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**ERIC MOORE:** Welcome to the podcast version of Implementing UDL at Clemson. My name is Dr. Eric Moore, and I will be your host.

There's so much talk about when we talk about UDL, going from the what of UDL to the how of UDL to the why of UDL. And I think it's really important that we start with the why. Why should we practice UDL at Clemson or in higher ed in general?

Well, one way to approach this is to look at this idea of the average or the normal student and how we have come to idealize these normal students.

[HEAVENLY MUSIC]

I know that sounds kind of weird, but I think that we really do go out of our way to prioritize normal students. And by normal I mean normal in terms of how they learn, how fast they learn, how they express through learning, and what motivates and sustains them.

For example, if we take a look at how students learn, we may often find ourselves hoping that we have students who learn by lecture, by small group work, or independent seat work depending on our different teaching style. We also want students who learn at a fairly steady pace-- the pace that we happen to teach. If they learn too slowly, we tend to want to label and diagnose them.

But learning too fast can also be problematic. When I teach at a certain pace and a student is a fast learner, they may get bored more quickly and be more distractable. We also want students who can express their learning in very convenient ways to us such as multiple choice test or essays or presentations that are innocuous or that are ubiquitous in the higher ed context.

In terms of what motivates and sustains them, we really want students who are driven by grades, or if not that, at least by compliance so they will do what we ask them to do because we asked them to do it. The further away students are from these averages-- these typical behavior and skills that we expect of our students-- the more difficult the college experience becomes for them.

This is what we mean when we talk about value of the average student and how wonderful it

would be we think if we would have a whole classroom full of students who are very similar to one another.

[HEAVENLY MUSIC]

The reality, of course, is that we don't. Our students are predictably variable. For example, if we just look at one of the categories-- how they learn-- in a lecture hall, I'm sure we can find a student who says, you know what? I learn content pretty well by lecture note taking.

And I'm confident that we can also find a student who says something like, you know what? I find it really hard to focus in lectures, and I can't take notes at the same time. I need time to talk about new information. And we'll probably also find a student who says, this is boring. I already know this stuff and want to do something with it. That's just one.

Then we have how fast they learn, how they express their learning, what motivates and them sustains them. Neuroscience has taught us that there is predictable variance in all of these things. So in higher ed, we have this tendency to think that the more average our students are, the better. Even if we don't say that, it's implicit to our systems and the structures of our education.

There are two problems with this. First, none of our students are truly average. And second, we don't really want them to be. We really want to be preparing students who are divergent, who are creative, who are prepared to solve problems that we don't have the answers to yet. Standardizing is not the way.

So how can UDL help, or why should we practice UDL? What UDL does is it moves away from focusing on the average to focusing on variability among the population. Seeing students as diverse and recognizing their diversity both among each other and within themselves enables us to design learning experiences that benefit everybody.

This leads to more rigorous outcomes achievable and more students with lifelong implications for learning. In fact, in UDL, we do away with this idea of averages altogether, favoring instead the language of predictable variability. And again, going back to that neuroscience research, what we've learned is that there is predictable variability in the human population in terms of what motivates and sustains us through challenge, how we recognize and conceptualize information, and how we plan, perform, and express ourselves.

So what does this mean in practice? Although we talk about these three brain networks, it's important to realize that ultimately we're talking about one brain when we talk about an individual, and those different networks work together. So in a traditional lecture hall, for example, we might have an oral lecture followed by students taking notes. And then we have some sort of motivators in terms of grades, and we hope that this content is of interest to the students.

So we have limited means of engagement, representation, action, and expression, so there's a few different students who are going to be successful here. If you're a student who finds that you're good at listening to oral lectures, you're good at note taking, and you're motivated by content, then you'll do just fine. If you're good at listening to lectures, you're good at note taking, and you really want to get an A, you're probably just fine.

