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Assessment basics: How to implement an effective student learning assessment process

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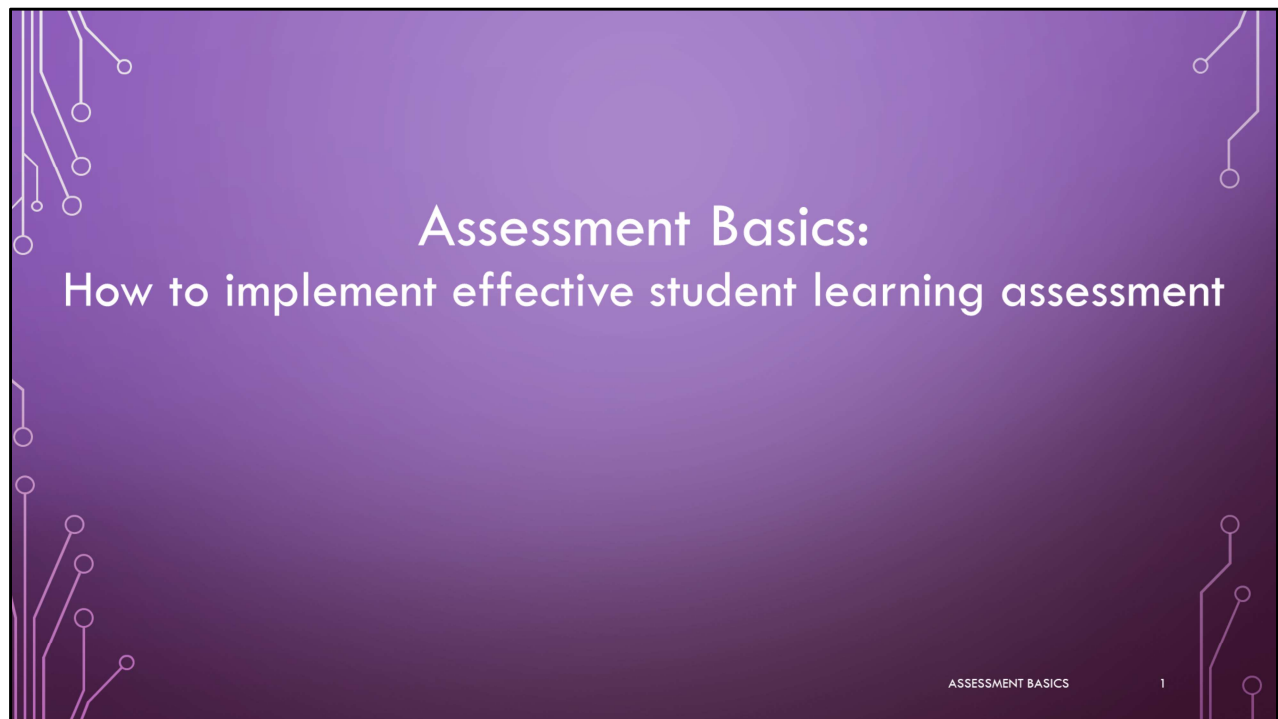


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Welcome to this session focused on the basics of student learning assessment. We will be focusing on how you, as department heads and academic leaders can guide effective assessment processes.

During this session, we will have the Mics turned off until the end for discussion, but throughout the session, please put questions in the chat box that we will follow and interject at appropriate times.

If more clarification is needed for questions, we can turn on your mic individually for specific discussion. And we will have them one at the end for interaction.



Office of Assessment



Dr. Frederick Burrack

Director of Assessment
Kansas State University



Assessment Basics

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My name is Frederick Burrack, Director of Assessment at Kansas State University where our office assists programs and co-curricular units to design, administer and analyze effective assessments that lead toward a variety of programmatic and institutional decisions of effectiveness and improvement.

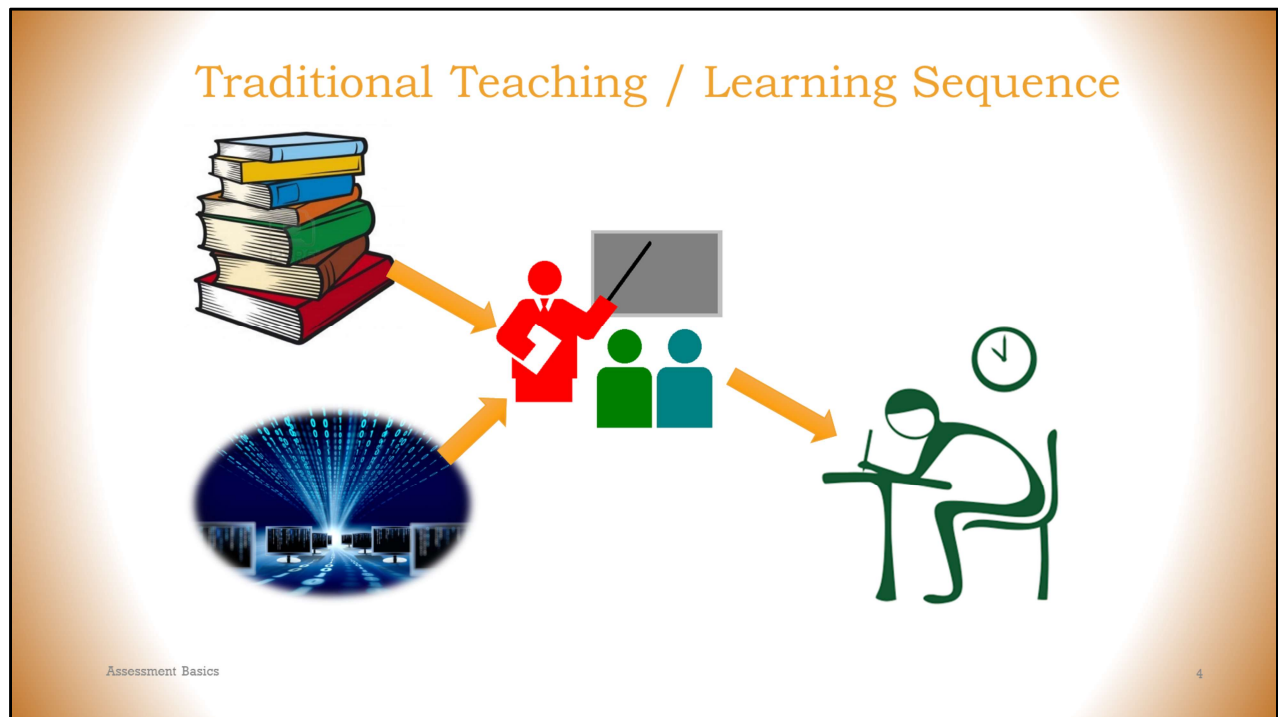


We can easily come to agreement that the purpose of education is for students to learn.

We introduce what are new ideas and concepts through the teaching in our courses.

(click) But what we teach does not define learning.

