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Developing Relevant and Measureable Student Learning Outcomes

A Roadmap for College Professors

Carlos E. Cuéllar, Ph.D.
Director of Institutional Assessment
The University of Texas Rio Grande Valley

Intro

Faculty are experts in their field/discipline, but not all faculty are expert educators

Expert or not, we could always reflect on what we do in the classroom or program to ***be more effective***

A good place to focus on is **Student Learning Outcomes (SLOs)**.

Presentation Overview

1

Define and
Identify Student
Learning
Outcomes (SLOs)

2

Explain why SLOs
are relevant for
teaching/learning
effectiveness

3

Create and
Express relevant
and measurable
SLOs.

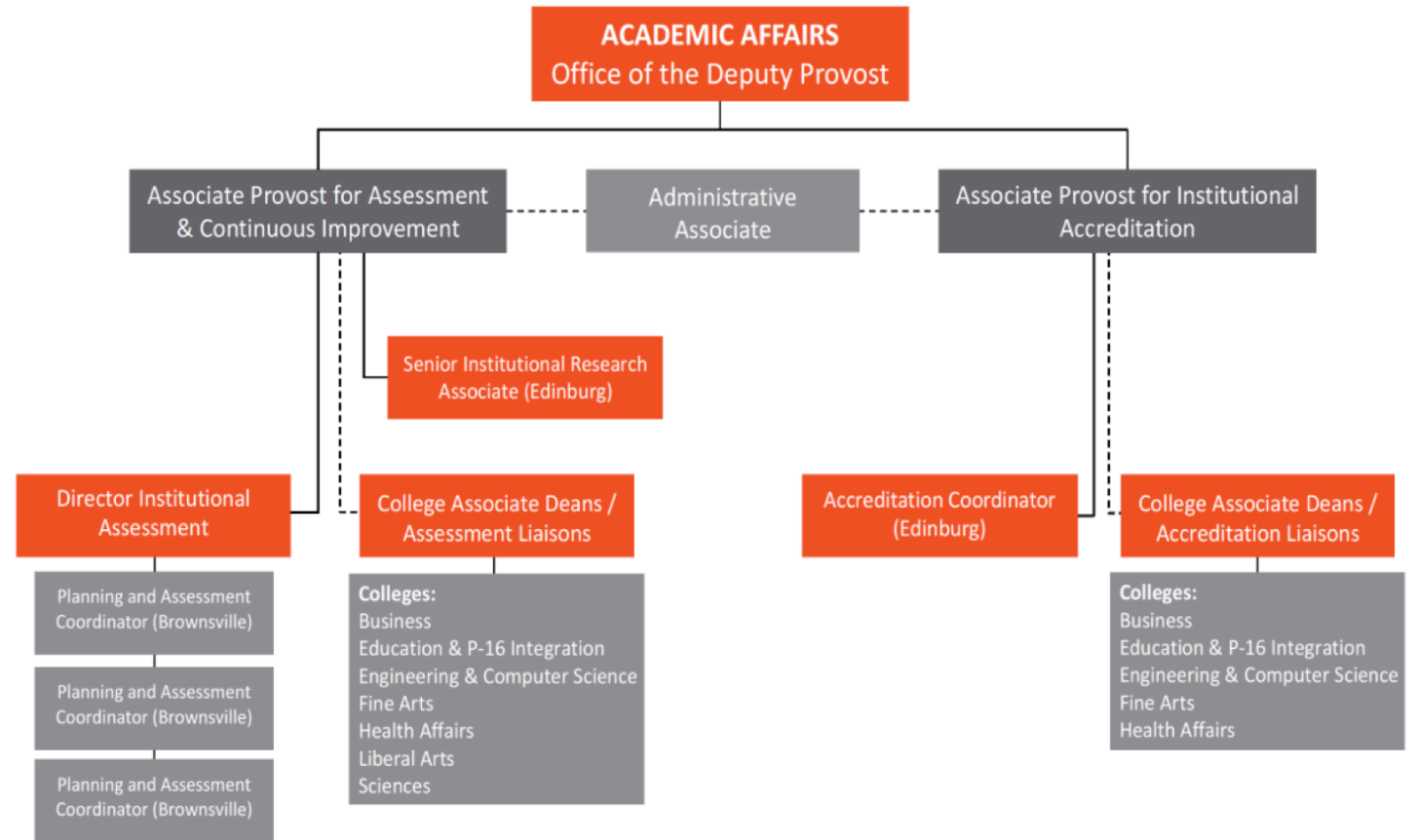
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Evaluate SLOs
using a simple
checklist.