And ideally, you're a student who is good at listening to lectures, good at note taking, you're interested in the content, and you want an A. There's a good chance you're going to be successful in this course. As you probably noticed, that's a fairly narrow range of students that we've recognized as being for whom this course is designed for their success. It's really three shades of the same type of skill set.

And the further away you are from that particular skill and interest set, the more difficult this class is going to become, the more likely it is that you're going to drop out or simply not pass the course to the degree that you are capable of. Or to put it back in terms of averaging, this is what we mean by teaching to the average student.

And what would happen if we were to go back to that lecture hall but offer multiple means of engagement, representation, action, and expression? So for example, we still have grades. We can't get away from that system any time soon. But maybe I go out of my way to make the content relevant to my students. I try to figure out where they're coming from, where they're going, and tie the lecture and the activities to things that make it important for them.

What if we develop some sort of community interaction by having meaningful groups established that do things together and support each other as things get difficult during the course? In terms of representation, I might still lecture some of the time. There's probably no faster way to convey information, but we know that by itself is not going to be a strong way to get students to learn.

So maybe I only lecture for a 10 minute burst and make sure that I have graphic

representations of key points. This isn't simply putting text up on the wall representing what I'm saying but actual, visual ways of representing concepts. And I space out that lecture by adding hands-on activities between different portions of lecture. You give the students opportunities to do something with it to experience the content through interaction.

In terms of action and expression, I might give the students opportunity to take notes and maybe even do group collaborative note taking and also have a time for group discussion to really drive the points home and talk about what makes it relevant for the different disciplines and to bring ideas together-- that sort of thing.

Now, this all sounds pretty reasonable. I don't feel like this is a tremendous amount of work, and it certainly is not an attempt to personalize learning for individual students. I've simply applied principles of multiple means of engagement, representation, action, and expression to how I deliver the content and the lesson and the learning experience to all of my students.

But watch what my students are now able to do. You might find some student who says it's the nontraditional elements of the class that really make learning possible for me. This makes me feel like I understand the content.

And you might still have a traditional learning student who likes the grades and lecture and the note taking. And so that student might say, it's really the traditional elements. I'm glad they're there. They really help me learn.

Another student might be, well, a sort of a combination of the two. And in fact, if you take those eight different elements of engagement, representation, action, and expression, there are in fact 17 different combinations that students can make of those as they construct the best possible way for they themselves to learn. In this way, the students personalize learning for themselves when the teacher provided options and flexibility in the delivery for everyone.

Or put back in terms of averaging, you can see how this addresses the predictable variability or spans the many different ways that students are going to engage with the content, are going to feel the need for differences in speed or in support and so on and so forth. In all those different ways, students are going to find the flexibility created by options to enhance their learning, and everybody will grow together with minimal changes on the side of how the teacher, in fact, delivers the lesson.

So why practice UDL? Because your students aren't average, and you don't want them to be.

UDL is a pragmatic way to let them thrive in their divergence.

So I like to start with that sort of why-based opening, because it actually reflects one of the things that we're learning in UDL-- that until people feel that the content is important to them and valuable to them, no matter how good the delivery of the material is, they won't learn-- not really. And so I want you to have that opportunity to reflect on what the value of UDL is as a great way to prepare you for learning what UDL is and how we go about practicing UDL.

So in that vein, let me tell you what way we're going. By the end of our workshop, you'll be able to articulate the value of practicing UDL-- and that one we've already done, actually. You're going to be able to basically explain what UDL is. So if somebody came up to you and said, hey, what is UDL, you could give them a basic explanation. And you're going to be able to see the UDL design thinking to design courses. Like I said, this one's already done.

So let's segue a bit from the why of UDL back to the what is UDL, and that will help us basically explain what UDL is. Well, one different way to think about this is conceptually. If you look at this image, we have three people of different heights trying to watch a baseball game. They're standing on boxes and trying to look over a wood picket fence, and let's assume that they're not doing anything illegal here.