Learning is defined by how they make sense of these new ideas, concepts, and skills, then transfer them to new situations.



Teaching has often been designed with **(click)** the instructor identifying what they wish to teach, or what educational norms designate is important. Until the most recent past, this has been through published texts. The source of content comes increasingly from sources beyond published text books.

(click) The title 'Professor' came from the practice of presenting information and appropriate examples for students to attain.

(click) then the learning outcomes are defined by the exams evaluating what has been selected by the professor.

I share this construct because an assessment culture is founded on an alternative construct of teaching and learning.



Learning is defined by:

- how students **make sense** of new ideas, concepts, and skills,
- and **transfer/apply** them to new situations.

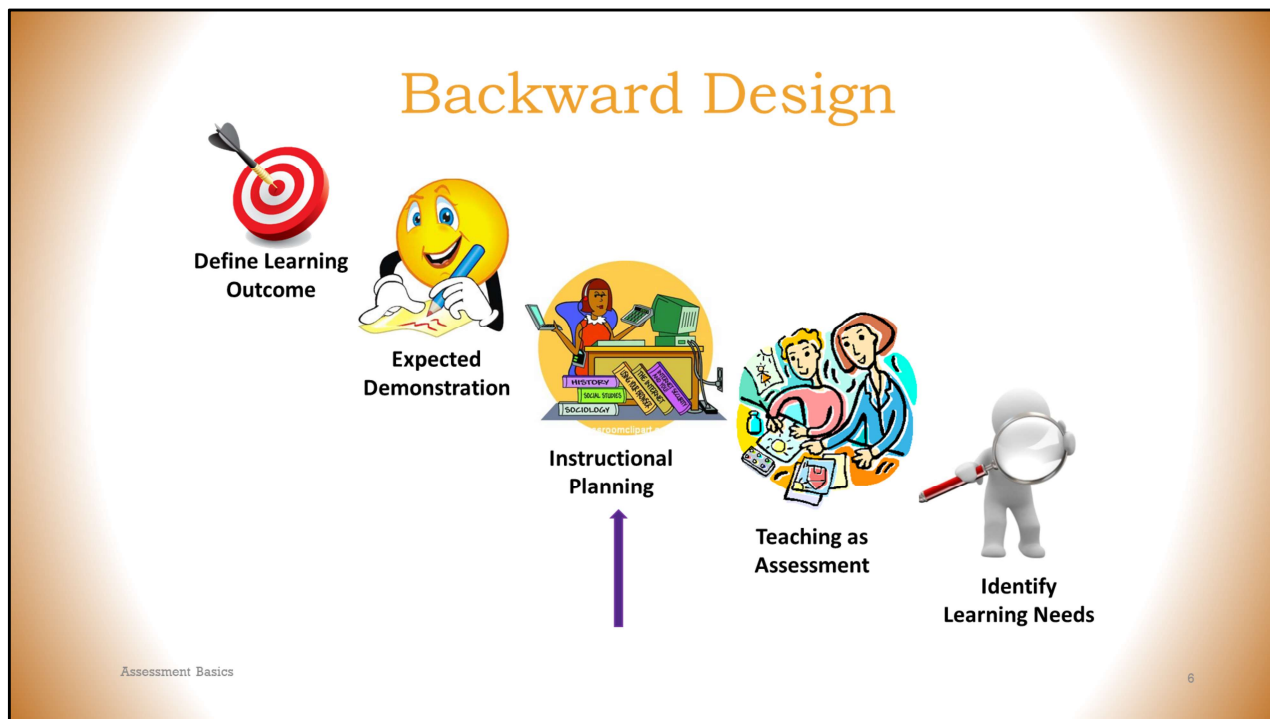
Assessment Basics

If learning is not defined by what we teach, then what defines student learning? We must think beyond the content and skills taught to what results from our teaching and the curriculum.

(click) Learning is defined by how students **make sense** of new ideas, concepts, and skills, and **transfer** them to new situations. If students simply reflect back to us what we teach, how do know that they have learned?

Assessment is a means to recognize how students are understanding what is being taught and observing how students demonstrate their learning in authentic application.

Why is it important to identify how students demonstrate what they have learned in an authentic context?



The alternative teaching and learning construct is focused on a *Backward Design*. Instead of 1) choosing the content to teach; 2) teaching the content; 3) and testing the content taught to identify what was learned;

Instead of identifying the learning outcome as a result of teaching, backward design begins with

(click) deciding what is to be learned. These learning outcomes are the basis for all decisions in the instructional process;

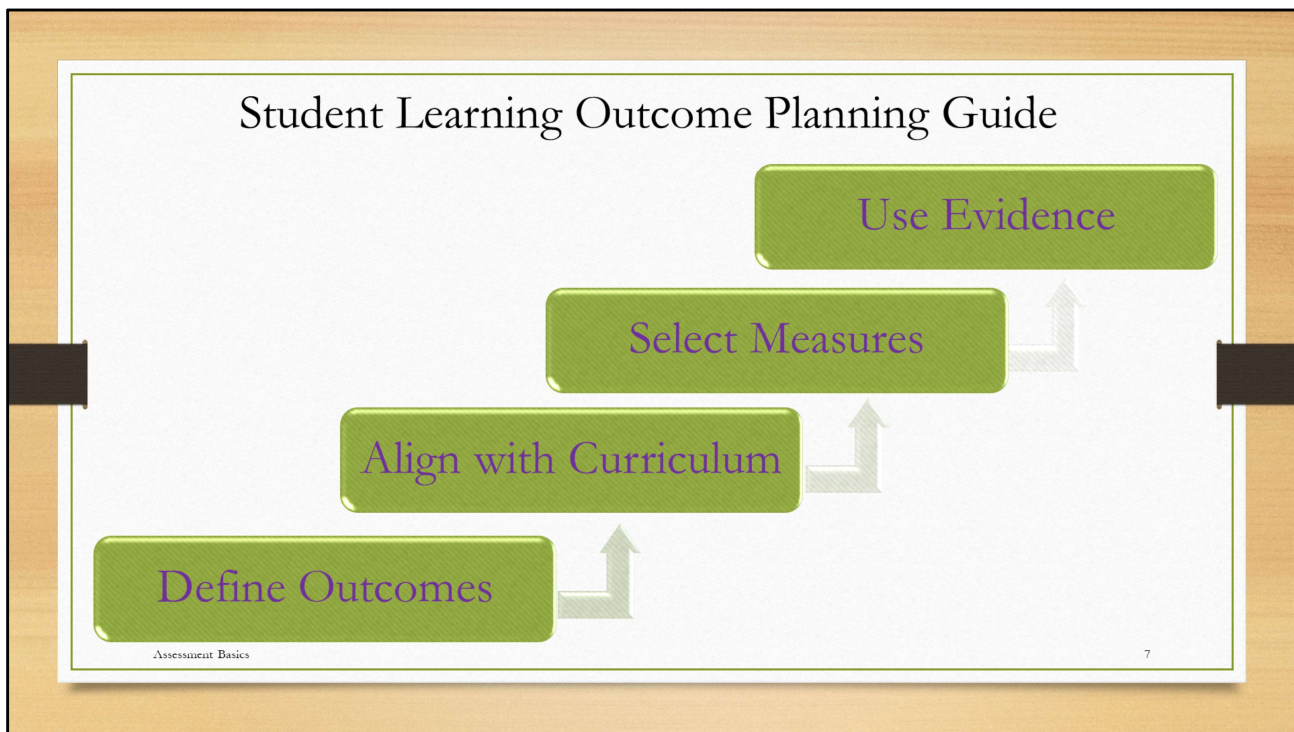
(click) Additionally the assessment is defined before instruction and content is determined. In backward design, it is important to define how you expect students to demonstrate the learning outcomes. (assessments);

