In the Classroom 82
How to Use Bloom's Taxonomy in the Classroom

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Stan Skrabut: Well, thanks ever so much for taking time out of your schedule to come listen to this podcast. As I've recognized, I know you could be doing other things, possibly are doing other things, but you're still hanging out with me and I really appreciate it. Beautiful day here in Western New York. What are we talking about today? I noticed over the past 81 episodes, I have mentioned Bloom's Taxonomy quite a bit. Matter of fact, I've mentioned it at least on 10 different episodes. Perhaps now is a good time to take a deeper look at Bloom's Taxonomy and why it's so important for your classroom.

In this episode, we're going to point out the original Bloom's Taxonomy that started back in the 1950s, as well as the revised Taxonomy, and really, we're going to focus on the revised Taxonomy.

First of all, what is Bloom's Taxonomy? Bloom's Taxonomy is a model used for building your learning objectives that are based on levels of complexity and specificity. As I said, it was developed in the 1950s. It's named after Benjamin Bloom, who chaired the committee of educators that devised the taxonomy. I believe those educators were a bunch of grad students that were working on it, but I'm not entirely 100% certain on that.

Bloom's Taxonomy, the original taxonomy focused on six levels, and those six levels included Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. You can imagine as it's being represented, it's typically shaped as a pyramid with the bottom level being the Knowledge, and working it's way up to the top level, Evaluation. Basically, on a spectrum of thinking skills, the lower-order thinking skills starts with Knowledge base levels and works its way to the higher-order thinking skills. The lower-order thinking skills, the acronym is LOTS, L-O-T-S, where the higher-order thinking skills, the acronym is HOTS, H-O-T-S.

This Bloom's Taxonomy was later revised in 2001 by David Krathwohl and Lorin Anderson. They transformed it where it was basically a set of nouns to verbs, and they made it just a little more active. They also switched out some things and changed some things, and I'll tell you what the new Revised Bloom's Taxonomy is. The first level is Remember, moving to Understand, Apply, Analyze, Evaluate, and finally Create. Create replaced Synthesize.

Remember that the original was dealt with Knowledge and the new one basically wants you to remember things, wants you to remember that knowledge information. Comprehension, Understand are tied together. Application and Apply or Analysis and Analyze, they're tied together, and then they switch it. In the original Bloom's, it

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was Synthesize or Synthesis, and now it's Evaluate. The last one in the original was Evaluation, now it's Create. They made those modifications.

The key to using Bloom's Taxonomy in building out your instruction is to use it for the appropriate level for the student's knowledge and skill level. You don't want to make it too complicated or too basic. When you're applying this, you can start at the appropriate level based on where the student is at, which I think is useful. At very low undergraduate level courses, you may be focusing on Remembering and Understanding and Applying, but at, say, graduate-level courses, you're really focusing on Analyzing, Evaluating, and Creating. You're pushing into those higher levels because you expect them to already have that foundational knowledge.

Why would you want to use Bloom's Taxonomy? Bloom's Taxonomy is really about building instruction for designing your learning objectives, creating your assessments, and creating those activities. This is very much in line with backward design methodology for developing instruction, and I talked about backward design in Episode 41. In Episode 69, I also focused on writing course goals, outcomes, and objectives. That's really at the core, is that if you can get these objectives right, everything else starts to fall into place. I can't stress enough on the importance of writing good measurable objectives for your course.

Well, let's take a little look, a little deeper look at Bloom's Taxonomy, because I just rattled off what things were, but we're going to make sure that we're looking at the Revised Bloom's Taxonomy. That's where I really want to focus on. The first level is Remember. Basically, you want students to pull information from their long-term memory. It's a matter of getting it into long-term memory and then pulling it right back out. When you write your objectives, you want to use an action verb to put it into motion. Some of the words, some of the verbs that are useful for Remember could be list, recite, outline, define, recall, identify, recognize. Those are all appropriate examples of verbs, and there's so many more verbs. In the show notes, I've added some lists or links to lists that you can go check out that will help you operationalize these different levels, but remembering is really about retrieval of information, so appropriate verbs that would talk about this retrieval of information.

The next one is Understand. With understanding, students can determine the meaning of instructional messages, whether oral, written, or graphical information. The action verbs that you want to put into play is they should be able to describe, explain. They can paraphrase information, restate it, summarize it, give contrast, interpret, discuss. All those are appropriate verbs for Understand. Once again, there's many other types of verb.