And so as you can see, the tall person and the youth are able to see the game without problem. They're able to see over the fence. But the child on the far right is not tall enough even with the box to access the game. In this way, though everybody has equal access in the terms of there is equal provision of boxes across the different individuals, that does not result in equitable access. It doesn't mean that everybody is able to see the game equitably.

And so this second image has come about as a way to contrast these two models and how in the second one, you have the same three boxes, but they're redistributed in a different way such that the child gets two boxes, the youth gets one box, and the adult gets no boxes. And they're all able to access the game. And this is the way to demonstrate the difference between equality and equitability.

And when these images first came out, this was it. It was just two panels to establish that point, and it's a good way to think about how we traditionally approach diversity and particularly disability in higher education.

So for example, we have accessibility services. We might have note takers or transcribers or

extra time to take tests and so on and so forth that are available only to people in certain demographics. People with disabilities, for example, might get two boxes to support them in their learning. Somebody who needs a little bit of tutoring might get that one box, and the student who does not have any type of disability is expected to work completely independently as they pursue their degree. They get no boxes.

And this has been considered as a fairly successful model. Well, some people like me have come in and begun to wonder about the limitations of this model. While it certainly is an improvement over not doing anything or equality as we see on the left, there are some conceptual issues with this.

One of them is the idea that we're trying to get everybody to be at the same height to use the metaphor. In other words, we're trying to normalize our students. And the less, quote, "normal" you are, the more we have to fix you to make you normal. It's very much an ableist sort of mentality, and it's a mentality that doesn't recognize the predictable variability of your application but instead sees things in terms of good and bad-- sees disability and that sort of thing as weakness, as things that need to be fixed. And we challenge that.

We think that people-- and all of their diversities, not just disability-- are simply part of the human population and that people can learn. They just don't necessarily learn in the same way. The problem here isn't with the individual but with the environment.

And what would happen if we created an environment that was flexible enough that people with all of their diversity were able to access learning or the baseball game in the metaphor without needing those types of supports? This is what the UDL framework models-- this idea of creating flexibility in environment, challenging the idea that an individual is the source of a disabling problem, and seeing disability as the interrelationship between a diverse individual with or without a disability and an environment which is disabling. We simply change the environment.

UDL can be expressed in a nutshell as recognizing the need for clear goals and flexible means to get there. We're not talking about watering things down, about making courses easier-- quite the opposite. We want to have clear, rigorous, challenging goals and then allow students diverse pathways to get to the goal.

We believe that at the end of the day, it doesn't really matter how a student learned this particular skill or develop this set of knowledge. What matters is that they have the skill with

the knowledge requisite to be professionals in their field.

There's a couple different ways that we can conceptualize UDL. Some people say that UDL is a set of principles, and some say that it's a design framework. And I really think that it's both, but let's look at these. Either way, it's a set of principles or design framework for creating learning experiences that use flexible means for students to learn and express their learning as they achieve rigorous and clear goals.

So if we talk about it as a set of principles, we're really talking about the three UDL principles, which are provide multiple means of engagement, provide multiple means of representation, and provide multiple means of action and expression. And these map to what are called the UDL guidelines, which is a set of three principles-- those three that we just read-- plus nine guidelines like provide options for recruiting interest, provide options for perception, provide options for physical action, and 31 check points, which are those bullet points that are under each of the nine guidelines.

You might notice that these guidelines are organized both vertically in terms of the different brain networks. So provide means of engagement has three guidelines-- provide options for recruiting interest, sustaining effort and persistence, and for self-regulation-- but they're also organized horizontally. And the rows themselves are labeled. For example, the top row is labeled "access," and these are things that we do to provide simply provide access to the learning for our students.

And there's a lot here that overlaps with traditional accessibility guidelines, like Section 504, Section 508, ADA, IDEA, et cetera. You're going to find a lot of the guidelines for those overlays well with the elements that are in the first row of the UDL guidelines.