(click) plan instruction and content appropriate for the students so that they can develop the skills so to apply the learning as intended;

(click) then you teach and identify achievement through the planned activities. If designed to do so, student can demonstrate developmental learning as they participate in the instructional activities we call teaching.

(click) Resulting from assessment measurements, an important component of teaching is identifying successes, but more importantly, the primary purpose of assessments is to identify if there are deficiencies that need to be addressed to fully attain the desired outcome.

Then you go back to and either reteach deficiencies or progress to new or enhanced outcomes.



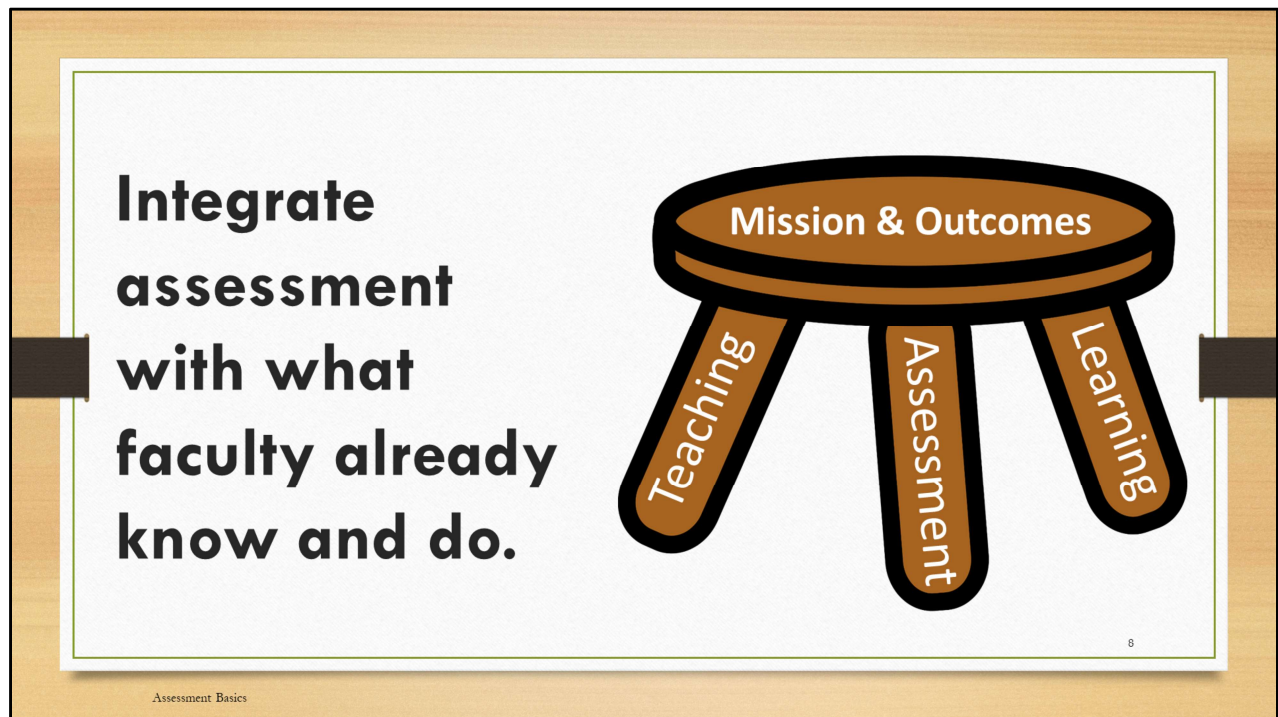
(Using examples to explain each process) think like you are doing a research and what process that you use to guide you through on each step and why

Why do we need an institutional assessment process to be used here instead of each program can do whatever they want/whenever they want?

- Faculty come to agreement what learning expectations that define the students learning after complete coursework.
- Faculty identify where in the curriculum (in the program level) the learning is introduced to students and developed across coursework. (elaborate more here)
- The measures are selected (what does this mean here that faculty should pay attention to); These measures include scoring devices that will sufficiently differentiate qualities of learning to provide information useful for understanding program quality.
- The most important aspect is to use the data that exposes challenges experienced by students to guide curricular and instructional adjustments that could result in improved learning.

Word of advise from us:

- **Design an assessment process that works for you.**
- **Integrating effective assessments into current instructional processes.**
- **Create a system of data collection and analysis upon which decisions for enhancement can be based.**
- **And most important of all, to develop a culture that values assessment.**