If you're looking for students to be able to apply the knowledge or skills, what you want them to do is carry out or use a procedure in a given situation. Appropriate verbs, thinking about math that they can calculate, they can solve equations. Other appropriate verbs are predict, apply, illustrate, demonstrate. They can demonstrate something. They can model, perform, present, this is all in the application mode. When you're putting together assignments or assessments, these are some of the verbs that you would want to keep in mind.

The next level is Analyze, that students can break down materials into their parts and detect how the parts relate to each other and the overall structure. I visualized concept maps, being able to put together diagrams, and that's one of the action verbs that you would want to use. Other verbs include classify, categorize, illustrate, criticize, simplify, all those are appropriate verbs that you could use.

The next level is Evaluate, that students can make a judgment based on criteria and standards. Appropriate action verbs for that is be able to choose, relate, determine, defend, judge, justify, support, evaluate. All those come into play when you're looking at evaluation or being able to evaluate or evaluating.

Then finally, the highest level is Create. Students can put together information or knowledge or content together to make original product, something that they haven't created before or maybe even no one had created. Really, you're looking for them to be able to design something, build something, invent, derive, develop, modify. Those are different words associated with Create.

There's lots of different opportunities in the classroom for your instruction on things that you would want students maybe to do. Build a timeline, for example, if you're dealing with history, or write an essay, or solve these math problems, or execute this experiment. Lots of different ways that we can put that into motion.

Well, Krathwohl also took this New Revised Taxonomy and basically even built upon that with four knowledge dimensions that are associated with these appropriate levels of the taxonomy. We have Remember, Understand, Apply, Analyze, Evaluate, and Create, but there's also four knowledge dimensions. This gives an array of 20 different possibilities in this revised taxonomy table. Those additional dimensions, those knowledge dimensions, one is factual knowledge.

If you want them to remember, one part of it is factual knowledge. Very specific information. This would be terminology, specific details and elements, but you also have conceptual knowledge. This is models and structures, classifications, categories, how they would piece these things together. Procedural knowledge is specific skills and algorithms that are dependent on the subject and different techniques that somebody would use to maybe solve a problem. That would fit in that.

Then finally, the metacognitive knowledge is strategic knowledge, basically, that learning how to learn information that would be appropriate to each level. For Understand, you would have factual knowledge, conceptual knowledge, procedural knowledge, metacognitive knowledge, and figuring out what type of objective to write in there. You should have plenty of opportunities for building out different objectives to measure what you want students to be able to know or do in your classroom. If you fill out this table, you'll be able to build a lot of different objectives and see where there's gaps and what you want students to know or do in your classroom.

So this can be a very powerful tool as you build it out. I've included links to some of these tools to help you better design your objectives, better design the instruction that you want to use in your classroom. Well, let's talk about actually putting Bloom's

Taxonomy into work and this will help you certainly build a stronger course. First place to start is with your course goals, outcomes, and objectives. If you remember from Episode 69, goals, outcomes, and objectives are the foundation of your plan, the better that you craft these, the better your course will be. They determine what will occur in the course and also what will not be covered in the course.

The goals and outcomes are really focused on broad behavior. What will they be learning and what will they have learned and how well will they have learned it? Now, the objectives are more specific than the course goals and learning objectives. They basically operationalize the goals. They're behavior in nature, they are from a student's perspective, so a student will be able to do X. Important thing about the objectives, they're measurable. A student must be able to demonstrate what they know or can do in the classroom. This is where I see Bloom's Taxonomy really being used, is in building these learning objectives.

When you build them, I recommend putting them on a spreadsheet. Overall, you're going to list your overall goals and then you are going to, in another column, list your learning objectives for each of those goals. It'll be kind of an outline view. You'll have your overall learning goals and then those objectives that are going to meet those goals. How are you going to operationalize those course goals? From there, you're going to indicate what level, not only write the objective, but indicate what level they are in terms of Bloom's Taxonomy. So, is it remembering? Is it applying? Understanding? What level are you trying to get at in each of these?

Additionally, if you wanted to, which takes us to a whole new level is you can add Krathwohl's learning dimension or Knowledge Dimensions and add that to it. You can really dial this in and be able to identify gaps that you have in your instruction. This will help you determine if your objectives are written at the appropriate level and it will also make sure if you're adequately covering your topic.