But what UDL does then is that it expands on that significantly, going into moving from accessibility to being able to build to being able to internalize engagement, representation, and expression. So for example, in the culminating row-- the internalized row-- the goal is not simply to recruit interest but get students to be able to self-regulate. In the representation row, the goal is not just to have students perceive the information but to really comprehend it.

And in the action expression principle, the ultimate goal is not just for students to be able to take physical action but to be able to manage their own behavior and their planning, their goal setting, their strategy development-- that sort of thing. We're really trying to develop what we call "expert learners." That's the goal at the bottom there.

So the goal of UDL is not just content mastery with this but to develop people who are purposeful and motivated, resourceful and knowledgeable, strategic and goal-directed. This is terribly important. Because unlike content knowledge, which fits within a specific discipline and might transfer to some extent elsewhere, these are qualities of the learner him or herself that are qualities that can transfer to any situation-- not only in the classroom but in their careers and their lives as they become learners who are lifelong pursuers of what is good and right and true in their field and the world around them. It's a really important outcome.

And in this one, by clear goals, that's what I mean by the expert learners. And flexible means comes with the process of how we're providing options according to the three brain networks.

On the other hand, we can talk about UDL as a design process. And in this way, UDL draws strongly from the concepts of backwards planning, which basically means we begin by thinking about, where do I want my students to end? What will they know and be able to do because they were in this course this week, this class, this lesson, being very clear about what the outcome is and using the outcome to drive everything else that I do?

In some ways, this alone is fairly revolutionary, because many of us were brought up in settings in which we begin with the materials. We look at what is the textbook that we're going to use for this course and go from there. And this suggests that's the wrong approach. We want to start by saying, where are we ending up?

And the next step is to look at how we're going to know that our students in fact achieved the goal that we set out to achieve. And that's developing high quality assessments and making sure those are flexible or accessible enough that they, in fact, measure what they're intended to measure. Then we think about materials and methods and how those are preparing students ideally for the assessment and to achieve the goal, and this way we're able to reach many diverse learners and bring them along that process to achieve the goal.

So in this one-- going back to that idea of clear goals, flexible means-- now the clear goal is, in fact, the content goal or the learning objective. And the flexible means appear through the process and how I give them options for assessment, options for material representation, options for how they learn and express through learning during class.

So what is UDL? UDL is a set of principles applied in a design framework to optimize learning for everyone. Or in a nutshell, UDL is about clear goals and flexible means and using what

we've learned from neuroscience, cognitive science, and education sciences to give us guidance in exactly how to do that.

So by now you should be able to basically explain what UDL is. Let's take a look more pragmatically as to how we, in fact, go about using UDL designed thinking to create and design courses-- so segueing from what is UDL to how can I design with UDL.

Well, a quick-start guide that I like to use when I'm getting people just to get their feet wet with UDL is to begin by looking at your syllabus. Reflect on your course goals. I would suggest that you aim for three to five course goals, because that's a good number for students to be able to focus on for the course. Too many more than that and it just gets overwhelming or confusing.

And you want to make sure that they are clear, accurate, and disentangled from means. What I mean by disentangled from means is that you're not introducing the assessment at this point. Sometimes-- especially if the goal is content-oriented-- there's often multiple ways that students could demonstrate understanding of content other than the way that you traditionally assess it.

So for example, if I was teaching a biology course and I was teaching about the effects of deforestation and the climate, in the culminating assessment I would have the students write an essay about deforestation and its effect on climate. And my objective might say something like, by the end of this course, students will be able to write an essay detailing the effect of deforestation on climate change.

Now, the problem with this is that writing an essay is a skill, but it's not a skill that I'm intending to teach in my biology course. I'm simply assessing them and their ability to read an essay. And I don't actually at the end of the day care all that much about whether or not they can write an essay. What I really want to know is if they understand the effect of deforestation and climate change.

And so you don't have to write an essay to demonstrate that to me. I want to make sure that I've written that objective in such a way that doesn't entangle it with essay writing. So it could simply be, by the end of this course, students will be able to articulate the effect of deforestation on climate change. And that leaves the door open, because there are many ways that you could articulate. Could be an essay, could be a presentation, could be role playing something, and we'll talk about that more when we get to the assessments.