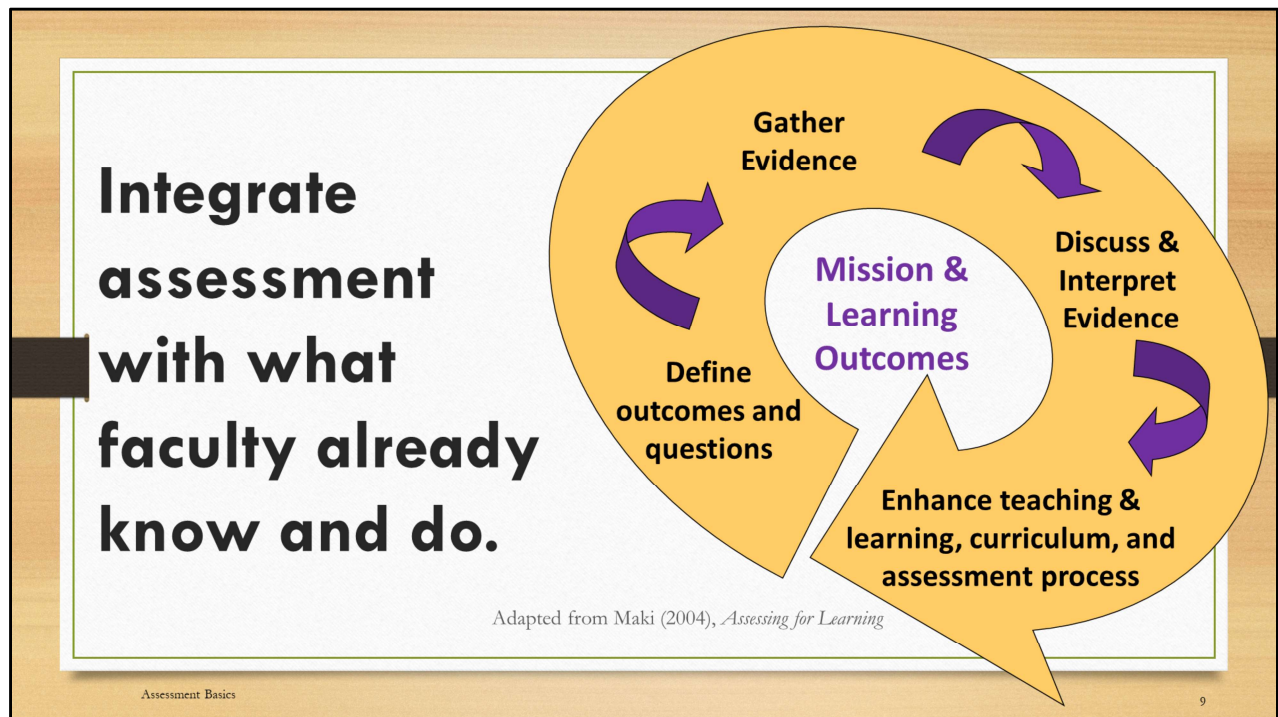


We should consider the teaching, learning, and assessment as a three-legged stool. They all work together to hold up the of the mission and outcomes of the program and institution.

A Culture of Assessment must integrate with what faculty believe, what they know about expectations for student success, and what they do in teaching throughout the curriculum. **We are here to support faculty even sometimes we need to provide an education to assist them to see what we see**

What are the challenges we could have facing if these three elements are not balanced?

What having faculty at your corner can make a significant impact on establishing cultural of assessment?



We should begin looking at the fundamental structure of an institutional process of student learning assessment. This is a structure that began to take hold in the United States early in the 21st century and is used to guide success of student learning as well as foundational for accreditation.

Assessment of Student Learning as a process in higher education is part of a broad cycle of teaching and learning. It begins with defining what student are to know and do as a result of teaching. Evidence of learning is gathered to identify the extent and the quality to which learning occurs in respect to and beyond the learning outcomes. One of the most important components of this cycles as an institution or program is interpret the meaning of the evidence collected to guide teaching, learning, curricular, and assessment process improvement.



Why teaching, learning, and assessment can't be separated in this process

Example of why these three elements need to be connected

We often think of assessment as isolated from teaching and learning. But it is the act of assessment that informs teaching and exposes the extent to what learning has occurred. Without assessment as learning, what we are left with are unanswered questions as to what and how students have learned.



"Learning outcomes - observable,
measurable actions that students
will be able to perform upon
successful completion of a
course."

As Fred mentioned, LOs are the basis of all, curriculum, instruction, and assessment. So, What is a Student Learning Outcome and what should it look like?

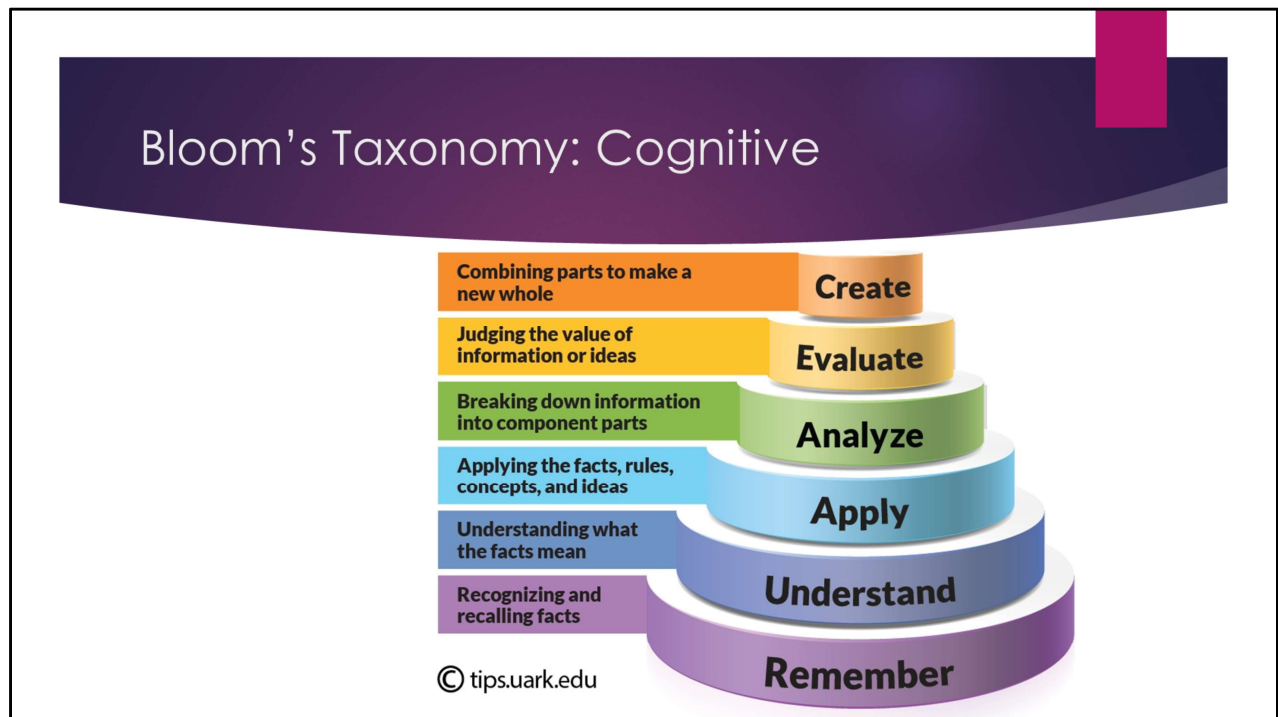
"Learning outcomes specify **observable, measurable** actions that students will be able to perform (**demonstrate**) upon successful completion of a course."

Key Concepts– What is to be learned / demonstration of learning / expectation of quality

There are different kinds of frameworks that help you design learning outcomes. For example, Bloom's Taxonomy, which is frequently used.



There are different kinds of frameworks that guide the development of learning outcomes at different levels. I will just introduce a few today.

