

In the Classroom 41

Using Backward Design to Build Better Courses

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Stan Skrabut: Welcome back. Thank you ever so much for taking the time to listen to this podcast, certainly means a lot to me. I know you can be doing many other things and maybe are doing many other things, but you're hanging out with me too. For that, I really appreciate it. This week, we are going to take a look at the backward design. If you do backward design correctly, you will create instruction that achieves your learning objectives. We go through all this energy to build out learning objectives, but then we're trying to force content to fit and it just doesn't seem to work. Starting with the end in mind, we're going to work our way backward and you will put together a course that is very cohesive. That's what we're going to talk about.

What is backward design? Backward design is an instructional design strategy for developing course. It starts with the end in mind, what do you want learners to be able to do and know? This starts with your object. Once you have your objectives in place, then you design your assessments or ways that you're going to have your students meet the objectives to demonstrate that they know it, basically your assessments. After you design your assessments, you are going to design the content that teaches the students what you want them to know and do. It seems totally backward, you would think, "Okay, I'll just build out my content and then I'll build my assessments," but actually, if you go the other direction, you're going to build a course that is tighter and more coherent. You're just going to get rid of a lot of fluff. This is why I like backward design.

I first tripped upon the backward design when I was in the Air Force. We had what was called instructional systems design, or ISD. This is what guided my training department. This is how we built instruction. We started with the learning objectives that were created from operational requirements. We would have regulations, we would have our operating instructions from there we develop the objectives. This is what we want our airmen to be able to know and do in order to do their particular job. First, we had to have everyone agree upon what we wanted them to be able to know and do. Once everybody signed off on that, then we started designing the assessments.

The written questions, the oral questions, the practical evaluations, to have these airmen be able to show us what they know and could do related to the objective. Once we've had those assessments put together, then we design the instructional material to teach them to do exactly that. We taught them exactly what we wanted them to know and exactly what we wanted them to do and how we wanted them to do it. It's called backward design.

You may have also seen kind of its cousin or a way of designing called Addie, A-D-D-I-E. Addie stands for analysis, which is basically your needs or objectives, your design, designing that content, building out to your objectives and building out your assessments and instructional content. Development was actually the creation, design was how you want it to look, the development was actually the production of it. Then it goes into implementation and evaluation. You're always looking to see how you can improve it. That is Addie, but really, instructional design or the idea of backward design is pretty straightforward. It's develop your objectives, then your assessments, then your course content, and that will allow you to really hone it in.

Why use this? Well, primarily, it's really honing in on what you want them to know and do. That's it. It helps eliminate a lot of fluff because if you can't tie a piece of content to a specific objective, then why are you teaching that content? It helps eliminate a lot of this extra stuff that is often packed into textbooks and when we design a course around a textbook, that's what we get. We get a lot of this extra content that is not necessarily- well, it's not necessary. We can really hone it in on the absolute essentials of the course. It also helps the instructor identify the purpose before putting it into the curriculum. Like I said, if it doesn't tie back to the objective, why are you doing it? This is why you would want to use backward design.

How do we use it? Three stages, stage one, we're going to identify the desired result. These are the objectives. Stage two, determine acceptable learning or acceptable evidence of learning. What do we want them to be able to demonstrate that they know or can do something? Finally, designing the learning experience is instruction.

Let's, focus on this first one, I'm going to focus a long time on this first one because this is where the essence is. It's in stage one. If you get the objectives right, everything else comes easy. It's really nailing down these objectives. Stage one, identify desired results. What do you want the learners to specifically know and do? What are these big ideas, important concepts that you want them to retain well after the class is over with? To do that, you're creating goals and objectives.

There's a difference between goals and objectives. Sometimes they seem like they're really similar, but they're actually different. A goal is a broad learning outcome that they will acquire at the end of the course. It's very broad. It's not usually measurable, but it still has to be achievable. It has to be realistic and achievable, but not necessarily measurable.

Normally, you take those broad goals and then you break them down into objectives. I learned them as criteria and objectives, but you break them down into these objectives, and the objectives are measurable, they're designed to be measurable that you can see whether students can be able to do something specific. A course objective or a learning objective also known as a criteria and objective, there are three parts to it. There is the behavior, behavior verb and it starts with a verb.

You want them to be able to do something. List the bones in the body. That is a behavior, list the bones in the body? Well, if you were going to turn that into assessment, what would you have them do? Well, list the bones of the body. The activity to get there would be something that helps them learn how to list the bones in

the body. That is the first part, behavior. Learning objective has a behavior verb indicating what you want them to demonstrate or in terms of knowledge or in terms of skill.

Next, condition. A condition is a statement that describes how it is going to be performed, what are you giving or denying them. In "list the bones of the body", you could indicate a condition without reference list the bones in the body. Without a reference, you can do that. Without a list, or you can say, they can have with an image "list the bones of the body" something that you're going to either give or deny in building that objective, give or deny for that behavior.

Then finally, you have criteria. To what degree are they going to meet this objective so that you want them to list the bones in the body to a level of 80%, that they can list 80% of the bones of the body, that's a criteria. Either they can do it or they can't. That helps build out these criteria and objective. Time can be a criteria, they have to list all the bones in the body in under-five minutes. That could be a criteria.