The next step is to apply this idea of plus one thinking, a concept I borrowed from Thomas Tobin. The plus one thinking is basically whereby you review your assessments, methods, and materials, and you look for ways to add just one option whenever, wherever, and however you can in accordance with the UDL principles.

So for example, in terms of assessment, if possible, where I traditionally have required students to write an essay, if writing an essay is not a skill that I actually require, I might think, well, you can do an essay, or you can deliver a presentation. Either way, the same rubric will be used, because I'm looking for these four understanding concepts. It might be if they have to read an essay-- because that is, in fact, the objective-- I might give them some options in terms of how they prepare for the essay with different graphic organizers or using speech to text options and just think of another way that students could do preparation for that.

In terms of content representation, I might think, I traditionally orally lecture. Can I find good ways to incorporate some graphic representation of concepts in every lecture that I deliver and just start incorporating that? That plus one thinking where I just make one change to the different aspects of my course can often really begin the process of providing flexibility to enable your diverse learners to achieve.

The third thing is to use the UDL guidelines as a tool to address known barriers in your classroom. It's really a great thing to start with your knowledge of previous times that the course has been delivered, recognizing that students consistently struggle with this assessment or with this concept where they have lots of follow up questions that demonstrate a lack of initial understanding in this particular lecture and use those points to try to think about, what is the barrier here?

Are the students not engaged? Is the content not being represented in a way that's useful for them? Are they not being given enough opportunity to express themselves? And based on that, draw from the guidelines within that principle to bring about a design-based change that is intending to address that barrier proactively. When you do this and you see the fruit of the change that's brought about by designing with UDL, it's extremely motivating to encourage you to continue in that process.

And here are some resources to get you started as well. Please check out UDL in Higher Ed. They have a website called [UDLonCampus.cast.org](http://UDLonCampus.cast.org), where Cast is the organization that developed UDL to begin with based out of Harvard.

Another one to check out is this course that deals specifically with implementing UDL on the Canvas learning management system. It's a massive open online course with each lesson taking about 10 to 15 minutes. You can find it at [bit.ly/UDLonCanvas](https://bit.ly/UDLonCanvas) with the UDL and the C on Canvas all capitalized. It is case sensitive.

I also suggest that you check out *UDL Theory and Practice*, which is a textbook that is freely available online. And one of the things I love about this is that when the developers created it, they wanted to think about how UDL principles applied to textbook development. And they created a textbook that reflects the principles of UDL. Check it out-- [udltheorypractice.cast.org](http://udltheorypractice.cast.org).

OK. Now, for those of you who want to dig a little bit deeper, let's go a little bit further into the how of UDL. One way to approach it-- if we go back to this design frame mentality-- is to start with the course objectives-- the goal. What I like to suggest people do is use the set of quality indicators when they look over course objectives.

Good course objectives should be clear from the student's perspective. They should be appropriately rigorous. They should be observable and measurable. They should be valuable and/or meaningful to the students. And they should be disentangled from irrelevant means of expression.

So let's practice this a little bit. Let's say that you were teaching a 200-level introduction to management course. And we said that by the end of this course, you will be able to understand the basic principles of effective management. Is this a good goal? If you think that there are some limitations to this goal, particularly using the criterion on the right, which criterion do you feel it doesn't live up to?

There's a lot of different answers here and what I'm suggesting just one way to look at this. I think that this is a weak goal. One reason is because I don't think it's observable and measurable. It's true that I want the students to understand something, but how do I know that they understood it? There's no way for me to observe or measure understanding.

So I can make this stronger. If you want to try it before, go ahead and pause the video. See if you can rewrite this in such a way that addresses that problem and makes this objective stronger without losing this content.