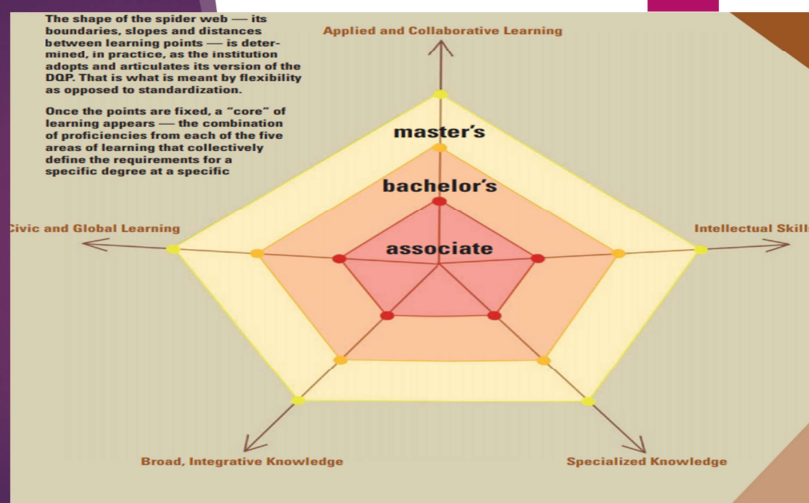


A very frequently used framework for developing learning outcomes is the Bloom's Taxonomy. You may have heard about it. Simply stated it is a classification system for defining and distinguishing different levels of learning/cognition. What I am showing here today focuses on the cognitive domain, i.e., knowledge and development of intellectual skills. By the way, there is also the affective domain as well as the sensory domains. This taxonomy is very easy to use. Many HE institutions have created verb lists in each of these levels, as guidance for faculty members to develop learning outcomes that are appropriate for their courses or programs. By the way, Bloom's taxonomy also includes two other domains: affective and psychomotor.

Degree Qualifications Profile (DQP 2.0)

SOURCE

https://www.aacu.org/sites/default/files/files/quality_collaboratives/DQP2.0-DRAFT.PDF



Another useful framework is the DQP released by the Lumina Foundation a few years ago. What you see here is DQP 2.0 from 2014, which was initially developed in 2011. NILOA is currently overseeing the development of DQP 3.0. What's unique about this framework is that it aims to benchmark the different degree levels, including Associate, Bachelor's and Masters. In this framework, proficiencies or LOs are organized in five categories. IN each of these categories, distinctions among the three levels are proposed. Here are the five categories:

1. Specialized Knowledge, addressing what students in any specialization should demonstrate with respect to the specialization.
2. Broad and Integrative Knowledge, asking students to consolidate learning from different broad fields of study — the humanities, arts, sciences, and social sciences — and to explore concepts that bridge these essential areas of learning.
3. Intellectual Skills: including analytic inquiry, use of information resources, engaging diverse perspectives, ethical reasoning, quantitative fluency, and communicative fluency.
4. Applied and Collaborative Learning, where students apply their learning at work and in other settings outside the classroom. This category includes research and creative activities involving both individual and group effort.
5. Civic and Global Learning: student integration of knowledge and skills in

applications that facilitate student engagement with and response to civic, social, environmental and economic challenges at local, national and global levels.

I heard that DQP 3.0 is being worked on and I am looking forward to learning more and how HE institution may use it to facilitate the curriculum design and assessment work.



Aspects of Knowledge

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- **Specialized knowledge**
 - Disciplinary
- **Conceptual knowledge**
 - e.g., Social, Cultural, Ethical
- **Procedural**
 - How and Why
- **Metacognitive**
 - Mental Knowing Self

Assessment Basics

Combining the two frameworks, let's talk about practical applications in designing LOs and assessment.

For both frameworks, Bloom's or DQP, knowledge is at the basis of the cognitive processes. (click and click) So, let's look at knowledge first.

(click) We all assess how much our students can recall and retain of the expected disciplinary knowledge. These are the factual components of learning that become foundational for all future decisions.

(click) This is assessing the context into which the factual knowledge will be applied. Disciplinary and historical knowledge means one thing in the context of a text book or classroom. But conceptually understanding this knowledge within a variety of social, cultural, and ethical contexts the meaning constructed by students can be very different, which is essential for success in a complex world society.

We often look at mathematics as numerical literacy, but conceptually mathematical knowledge is an understanding of the world in a spatial context. Calculating accuracy and perfection in a symbol system to understand the world.

(click) If we expect students to apply the knowledge attained in a particular context, we must confirm that they know procedurally how to apply the knowledge in context and

can rationalize why.

(click) Many disciplines forget how important it is for students to know themselves physically and mentally. To know what they have learned, but even more importantly to recognize what they do not yet know as motivation for life-long learning.

As assessment directors at our universities, one of the most important duties is to remind the programs to consider the variety of knowing that is essential for student success and to encourage intentional inclusion of opportunities for students to demonstrate the quality of knowledge development in all areas.

Skills and Competencies

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- Research Project
- Internship Experiences
- Performance Exhibitions
- Creative Projects





Process Skills:

- Communication
- Critical Thinking
- Problem Solving

Assessment Basics

Both in Bloom's and DQP, we see skills and competencies, which are critical for student success. Knowledge is important, but only as a foundation for application. Assessment processes must require students to demonstrate application of knowledge authentic to expectations beyond the classroom. These are applied assessments such as: (click)

- student-developed research projects
- Internships experiences
- Performance Exhibitions
- Creative Development of Projects

Many programs include the development of essential applied skills, but may need guidance on how to develop scoring devices to identify competency to particular benchmarks or standards, which is essential for assessment processes.

(click) It is also important not to forget process skills such as:

- Communication Skills: which includes written, oral, graphic, gestural
- Critical Thinking: which includes identifying issues, selecting and using evidence, recognizing context, developing a perspective, and drawing conclusions
- Problem Solving: Defining problems, developing strategies, purposing and implementing solutions, and evaluating outcomes.

All these essential Skills and Competencies cannot be assessed as knowledge. They must be assessed through doing and applying.