About Us

Office of Academic and Institutional Excellence (formerly Office of Accreditation and Assessment)

- Stewards of institutional assessment reporting process and schedule for SACSCOC reaffirmation
 - Program assessment (academic majors)
 - Student service unit assessment
 - Administrative service unit assessment (departments)
- Support faculty and staff in...
 - Assessment Planning/Implementation
 - Artifact Collection
 - Data Analysis
 - Assessment Reporting
- For more info visit: www.utrgv.edu/oa
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SACSCOC's
Assessment Mandate
Require Institutions to:

- **Articulate** program student learning outcomes (SLOs)
- **Assess** program SLOs
- **Analyze** assessment results to identify strengths/weaknesses of student learning
- **Use results** to seek improvements to student learning in the program

Sifting Through the Terms of Learning Intentions

Competencies

Performance
Indicators

Expectations

Objectives

Student Learning Outcomes

Standards

Proficiencies

Goals

Domains

Why The Term: Student Learning Outcomes (SLOs)?

- Term is more **specific** than goals and can be applicable to any setting
 - Helps communicate learning expectations to students in a course, program, activity, project, etc.
- Term is **Student-centered**
 - Term is about students, not what professor, course, or program will do or cover
- Term is **Results-oriented**
 - SLOs are about the destination, rather than the actions taken to get there

Part 1)

Define SLOs

What are Student Learning Outcomes (SLOs)?

- ***SLOs are clear, concise, and measurable statements that identify the knowledge, skills, and attitudes that students will learn or develop by the end of a course, program, or experience.***
- SLOs are usually expressed as knowledge, skills, and attitudes.

Cognitive SLOs	Behavioral SLOs	Attitudinal SLOs
Information Recall	Communication	Tolerance
Knowledge Application	Artistic Performance	Grit

Which of the following statements do not fit the definition of a SLO?

- A. The course will review the organizational elements of American government.
- B. Students will respect the cultural beliefs and customs of clinical patients.
- C. Students will complete a minimum 6-page essay on a popular culture phenomenon of their choosing.
- D. Students will be able to identify the interactions between geography and other realms of knowledge such as, history, politics, economics, etc.

SLOs are not...

- ***An inventory of course requirements***
 - Submit work in a timely manner
 - Participate in class discussion
- ***Expectations for achieving course grades***
 - Correctly answer 80 percent of all questions on the final exam
 - Pass the oral comprehensive exam
- ***Teaching Goals / Strategies , or Course Topic Descriptions***
 - Provide timely feedback to students
 - Introduce the organizational structure of American government
 - Cover the legislative process in state legislatures

Part 2)

Explain why SLOs are relevant for teaching/learning effectiveness

Why are SLOs Relevant for Teaching and Learning?

Increase Achievement & Motivation:

If Students Know Expectations, it Increases Their Ability To Meet Them

Ambrose et al. (2010); Banta & Palomba (2015)

Enhance Information:

1st Step to Inform Faculty About Teaching Effectiveness (It's what best profs do!)

Angelo & Cross (1993); Bain (2004)

Facilitate Planning:

Guide Faculty in Designing Meaningful/Aligned Learning Experiences & Assessments

Angelo & Cross (1993); Menges & Weimer (1996)

Improve Accountability:

Students Can Tell Their Parents (& Employers) What They Learned

Menges & Weimer (1996)

Where Do SLOs Come From?

Can be Prescribed by:

- State Government/Agency
 - General Education
- Program Accreditor
 - Council for the Accreditation of Educator Preparation (CAEP)
 - Accreditation Board for Engineering and Technology (ABET)
 - Association to Advance Collegiate Schools of Business (AACSB)
- Colleges and Universities
 - University of Notre Dame
 - Cal Poly
 - U Denver

Can be Self-Generated by:

- Academic Programs (required by SACSCOC)
 - BA Political Science
 - BS Biology
- Course Faculty
 - POLS 2301 Intro to American Government
 - BOIL 1301 General Biology I
- Employers, other stakeholders
- Students
 - Program grads
 - Students enrolled in program or course

Part 3)

Create and Express
relevant and
measurable SLOs

The Best Place to Begin Developing Your SLOs is by Reflecting (Make them Relevant)

ANSWER THE FOLLOWING:

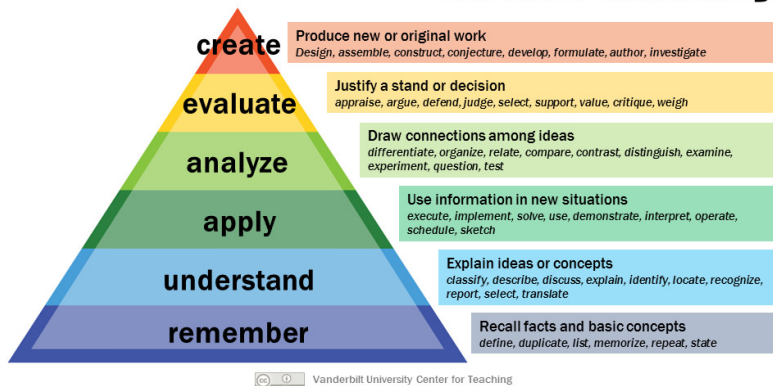
- What should students be able to do, learn, or value by the time they complete the program, course, or learning experience (project, activity)?
 - 1)
 - 2)
 - 3)
- Why are these outcomes important for students to learn?
- Do any of these outcomes align to disciplinary or professional standards?
- *Note: It's good practice to answer these questions with your colleagues*

Collaborate with Others to Think About the “Ideal” Program Graduate

- If you were to meet a student five years after they successfully completed your program:
 - What would that student tell you that he or she remembered in terms of facts and ideas?
 - What would that student tell you that he/she does within the field or discipline?
 - What attitudes or beliefs would that student express?

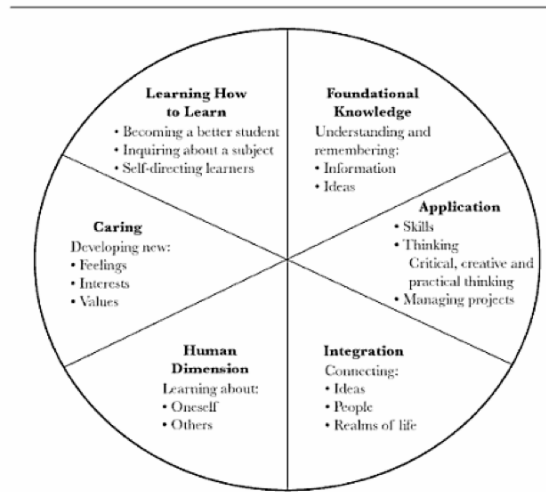
Use a Learning Framework As a Guide To Further Categorize and Develop Your SLOs

Bloom's Taxonomy



Bloom's Revised Taxonomy (Anderson and Krathwohl, 2001)

FIGURE 2.1. TAXONOMY OF SIGNIFICANT LEARNING.



Dee Fink's Taxonomy of Significant Learning (Fink, 2004)

Cluster Number and Name	Goals Included	Sum of Ratings Given to Goals in That Cluster	Divide C by This Number	Your Cluster Scores
I Higher-Order Thinking Skills	1-8	_____	8	_____
II Basic Academic Success Skills	9-17	_____	9	_____
III Discipline-Specific Knowledge and Skills	18-25	_____	8	_____
IV Liberal Arts and Academic Values	26-35	_____	10	_____
V Work and Career Preparation	36-43	_____	8	_____
VI Personal Development	44-52	_____	9	_____

Source: *Classroom Assessment Techniques*, by Thomas A. Angelo and K. Patricia Cross. Copyright © 1993. Permission to reproduce is hereby granted.

Teaching Goals Inventory (Angelo and Cross, 1993)

Use Dee Fink's Taxonomy of Significant Learning To Generate SLOs

EXHIBIT 3.3. QUESTIONS FOR FORMULATING SIGNIFICANT LEARNING GOALS.

What impact do I want this course experience to have on students, that will still be there a year or more after the course is over?

FOUNDATIONAL KNOWLEDGE

- What key *information* (facts, terms, formula, concepts, relationships. . .) is important for students to *understand and remember* in the future?
- What key *ideas* or perspectives are important for students to understand in this course?

APPLICATION

- What kinds of *thinking* are important for students to learn here:
 - Critical thinking*, in which students analyze and evaluate?
 - Creative thinking*, in which students imagine and create?
 - Practical thinking*, in which students solve problems and make decisions?
- What important *skills* do students need to learn?
- What *complex projects* do students need to learn how to manage?

