Module 2B: Basic Elements for Developing Student Learning Outcomes

by Dr. Tim Brophy

Hello. My name is Tim Brophy, and welcome back to Passport to Great Teaching Creative Assessment. This is module 2b where we'll discuss the basic elements for developing student learning outcomes.

The first basic element is to define the term. And SLO, Student Learning Outcome, is defined as what students are expected to know and be able to do by the completion of a course or program of study. So we're going to focus in this module on course-level student learning outcomes. But be aware that your program also has programmatic-level student learning outcomes as well. So the basic element here is to ensure that you apply this definition consistently and that your fellow faculty members that you're working with also share this common definition.

The second basic element is to apply a categorical organizing framework of some kind to your student learning outcomes. Now, in the state of Florida, the Florida Board of Governors, which oversees the State University System institutions, has defined three categories of outcomes that every undergraduate program in the State University System must have. And here they are.

The first one is content knowledge. The second one is communication. And the third one is critical thinking. However, because the Board of Governors requires these three areas does not mean that we cannot have additional ones like creativity. So really, it is up to you as a faculty member teaching your courses to determine which categories of student learning outcomes are best for you.

I also want to bring up, if you are teaching a graduate-level course, now the graduate school has also defined three categories of outcomes that are appropriate for graduate programs. And they are discipline knowledge, skills, and professional behavior.

The third basic element is to ensure that your student learning outcomes are not only recent or current but relevant and rigorous. And let's talk about what that means. First, we know that student learning outcomes reflect the curriculum that you're teaching as well as your expectations for your students. And as these elements evolve, learning outcomes will also change because our disciplines are alive and well and developing.

So by recent, we simply mean that the outcome reflects current knowledge and practice in the discipline. And this is where outcomes often will change as new knowledge is gained in the discipline. As new skills are developed, the outcomes will also change to reflect these

to the degree to which you wish your students in your course or in your program can demonstrate those.

Relevant has to do with the degree to which the outcome relates logically and significantly to your curriculum. So we want to make sure as we develop outcomes that they are covering content that we're covering in our courses. And that's something that isn't covered.

Then rigorous has to do with the degree of precision that we expect and thoroughness that we expect from our students when they are meeting our outcome. So to meet it successfully, they have to have a certain degree of academic precision and thoroughness. And that's what we refer to as rigorous. So all of our outcomes should be recent or current and very relevant to our curriculum and rigorous as well.

The fourth outcome is to help us think about distinguishing what an output of a program or a course is from an outcome for our students. So we know that outputs describe and count basically what we do or who we reach, like how many students we have or the products or the services that we produce. So processes we know that we engage in are going to deliver the outputs. And what's produced at the end of the process is the output. Whereas the outcome is a level of performance or achievement.

Now, this is often associated with a process or an outcome-- or excuse me-- or an output. Say an output is a paper. So the outcome might reflect that the paper is going to be the way we measure that outcome. But outcomes also imply some kind of measurement or quantification of a student's performance or knowledge or skills.

So what is the difference between outcomes and outputs? So let's have a couple of examples here, and we'll see how you do. All right. We'll have those in just a moment.

But we seek to measure these outcomes as well as their associated outputs. And the SLOs focus on the outcome piece. So while we produce a number of program graduates, for example-- that's an output-- it's critical that we know the quality of the students as defined by our program. So these graduates that we're producing-- we have 25 graduates in our program, we're very excited-- well, what they know and are able to do is what we measure by the outcome.

All right. So outcomes describe in measurable terms these quality characteristics by defining our expectations. And we'll talk more about measurability in the next module.

So there is two examples. Let's figure this out, OK? So the first one is the mean scores our students received on the 2017 course history final examination increased by 10 points over the 2016 scores. So I ask you now, is this an output or an outcome? Think about it.

All right. This is an outcome because it's measuring the quality of the student that we're producing. Clearly, they know more if the score has increased. Now there could be other

factors that relate to that increase. But just looking at this as an example of an output versus that outcome, this is clearly an outcome.

Here's another example. We increase the number of students in the psychology program from 100 in 2017 to 110 in 2018. Well, is this an output or an outcome?

Well, this is an output because this has to do with counting the number of students that we have had. We know the number of students at the end of the admission process. All right. And as our admission process produces these students for us, we have the output that changes.

Basic element five has to do with distinguishing SLOs for program goals because they're quite different. We know that student learning outcomes describe what students should know and be able to do by the time they finish a course or a program of study. And our teachers all set targets or thresholds of acceptability for their SLOs. And by this, we mean this is the percentage of students who should meet the outcome successfully in order for us to consider the outcome achieved at a degree that we like.