Here's my example. I simply said, "explain basic principles of effective management and their relevance." This, I think, significantly improves the objective in a couple of ways. First of all,

"explain" is a much stronger verb than "understand." It is an understanding-based verb. If you can explain something, then it indicates that you understand that.

But the other thing I like about "explain" is that "explain" doesn't require a certain format. You can explain in writing. You can explain verbally. You can explain through diagramming. There's a lot of different ways that you can explain, so I'm not entangling us.

And then by adding in the relevance part, I think that will help also make this goal more valuable or meaningful for the students. So we're not just memorizing basic principles, but we're understanding what these basic principles are and why it matters in context. I think that's a much stronger objective.

How about this one? "You will be able to create new solutions to contemporary problems in management theory." Is this a good objective, and if not, what limitations do you see based on our criterion?

Again, there's multiple possibilities here. But I think the problem is that at a 200-level course, this is probably not appropriately rigorous. This sounds probably more like something that would fit with at least a master's if not a PhD level course. That might even be a dissertation or a master's thesis.

But for people who are just coming into introduction to management, they should not be expected to be creating solutions that the field is struggling with right now. So I want to reduce this a little bit. I need to rethink. What am I really going for here? I guess I want them to understand how we would go about solving these problems. I think that's a good preemptive to get them up to this point.

So I'm going to lower that level down a little bit. And so I rewrote it as "evaluate case studies using different theories of management." This gives them the requisite skills that they would then carry forward with them to solve real world problems later in their management career.

How about this one? "Write a report regarding the implications of laws and policies related to management." Do you see the problem? Well, there might be more than one. But the one that I see particularly is that it's not disentangled from irrelevant means of expression.

I think probably the writing of a report might not really be my focus. I might really just them to be able to analyze the implications of laws and policies related to management. It might be, in fact, that I want to write a report.

Maybe report writing is an important part of management-- that I want them to develop that skill. And if that's true, that's all right. I just need then to make sure that I'm, in fact, offering training and support as they learn how to write reports and also helping them learn about the laws and policies related to management. And so I'm probably actually going to split this into two objectives in that case.

But let's imagine for a moment that report writing is not the point here. I just want them to be able to really grasp the relationship between laws and policies in how we practice management. So I might convert this to "analyze laws and policies regarding their implications for management practice."

We can also use Bloom's Taxonomy to explore these different objectives, and what we're really looking for here is this concept of appropriately rigorous. So in this case, we ended up with a few objectives. We had explain the basic principles of management, blah, blah, blah. We talked about analyzing policies, and we talked about evaluating case studies.

So notice that those fit with these different levels of Bloom's Taxonomy where Bloom's Taxonomy is basically a way to understand different ways that people interact with content and concepts. Starting with remember at the very bottom, just being able to recall or identify concepts all the way up to create, which is the most advanced, we're kind of expanding from lower order thinking like understanding to higher order including analyze and evaluate.

And noticed that those objectives are, in fact, in order, and they build on one another. We have this concept that you have to be able to understand basic concepts before you can analyze policies that use those basic concepts before you can evaluate case studies based on everything that you've been able to analyze and understand. There's a definite progression here that fits with the idea of constructivism in education theory, so it's a good way to kind of see how things are working. I think that that's a very successful objective outline.

What would happen then if you taught a course in which your objectives looked something more like this where you started with one analyze, you had a few evaluate, and you had a create. When, if ever, would this kind of objective structure be appropriate?

I think that this is probably only going to be appropriate in an upper division course at least-- probably more like a master's or PhD-level course. The idea is that the students already have underlying conceptual knowledge and are ready to get into more advanced analysis,

evaluative, and creative applications. Depending on the class, if this was a applied art class-- that kind of thing-- then you might get into some of this earlier, but it is worth being thoughtful about.

This is probably not what a 100 or 200-level course looks like. And if you have objectives that map like this and those types of courses, it might be worth really thinking about. What am I doing to support the underlying conceptual knowledge to enable my students to be successful with these?