INTEGRATION

- What *connections* (similarities and interactions) should students recognize and make. . .
 - Among ideas *within* this course?
 - Between the information, ideas, and perspectives in this course and those in other courses or areas?
 - Between material in this course and the students' own personal, social, and work life?

HUMAN DIMENSION

- What can or should students learn about *themselves*?
- What can or should students learn about understanding and interacting with *others*?

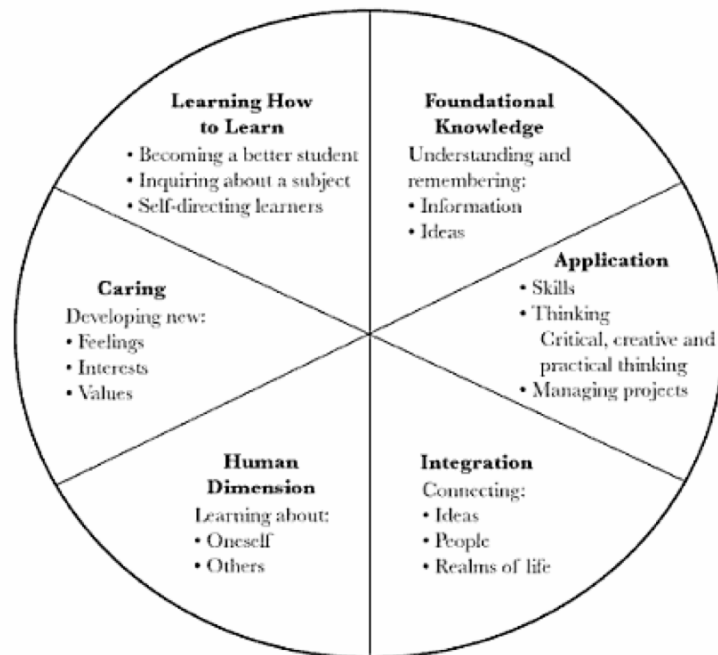
CARING

- What changes would you like to see, in what students *care* about, that is, any changes in their. . .
 - Feelings?
 - Interests?
 - Values?

LEARNING HOW TO LEARN

- What would you like for students to learn about. . .
 - How to be a good student* in a course like this?
 - How to engage in inquiry and construct knowledge* with this subject matter?
 - How to become a self-directing learner* relative to this subject? That is, have a *learning agenda* of what else they need and want to learn and a *plan* for learning it.

FIGURE 2.1. TAXONOMY OF SIGNIFICANT LEARNING.



Source: Fink, L. Dee. *Creating significant learning experiences: An integrated approach to designing college courses*. John Wiley & Sons, 2004.

Using Bloom's Revised Taxonomy to Create Cognitive SLOs

1. Review and select cognitive process dimension for your SLOs (**Hint: Read the description**)
2. Cross-reference your SLOs with the list of <<action verbs>> associated with their corresponding cognitive levels (**Hint: Pick verb that exemplifies what you want students to demonstrate**)
3. Write the SLOs appropriate to the course, program, or learning experience (**Hint: Tailor cognitive process to course content or discipline**)

See handout for more info on using Bloom's Revised Taxonomy

Example of Course SLO: <<Explain>> the foundational values and central ideas of American government.

Table 3
Structure of the Cognitive Process
Dimension of the Revised Taxonomy

1.0 Remember – Retrieving relevant knowledge from long-term memory.
1.1 Recognizing
1.2 Recalling
2.0 Understand – Determining the meaning of instructional messages, including oral, written, and graphic communication.
2.1 Interpreting
2.2 Exemplifying
2.3 Classifying
2.4 Summarizing
2.5 Inferring
2.6 Comparing
2.7 Explaining
3.0 Apply – Carrying out or using a procedure in a given situation.
3.1 Executing
3.2 Implementing
4.0 Analyze – Breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose.
4.1 Differentiating
4.2 Organizing
4.3 Attributing
5.0 Evaluate – Making judgments based on criteria and standards.
5.1 Checking
5.2 Critiquing
6.0 Create – Putting elements together to form a novel, coherent whole or make an original product.
6.1 Generating
6.2 Planning
6.3 Producing