Now, 70% is usually the general benchmark, but you can set it higher if you wish. Don't recommend that you set it any lower than that, though. And honestly, most professors at the University of Florida have set their targets much higher than that. Whereas a program goal describes expectations for program elements-- so these are things like admission criteria, enrollment caps, acceptance rates, and so forth-- so these are very different.

Let's look at a couple of examples and determine if this is a program goal or student learning outcome. Here's the first one. We will increase our internship participation by 20% next fall. And let's say next fall is fall of 2019 or fall of 2020, whenever that may be.

So here, we have a program goal choice or an SLO choice. Think about that for a moment. All right. This is a program goal because this has to do with an internship process or expectation we have for all students in our program. So we're measuring this at the program level. But if we say something like, students discriminate musical quality based on sound musical reasoning, this becomes a student learning outcome because, here, we're measuring the ability of a student to do this and therefore demonstrating the quality of the students that we're producing in our program.

The sixth outcome is to ensure that the outcome is measurable. Now, measurability has to do with having an effective SLO that focuses on what students know and are able to do because all disciplines have a body of core knowledge and skills that students must learn to be successful graduates. These also describe observable and measurable actions or behaviors. We'll talk a little bit more about that. All right.

So the effective SLOs do present a core set of observable and measurable behaviors. And measurement tools vary from exams to complex tasks that are graded by rubrics, and rubrics are something we talk about in a later module as well. So the key to measurability,

though, is an active verb that describes an observable behavior and process or product--describes as behavior, process, or product.

So what are some of the verbs and phrases that complicate this idea of measurability? Well, one is the word understand. We see this a lot in course-level outcomes. Well, I ask you to think about what you mean by understand because this is really an internal process. It's indicated by demonstrating behaviors. So it could be OK for a learning goal for a program, like students at the end of our program-- we want them to understand something. But as a goal for a course or a SLO for a course, we really want to unpack what it is we mean by demonstrating understanding.

Then appreciate and value are other words that are sometimes used in student learning outcomes. Again, this is an internal process. We can't really tap into anyone's level of appreciation or value of something unless we see them demonstrate or have them demonstrate some kind of behavior. And, again, the other pitfall of this particular word, these particular words, is that these are closely related to personal choice or preferences.

Become familiar with is something that we see often in a course-level outcome. And this really focuses on assessment on the becoming familiar part and not the actual familiarity with something. So that is something to bear in mind if you choose that phrase.

Learn about, think about. Again, this is really not observable. We don't know what students are learning about or thinking about unless they communicate or demonstrate that learning and thinking through some kind of a performance or presentation or product that we can measure later.

Become aware of or gain an awareness of. This is the same problem we had with become familiar with. That is, it focuses assessment on becoming or gaining, not actual awareness of something.

And then finally, this is the most common one that I see that I really advise faculty not to use. And that's the phrase demonstrate the ability to because in the psychological literature, there is a big difference between an ability test and an achievement test. And if you use this term, you are focusing the assessment on ability, not achievement or demonstration of a skill. Excuse me. So we want to be sure that we are focusing our SLOs on student achievement and what we have at the end of a particular learning process.

So here's two examples. Is the outcome observable and measurable? So let's take a look. The first one is that students solve multivariate quadratic problems. Is this observable and measurable? Yes, it is because we're focusing in on the students' solution of the multivariate problem. So therefore, we can observe and measure that behavior through some kind of demonstration of that behavior.

Here, students explore and learn about grassland biodiversity. I've seen this before in some courses. Well, is this one directly observable and measurable? Really, no, because

exploring and learning are different things that are difficult. They're processes and processes that happen inside internally. All right. So it's difficult to measure those directly. There would be better ways to state that outcome to make it observable and measurable.

So here's our summary of our basic elements. One is to ensure that the definition of SLO is applied consistently. Consider a categorical organizing framework beyond what is required by our Board of Governors or what is recommended by the graduate school. Keep your SLOs recent or current, relevant and rigorous. Be sure that you're not writing outputs, but you're writing outcomes. Distinguish between the two.

And distinguish your outcomes from the program goals. Make sure they're not getting intermingled. And ensure that your outcome is measurable.

Now it's time to pause to think for a moment about the courses that you're teaching. So I'd like you to examine the student learning outcomes for one of your courses. So how did these outcomes meet the basic elements that are described in this module? Thank you, and I'll see you in module 2c.