Professional Dispositions

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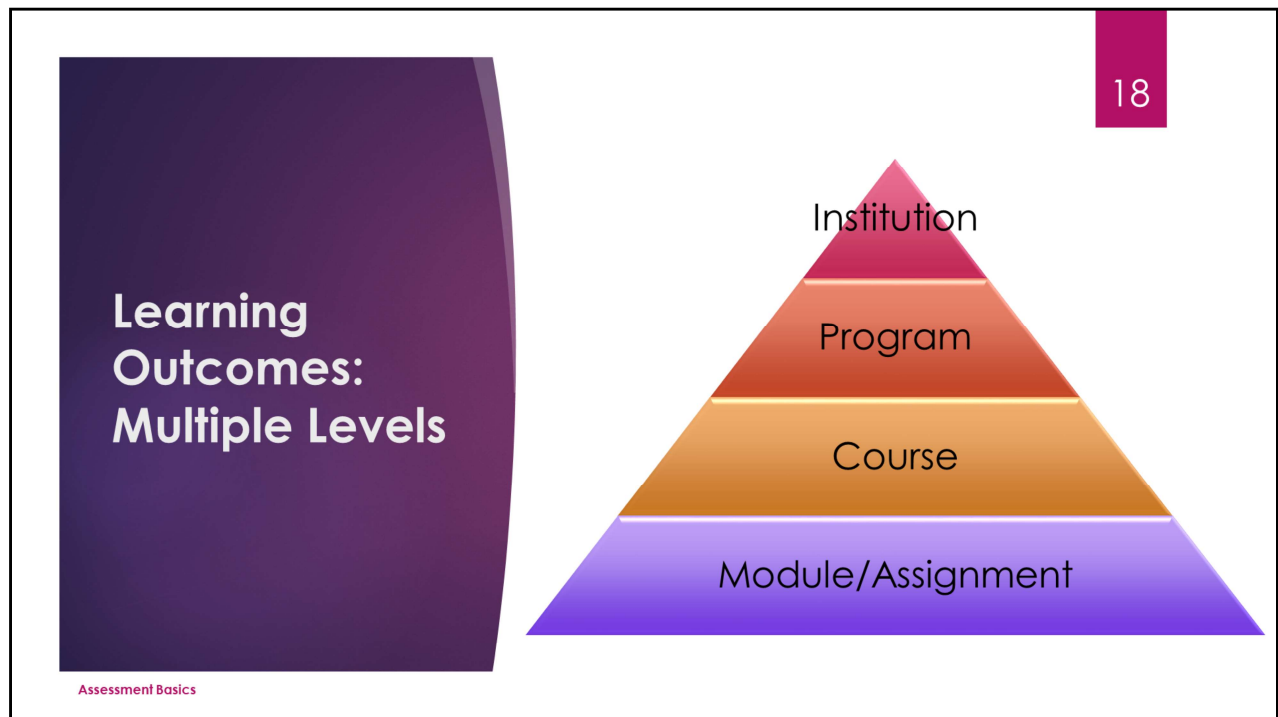



- Ethical decisions
- Leadership abilities
- Sensitivity to others
- Creativity
- Teamwork

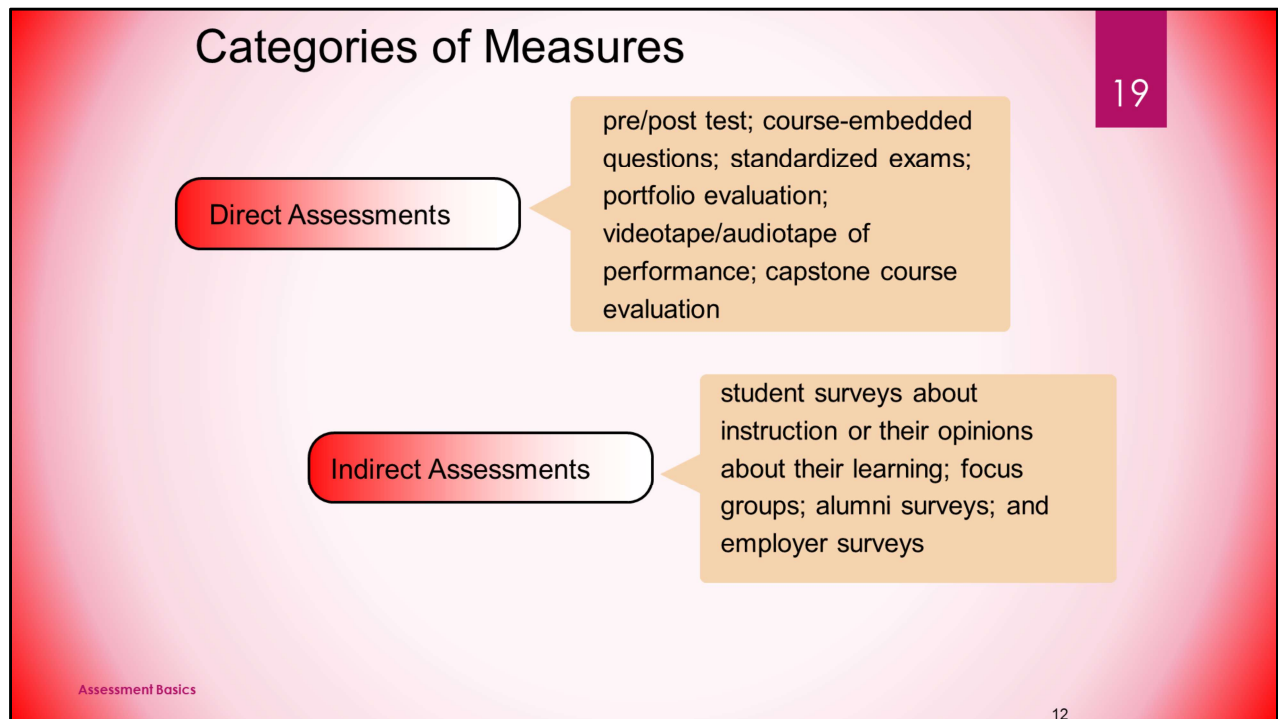
Assessment Basics

Equally important is the development and assessment of professional dispositions. This is reflected in DQP as well as in Bloom's affective domain. Dispositions refer to the type of graduate desired of your program. Aspects to develop and assess include:

- Ethical decisions
- Leadership abilities
- Sensitivity to others
- Creativity
- Teamwork



Learning Outcomes can be at different levels, from institution to module level within a course. It is important to consider whether LOs are aligned among the multiple levels. From the bottom, are the Module LOs aligned with CLOs, are the CLOs supporting PLOs, and etc.



Types of assessments:

(Click) What would we mean by Direct Assessment?