There is a gentleman named Benjamin Bloom, who back in the 1950s developed these six levels of learning. This will help you create this learning objective because they should build on each other. Bloom came up with what's called Bloom's taxonomy for learning. Basically, he outlined the six different levels of learning and from the very basic level, it's knowledge being able to recall specific facts. Listing the bones of the body, that would be a specific fact and that would be under knowledge. Being able to recall different methods or processes, patterns, structure, those types of things all would be under knowledge.

The next level is comprehension. This is an understanding of what is being communicated and they can use this information and relate it to other material. They understand how it all fits together. That's comprehension. Next is the application, they can apply this information and also it ties to the transfer of learning where they can use it in this application, but also in unique application. Analysis, this is where they can break down something that's complex into its individual part. Next is synthesis where they take individual parts and put it together into a whole. Finally evaluation, where they can make a judgment about something.

Those are the different levels. Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation, and that's where Bloom started out. Well, then we also have a revised Bloom's taxonomy. They took what Bloom had and tweaked it in a way that you can apply it just a little easier. In the revised Bloom's taxonomy, there are different levels. One is 'remember', this goes back to that knowledge that you are able to retrieve or recall or recognize relevant information, could deal with history, it could deal with the civic things dealing with science, but you could recall that information.

The next one is 'understand' that it's demonstrating this comprehension, being able to explain something, how things fit together. Apply, same as application. Apply, this is being able to use what you've learned and put it into a new situation. Analyze, same as analysis and this is actually going in and breaking things down into their individual parts. Next, they have 'evaluate'. Being able to make this judgment, which was the last

one of Bloom's, but they evaluate and determine if conclusions are correct. This critical thinking is tied to this evaluation.

Finally, we have 'create'. Being able to take new things, put them together to create more new thing. It could be writing a composition, it could be writing a piece of music, putting together a play, building an experiment, whatever, that you get into this creating. The cool thing about this is there are lists that you can find with Bloom's taxonomy that lists these action verbs. That will help you build that behavioral piece of your criteria and objective, and help really identify the learning objectives that you want for your particular course. That is stage one, right? Stage one is really determining what we want as desired results.

Next is stage two, and stage two is really building the assessments. Going ahead and building the individual questions based on each objective that you want to measure that for-- Basically you're going to look at your list, identify which things are knowledge, content or knowledge objectives, and which ones are skill objectives, break them into two pieces.

For the knowledge objectives, this is where you would probably build out your test questions, build out your assessments, that you can look at each of these objectives and write a question that would be applicable to that objective, so you build out your assessment. For the skills, you're going to build out kind of a rubric where you can then watch somebody do something and it may require step-by-step, it may require that they meet certain parameters that you've laid out. You build your assessment so you can then at the end demonstrate that they can do whatever that you want them to do.

Once you have put that all together, then you would go into the third stage. Before I leave the second stage, I would say universal design for learning is very applicable at this point in time, because you can then-- When you assess an objective, you can provide choice in how they are going to demonstrate that knowledge to you or demonstrate that ability to perform a task and you can do that, leveraging the basics of universal design for learning. It's very much applicable to what's going on. It'll also apply to stage three where we're building the learning experiences.

Now that you have these objectives in place and you've built your assessments, it's time to build your learning experiences. What are the specific things that will help a student pass the assessment? To be honest, you're teaching to the test. You're not teaching the test, you're teaching to the test. You want them to successfully meet your objective, so you're designing content that will help them successfully complete the assessment. Part of that are also building practice activities that mirror the actual assessments, so they have opportunity to practice these things and put them into play. This all comes together in this third stage, designing learning experiences and instruction. You need to make sure that you have the content built and on hand.

Universal design comes very much into play here and that you're building in choices, you're building in supports. You may need to create videos, you may need to create specific written content or audio files or get imagery together in order to build this correctly. This is- when you're building out that content, open education resources, I

think are a really big friend. I talked about open education resources in previous episodes and I will definitely link those into the show notes, as well as universal design for learning, link that also into the show notes.

Open education resources, OER, is definitely your friend because it allows you to very specifically find the content that you need for that particular objective or that you will go ahead and create that piece. Using a textbook, textbooks are certainly convenient, but they give you more than you really need often in the course. Being able to hone it down, I think OER is a really good place to do that because you can take it and modify it to meet your specific needs.

When you do this, don't just go look for OER first. Have your objectives in hand when you go look for it because, ideally, you're just going to want to find those specific pieces that address your specific need. That way you're not just bringing in all this content and then trying to figure out how to make it work, you're only bringing in the content that you absolutely need.

Does it take time? Yes, absolutely. It certainly takes time to do that, but you will end up with, I think, a better product. Different ways that you can use OER? One is find a piece of OER content and use it as is, or you can take that content and trim it, revise it, make it work for you. Or you can take different pieces of OER content and put them together and remix it so you can have exactly what you need. If you don't have those things, definitely you can create your own. Now, absolutely important, you need to keep an eye on your license, make sure that you're doing it properly and that you're not remixing things that you're not supposed to.

Backward design in a nutshell, you're starting with your objectives, you are then going to build your assessment, then you're going to build your content material so they can successfully pass those assessments. Now, at the end of this, when they do take the assessment, this allows you to go back and look at your objective. Is that the right objective? Or go back to your course content to determine if you need to provide more supports or you need to add clarification in some areas in order for them to pass those objective pieces. This is how it all fits together and it's called backward design. With that, it's time for me to go, but here's a plug for my book.