What about this? Would this ever be appropriate? In this case, I would say this would almost never be appropriate, not even in a 100 or 200-level course. And the reason is because this type of content really only lends itself to lecture, to multiple choice testing, to that level where you're never really getting to a point of being engaged and doing something with the content.

And one thing that we've learned both anecdotally and in research over and over and over is that students want to be able to do something with their learning. And if they don't feel like it's applicable, like it's valuable, like it's useful, then they're unlikely to really learn. They might be able to store content in their short-term memory long enough to pass the test and get through the course, but real learning requires higher order application type of thinking and ability with the material.

So I think the only time that this might be appropriate would be like a welcome to Clemson. Where do you go for help with this type of thing? How do you navigate campus-- very basic type content-- not for a academic course.

Now comes the challenging part. I would strongly encourage you as a way to practice what we've been talking about looking at your own syllabus. Take a look at your own goals and reflect on them. Use those criterion. Are they clear? Are they appropriately rigorous? And you can use Bloom's Taxonomy for that.

Are they observable and measurable? Are they valuable and meaningful for the students? Are they disentangled from irrelevant means of expression? And do they map to Bloom's in a constructive way? Are you clearly moving from supporting basic concepts to a more advanced application, analysis, evaluation of creation using those concepts?

The next step is to take a look at your assessments. There's a few big questions that I like to ask people when we look over our assessments. First is, do the assessments match with the

objectives? Then, how can I increase authenticity? And finally, where I can offer flexibility to maximize validity?

Let's take a look at each of those. Do the assessments match with the objectives? Well, let's take a look at some examples. Here we have our objective that we created earlier-- "evaluate case studies using different theories of management"-- and a proposed assessment, which is a two to three page report in which students explain different management theories. Is this a good fit?

Well, we can bring Bloom's Taxonomy back in here as a way to understand why it's not a good fit. The key verb in the objective was "evaluate" which matches with "evaluate," whereas "explain" is an understanding-based verb. So conceptually, they are different levels of Bloom's Taxonomy. If I want my students to be able to evaluate, I need to give them an opportunity to evaluate.

Second, in terms of content, the original objective focused on case studies, but there's no case studies in the assessment. There's a mismatch in terms of context. So this objective and this assessment are a poor fit both because they are conceptually at different levels and because they're of different content. We want a match in both.

So let me modify this. What if I have the students present a report-- either written or oral-- in which they compare and contrast two theories of management and evaluate strengths or limitations of those theories when applied to specific cases? So notice that compare and contrast and evaluate are evaluate-based verbs-- actions-- and then they both deal with case studies. So this is a much better fit. If the students are successful in this assessment, I can say with confidence that they have, in fact, achieved the objective.

So take a look at your own summative assessments. I want you to check to see. Does the content to content match from the objective to your proposed assessment? And does the cognitive domain, the cognitive domain, the Bloom's Taxonomy level match from your objectives to your assessments? And if not, there's a great opportunity to make some changes.

The next question is, how can I increase authenticity? What we know more and more from neuroscience research and education research is that if students see relevance and value in assessment, they will work harder and accomplish more. So when we give something like a multiple choice test, these are intrinsically not particularly valuable. The value that comes from

the multiple choice test is circumstantial-- the fact that passing this test will help me get my certification, and the certification is valuable.

But if we're training students to be engineers, for example, and we're building a new bridge on campus and we get the students to collaborate to make proposals for different ways to make structurally sound bridges and those proposals will actually be submitted and possibly lead to a grant, that would be incredibly motivating. And I'm confident that the students would work much harder in been successful with that because of its relevance, because of its value. And while that might be an extreme example and an example that can't be applied very often, I'm using it to illustrate the point that any time you can find ways to make the work more relevant and more contextual as to the actual careers that students are striving for the better.

Finally, where can I offer flexibility to maximize validity? This is going to be very subjective. There's no definite answer for me to provide here, because I don't know what's happening in your course. I don't know what your objectives are, et cetera.