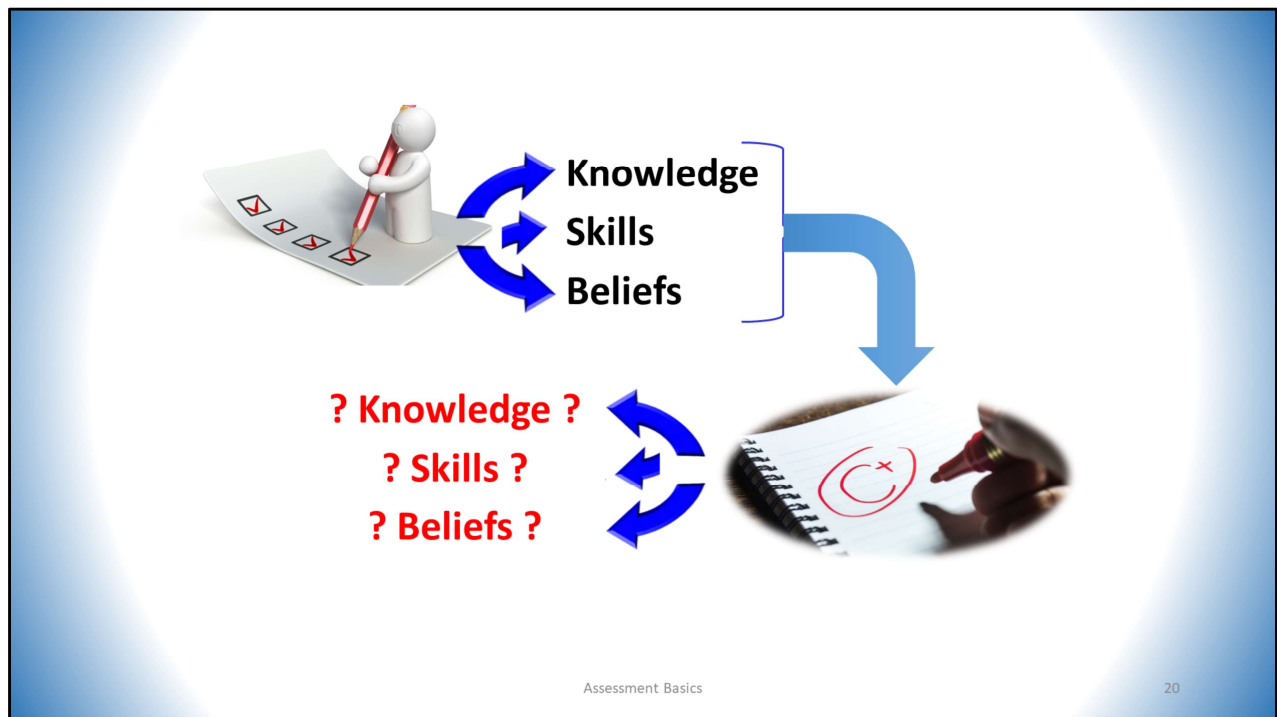
(Click) (Click) Examples are: pre/post test; course-embedded questions; standardized exams; portfolio evaluation; videotape/audiotape of performance; capstone course evaluation.

(Click) (Click) Then what would an Indirect measure be:

opinions and thoughts student learning, (Click) such as student surveys about instruction; focus groups; alumni surveys; and employer surveys.

Most important: assessment reflects the way students authentically demonstrate the knowledge/skill described of an outcome.

Outcome and possible assessments (Share/Discuss)

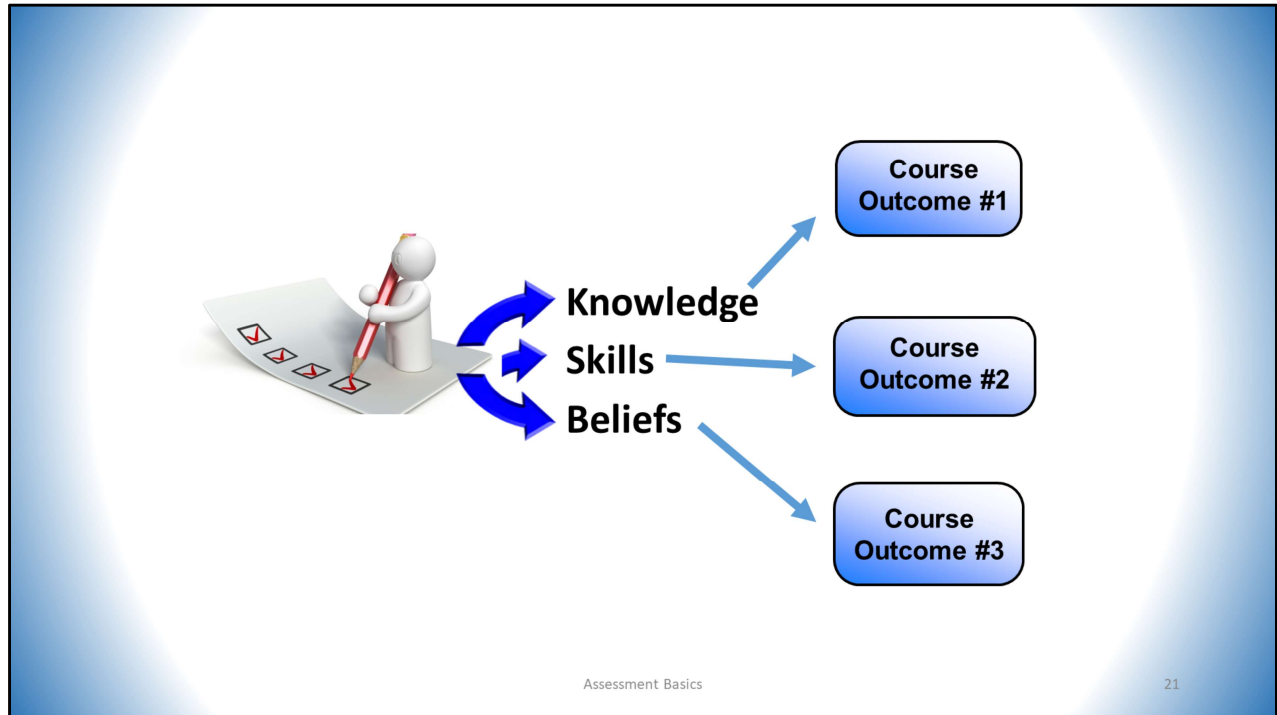


Another construct that promotes a Culture of Assessment is an understanding that traditional grading processes do not necessarily reflect effective data for outcomes assessment.

Traditionally (**click**) assignments often include a variety of disciplinary focused (**click**) knowledge, skills, and attitudes or beliefs. So it is important to recognize that nearly all assignments are designed for students to demonstrate learning of more than one learning outcome.

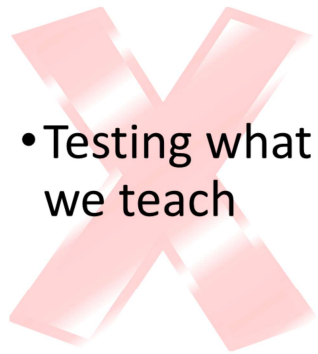
When deciding an assignment grade, we average the achievement in these learning areas into (**click**) one average score we call an assignment grade. (**click**) Summative assessment scores do not provide sufficient information to identify qualities

of learning specific to each outcome.

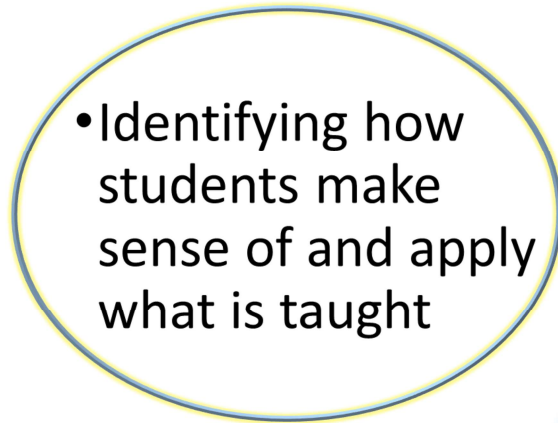


Now consider if the assessment that is assessing multiple learning outcomes identify qualities of learning for each outcome beyond the average used in a course grade. Then there will be more information that can guide improved learning. This is the intent of learning assessment.