Once you have your learning objectives written down, the next thing you want to do is put them in the right sequence. Now put them in a logical order that they scaffold the learning throughout your course, and walk a student bit by bit through your course, building upon previous knowledge and previous skills. So, you want to put that together.

Once you have your objectives written, you have them in the sequence that you want, now it's a matter of determining what activities and assessments that you're going to use. First, start with the assessments. How are you going to measure that learning has taken place? How are you going to measure what they know or can do? You write those objectives. Now, very simply, your learning objectives should guide the writing of the assessment. If the objective is to list the different parts of a flower, well, then your assessment question is list the different parts of a flower. It's that simple, right?

We try to, in some cases, trick the students. Why are we tricking them? Their learning objectives is, this was what I want you to know, and so that is going to be the question I'm going to ask you. Show me you know this. It is that easy. We make it too hard. We try to, "Oh, I got to make the question hard for the students." Why?

All you want them to do is, can they meet the objective or not? If you want them to meet a different objective, write that objective, all right? It's that easy. The activities should give them an opportunity to practice for the assessment.

For your practice activities, if on the assessment, you want them to list the different parts of a flower, then your practice activity is giving them opportunities to list the different parts of the flower, which is your objective, list the different parts of the flower, it's that easy. They all go hand in hand.

After you have built your assessments and your activities, the next thing to do is select the content. This is where you pull content together in order to meet that objective. If your objective calls for students to list different parts of a flower, then your content should show different parts of the flower, that's what you want them to do.

Now naturally, you can add additional objectives that build upon this simple idea of listing parts of the flower. Listing parts of the flower is just one objective. Now you want to explain the purpose of each part. Well, that is a different objective, but it builds on listing parts of a flower. You can then take, what is the growing cycle of a flower? That is a different objective. Explain the growing cycle of a flower, describe the growing cycle of a flower. All that would be your objective. When you you have that content, you can have multiple pieces pulled together so long as in the end, you could break it apart and say, "Okay, does my content allow a student to list what the different parts are? Does my content allow students to be able to describe those different parts and the importance of those different parts? That's how it all work.

While I was doing a little research for this episode, I came across an article that was written in 2012 by Shelley Wright and I've always found her work to be interesting. She gives a lot of thought to the instructional process. She is calling for instructors to flip Bloom's Taxonomy. Rather than starting with Knowledge or remembering level activities, start on the other side by creating something and working your way back to Knowledge. You may be thinking, "Well, how can they create something if they don't know the foundational knowledge?" Well, that's how you guide them.

By starting creating, you provide the motivation to learn the foundational elements necessary for the success of that creation. You can have them start working on a website, but now you can go a step back and have other students analyze it, what makes a good website? What works on that website or not? Now they have to figure out how to make those improvements and it requires that foundational knowledge in order to do that, but they have a starting point by actually trying to create something and then working to make it better. She gave some good examples for Science and English, which I thought were interesting. I included that article in the show notes.

Lastly, with Bloom's Taxonomy, a lot of educators have gone out and created resources that will help you implement Bloom's Taxonomy. They have lists of various digital tools, it could be iPad tools, it could be computer applications where you could build instruction with those tools or have students use those tools in order to achieve that level of learning. It could be creating, it could be remembering content. At the remembering level, creating digital flashcards. There are applications that will allow

you to do that. They have them for all the different levels. Creating, it may be creating a video and what are appropriate applications for that. I put some links in there.

I just want you to be aware of them. You can actually may be do a Google search on Bloom's Taxonomy iPad apps and that will point you in the right direction to look for those particular applications. There's also trying to figure out what the appropriate action verb is to write your objectives, to write your assessments. Folks have pulled those together, they have categorized them appropriately to each of the different levels for Bloom's Taxonomy. You can go in and find a verb that will be useful to meet the objective you want to write, and that'll help you achieve that.

Once again, I plugged those into the show notes. Bloom's Taxonomy, I think is a really powerful tool to strengthen your course, because what you want them to be able to know and do is all focused on the objective. Bloom's Taxonomy helps you figure out what level that you want them to know information or have a certain skill level, and it allows you to choose the right words to be able to describe that. From there, everything else is built on the objective. I really think Bloom's Taxonomy is a great place to go. Go check out the show notes, go check out that information, and that'll help you build better courses. Before I let you go, here's a quick plug for my book.