the topic is, based on a word cloud. In order to do this, you're

going to use a word cloud generator like Wordle or Tagxedo or Tagul, in order to--You'll take content, dump it into that program and it'll build the word cloud. Use that as a way for students to anticipate what is going to be talked about in the classroom.

You can also do the same thing with a picture, that you put a picture up there to provoke conversation or emotion or it could be a cartoon or something like that, but something related to your topic. What is it? Something that may not be easily guessed, but something that could generate that conversation.

Another strategy is Socratic questioning. I talked about this in ITC 108, so go check that out. Basically, the instructor replaces the lecture by asking questions. Always asking the next question in a way that guides the conversation towards the learning outcome. You can put a spin on this, where students write questions as part of their homework and leads the class exercise. That's a different way of doing it.

Another strategy is to provide empty outlines. Distribute a partially complete outline of the lecture and ask students to fill it in. Basically a workbook. You can use it at different periods of the class.

Concept maps are also powerful tools for this. I talked about concept maps in episode ITC 43, so go to check those out. These are opportunities for students to make these connections and basically recall information.

Having classroom polling in your class one way or another. There's countless different ways that you can do this polling. Could be a simple informal raise your hands. You can use it to test the temperature of the class, to test recall of information, many different ways. You can have students stand up and sit down, based on true and false questions. Lots of different tools. You can have clickers. There's web-based clickers, Poll Everywhere, response cards, clickers. You can have them just put fingers on their chest to indicate what their answer is.

Zoom, you have polling in zoom, there is Google Forms. There is all kinds of ways that we can poll students to test knowledge or to get a feel of what they're thinking, dealing with controversial subjects. Playing games, having a tournament, dividing the class into groups, and doing a competition, maybe for a practice test. Let them study together and then give that quiz. You can tally points and whoever is the winner, but it allows them, maybe throughout the whole term that they're with these groups and aiming for that big prize at the end.

Those are some lecture strategies that you can check out. There is also basic student strategies. There is many different ways that you can have students actively engage with content, either as individuals or as groups. You can also escalate this. You can have students capture their thoughts independently and then pair them up, compare ideas, and then move them to groups to further explore those ideas. A lot of these strategies go back to information recall strategies that I discussed in episode ITC 81.

Here are some ideas. The first is a mind dump. Have students write for five minutes based on what they read the night before and you'll collect these papers. At the end

of the term, you basically return all of the students' mind dump. That way they can do that as a study aid for the final exam or you can do it in preparation for a midterm. Lots of different ways that you can do this.

Having a backchannel. In the backchannel that you can set up tools like Slack or Twitter or Discord. A lot of different tools that are available to use a chatroom-style conversation, that's happening alongside when this instructor is presenting. The students can ask questions, make comments, share relevant resources. The instructor, then periodically reviews those conversations and weaves the answers back into the presentation. Having a backchannel, really a powerful tool.

Another common one is Muddiest Point. It's like doing a one-minute paper, but this time, you're asking for something that is most confusing to the student. Normally, you do this at the end of the class and collect them. In that way, when you start your class, you can address those Muddiest Points.

I advocate for the use of a content or a learning management system, in order to help use it for clarification. I'll beep up a learning management system based on areas where students are confused. Having students captured focus lists, so basically, they're brainstorming a topic and listing all the possible ideas that they can on that particular topic. You can make it a little more challenging by restricting students to a specific letter. If you want, you can weave this idea into this idea of google the alphabet. Maybe they use digital tools in order to assist. I've talked about that in a previous episode.

Students are tied to their digital devices. One of the things that you can do in order to get them to focus on your class and be more engaged in your class is design, say, a two-minute break in the middle of class for students to pull out their electronic device, check their email, respond to a couple of text messages, but you do it with the understanding that they will secure their devices away unless they're used for an active part in the class. It's just something that they get a break and then you can get them back on task.

Another strategy is how does what they're learning at this time applied to their major. Something to do towards the end of a class every once in a while is, ask the question, "How does what we are learning at this moment in time, apply to your major?" Have them write a short article explaining how that works.

Having a confidence survey, so simple questions that you're asking them how confident are students when it comes to a specific skill. You can continuously ask this throughout the course. Ideally, certain skills, they'll become a lot more confident in, and new skills they'll be less confident but they'll continue to build confidence. You can keep an eye on that survey and find out how students are doing.

Another strategy is having students provide feedback to you on the homework assignments that they are doing, and the exams, to ask them if there are sufficient learning tools, if they're fair, if they're useful, and what the quality is, so you have a way to go back and improve those particular products for your students in the same way.

Another strategy for testing knowledge is one that's very popular, it's called think-pair-share. This is where students come up with answers maybe to a question, they mull it over in their mind, then they pair up with somebody and work on the question, and then they address the larger class. Another strategy that you can use.

Peer reviews. Peer reviews are another great strategy. When working out writing assignments-- This is actually a strategy I'm using with my grad students right now, and they're going to be exchanging their drafts with fellow students. If I have a questionnaire I want them to answer, so they'll answer that questionnaire, and they'll get that feedback back to the original writer. That'll help them build their program plans a little better.

Another student-oriented activity is called Get One, Give One. A student basically folds a piece of paper in half and on one side writes, Give One and on the other side, Get One. On the Give One side, they write four insights from the material from today. You're teaching a topic, what are four insights that they wrote down? Have them stand up, find a partner, each student shares one idea from their Give side and writes down one idea from the Get One side of the paper. They find a new partner and they do the same process until they have a new set of ideas to work with. They have their original ideas plus a new set of ideas. Those are some ideas for student action.

The last section that I want to share, a couple of ideas real quick, is dealing with student presentations. Here are some ways that you can increase engagement and levels of learning while using student presentations.

The first one is a Fishbowl. I've heard this term used quite often. Matter of fact, I'm hoping to do a future episode on the idea of Fishbowl but basically, a student unpacks her ideas and thoughts on a topic in front of others, who take notes and write responses. They don't necessarily ask any questions. They give basically, feedback back to the student or they provide input back to the students so they can help develop their ideas.

Another quick strategy that you can use is impromptu speeches. This is where the students generate keywords, put them into a hat, and then self choose presenters to speak 30 seconds on each topic, and so they pull them out.

Finally-- And this is only a small section of all those 300 techniques that I just happened to pull out, something that jumped at me, is to create portable whiteboards. Matter of fact, you can have students do this or you can do it for the students. You may need to get some money from your department but take a challah board or a whiteboard material that you can find at a Home Depot or Lowe's and have it cut up into small pieces, maybe 1 foot by 18 inches, something like that.

You can then use these boards as whiteboards. You can gather responses from students in classes, having them hold up the whiteboard. They can use this when they are doing these impromptu presentations. They can write down their thoughts, have them available or use it as a visual aid or just during discussions. This could be a powerful tool to capture ideas within a group or a team.

Those are just interactive ideas, active learning strategies that you can weave into your classroom. I shared 21 of them with you that you could easily weave into your class. I would encourage you to test out these techniques along with-- There's 300 other techniques that you can find through the show notes. Let me know how it works out for you and how it works out for your students. This is a way to get them to think about their learning, get to do information recall continuously, and that will strengthen what they know about a topic.

That's what I have today on active learning. Before I let you go, here's a quick plug for my book.