But I want you to think about the different kinds of flexibility. Often when I talk about providing options with assessments, people think that I really only mean options for the method of assessment-- so write an essay, or deliver a presentation, or role play a newscaster in Panama talking about the situation. And that's fantastic if you can do that, but it is certainly not the only way.

Sometimes writing an essay, delivering a presentation, developing a report are, in fact, skills that you need to develop in your students, and then providing options would be counterproductive. So please recognize that there's a continuum of ways to offer flexibility. In addition to options for methods of assessment, there can be options for how to compose the assessment.

So for example, use speech to text to write an essay or deliver an oral presentation through a podcast or live in person. Maybe students with significant anxiety will be able to deliver orally or presentations better if they can record themselves first. I might provide options for preparation towards a final assessment-- so maybe provide flexibility and different methods that students can use different scaffolds they can use to get their ideas together before they start presenting it graphically or textually or otherwise.

I might think about options for understanding expectations. Some students might really benefit from seeing a good rubric. Some students might want to see an example. Some students

might really benefit from taking the time to go through that example with the rubric so they see how the rubric is used and are very clear about what to expect.

And on the far opposite side, we might, in fact, have options for the outcomes themselves. So in the case of things like terminal projects with master's degrees or doctoral dissertations, the student might set their own objective-- what they want to accomplish as a result of this.

Capstone courses can be another great place here where the students say, this is where I'm going, and then we can create an assessment that will let me know and let you know that I, in fact, got there.

And actually, when we create this kind of flexibility, it improves the validity of the assessment. By this I mean the assessment measures what we intended for it to measure. If I, for example, want to know what my students have learned and the degree to which they understand the effect of deforestation on climate change and I simply have them all write an essay, then some students are going to struggle with that essay-- not because they don't understand the effects of deforestation, but because they're a poor essayist.

And if I had simply given that student the option to deliver their understanding through an oral presentation, then I would have gotten a more accurate understanding of what they understand about the effects of deforestation. And therefore, the assessment would be more valid. That's what we're going for here. We want to improve the validity of our assessment and our students' experience therein.

When it comes to methods and materials, this goes right back to that core principle-- clear goals, flexible means. The more we can think about options for the materials, the more our students can pick and choose what works for them. For example, if I have a textbook, I'm going to strongly consider finding a digital textbook that allows my students to go from text to speech and listen to the text instead of reading or listen to it in addition to reading it.

I might think about when I'm presenting a new concept-- instead of just finding a research article, maybe also find a video and some other ways of representing that content. The end goal is to get my students to that same rigorous outcome. I'm simply recognizing that some things are going to work better for some students than others. And anywhere I can provide options in the methods and materials that I deliver that content, the better the chances that my diverse students will all be successful.

It's worth recognizing that not only textbooks and lectures but even small group activities or just about any method by itself can be more or less accessible and usable for different students. It's not about moving from lecture to small group activity all the time, because then you're going to be advantaging some students and disadvantaging others, just like it was before.

Remember that there are some students who would prefer the lecture to small group activity, especially, for example, students who have more introverted qualities sometimes might find small group activities to be stressful in a way that lecture is not. The point is to provide different ways of doing things-- providing options for how to access the content to enable people to choose their own path and all achieve the same destination.

At this point, I would encourage you to sit down with your instructional design specialist or UDL specialist on campus and really talk through the possibilities. There's all kinds of tools out there that you may or may not be aware of. Look at what approaches, methods, and materials you're using at present. What barriers do you think those potentially pose to some of your students, and what options we might have to expand the flexibility of methods and materials to enhance learning for everyone?

In this way, we're designing starting with a goal, working backwards with assessments, methods, and materials. And through the entire process, we're creating clear goals and flexible means to enable all of our diverse learners to succeed.

If you have questions, please feel free to follow up with me by emailing me at [drejmoore@innospire.org](mailto:drejmoore@innospire.org). I look forward to talking more with you, and thanks for watching.