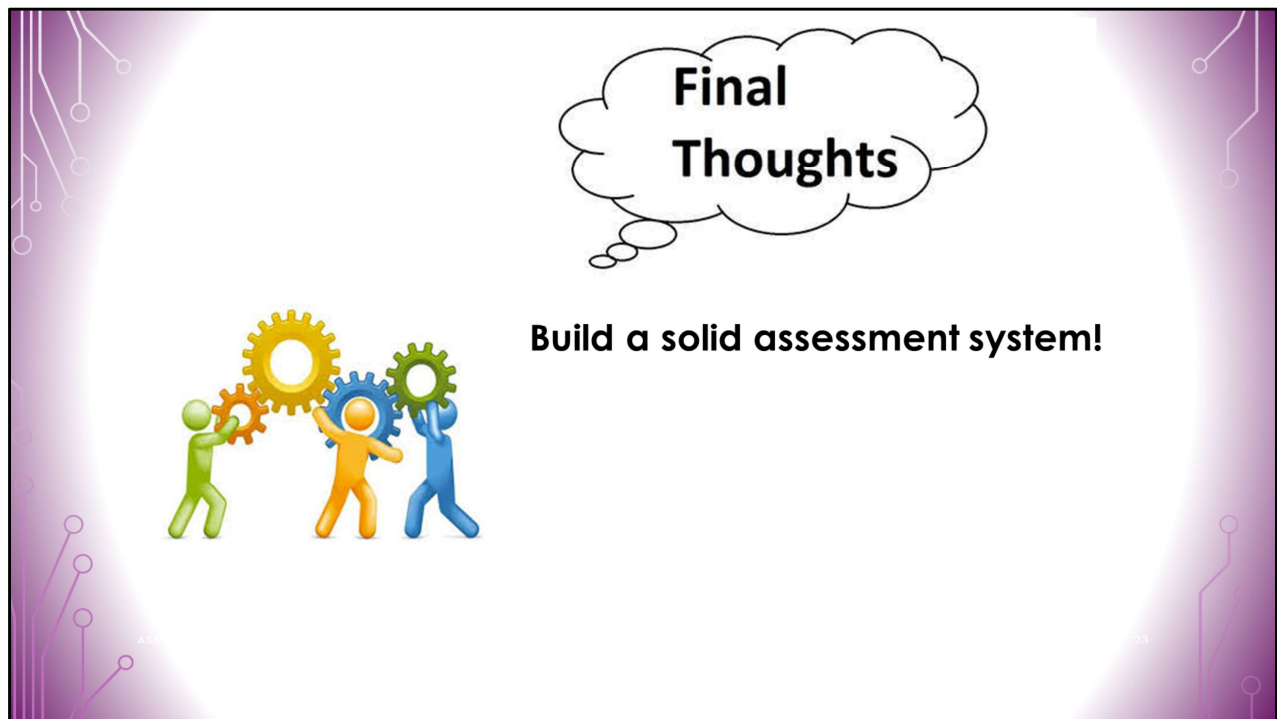
Focus of Assessment



- Testing what we teach

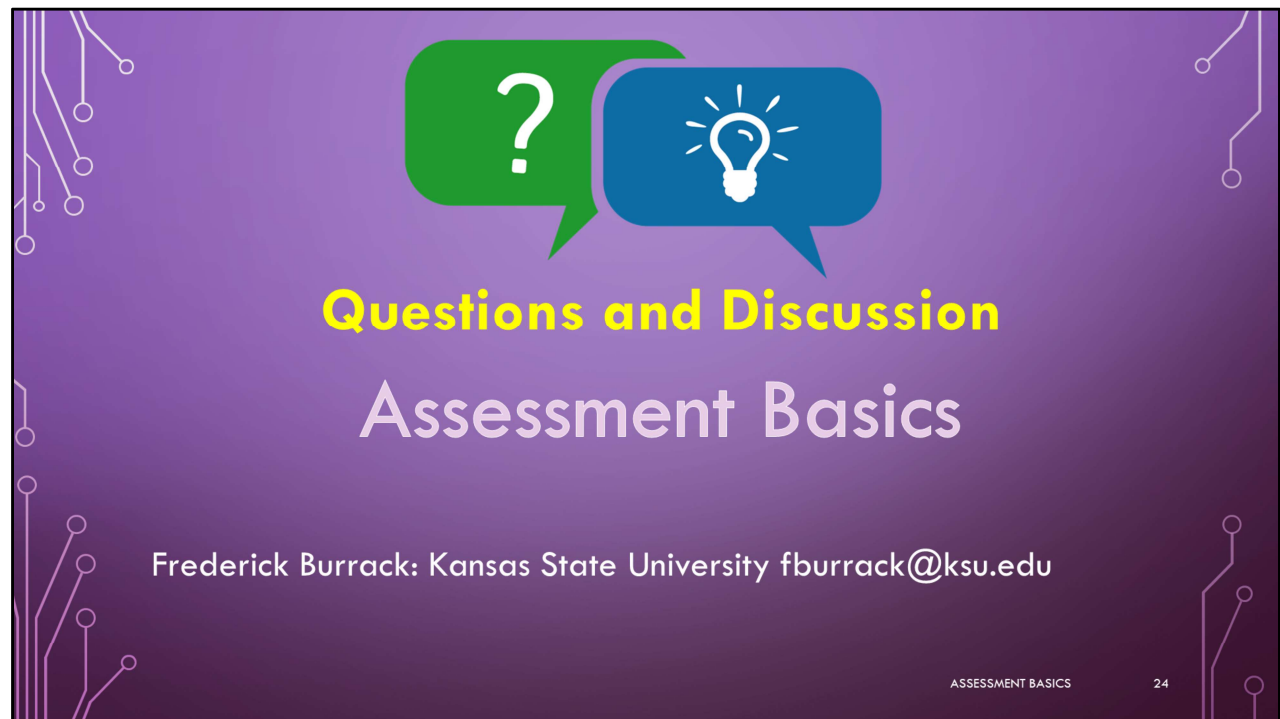


- Identifying how students make sense of and apply what is taught



I can share tips of how to having director of assessment be at your corner and how asking assistance and planning ahead for your program assessment strategies that could actually benefit for all instead of just having done because of compliance. One thing I would definitely consider and one thing I will stay away when it comes to handling assessment.

We talked about learning outcomes, direct and indirect assessment approaches. With all of this information, we would like to empower you to build assessment leadership at your campus, more specifically leading the effort/initiative to create a solid and sustainable assessment system that empowers your faculty and staff. If you have a University/college director of assessment, it is great – work with him or her closely to get it accomplished. If not, hire one! However, if you don't have the budget, you will need to assemble a team that can help you design a good assessment system in which your faculty can make significant contribution. Assessment truly takes a village. You, as the chairperson, will need to get the village together.



Questions and Discussion

Assessment Basics

Frederick Burrack: Kansas State University fburrack@ksu.edu

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Questions and discussion