The Importance of Action Verbs

- Action verbs result in behavior that can be observed and measured

Table 1. The cognitive processes dimension — categories, cognitive processes (and alternative names)

lower order thinking skills → higher order thinking skills

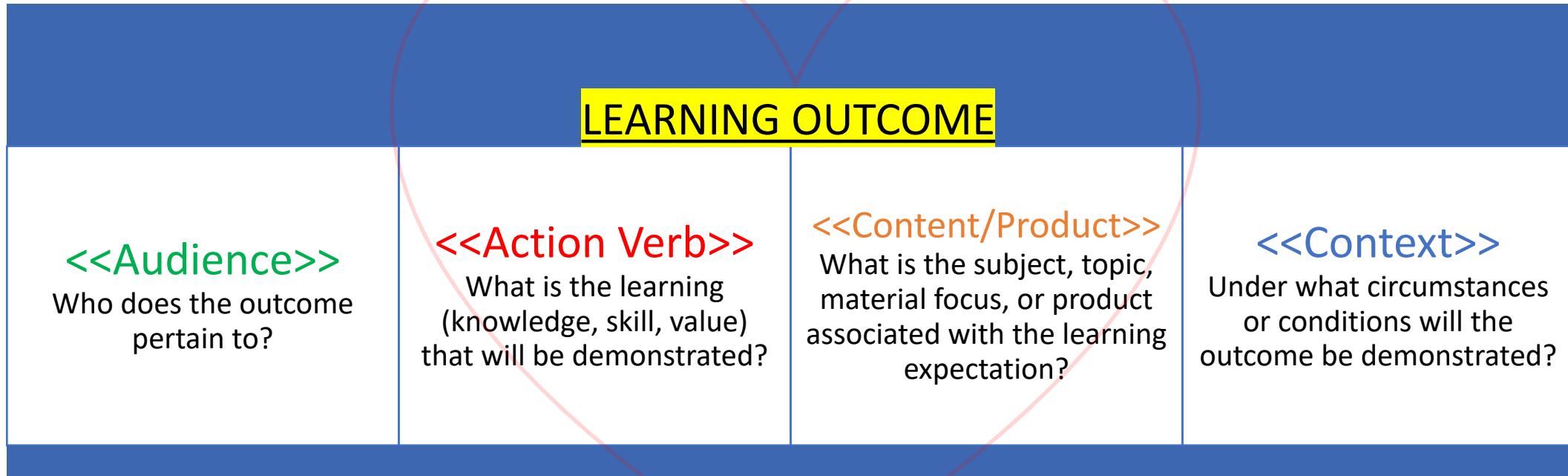
remember	understand	apply	analyze	evaluate	create
recognizing (identifying)	interpreting (clarifying, paraphrasing, representing, translating)	executing (carrying out)	differentiating (discriminating, distinguishing, focusing, selecting)	checking (coordinating, detecting, monitoring, testing)	generating (hypothesizing)
recalling (retrieving)	exemplifying (illustrating, instantiating)	implementing (using)	organizing (finding coherence, integrating, outlining, parsing, structuring)	critiquing (judging)	planning (designing)
	classifying (categorizing, subsuming)		attributing (deconstructing)		producing (construct)
	summarizing (abstracting, generalizing)				
	inferring (concluding, extrapolating, interpolating, predicting)				
	comparing (contrasting, mapping, matching)				
	explaining (constructing models)				

Avoid unclear verbs about internal processes; they are difficult to measure:

- Appreciate
- Think about
- Become familiar with
- Know
- Understand
- Gain awareness of

Source: Suskie (2009)

Components of SLO Statements



Use This Worksheet To Construct Your SLOs

Audience	Action Verb	Content/Product	Context
Students in the course will	<<analyze >>	<<arguments>>	about immigration politics and policy.
Program graduates will effectively	<<apply>> the	<<qualities of professional writing>>	including, sentence conciseness, readability, clarity, accuracy, organization, and coherence.
Students that complete the program will be able to	<<frame>>	clear << thesis statements>>	for complex research questions or problems in the discipline.
Graduate Students will	<<construct>>	<<research questions>>	that can be investigated using primary archival resources.

Note: See handout

Part 4)

Evaluate
strengths/weaknesses
of SLOs

Characteristics of Strong SLOs

- **Specific**: SLOs are specific and stated in clear and definitive terms
- **Measurable**: SLOs are observable and measurable (action verbs). Activities and assessments can be created to facilitate learning and evaluation.
- **Ambitious/Attainable**: SLOs are reasonable for students to achieve, yet sufficiently challenging to promote growth.
- **Results-Oriented**: SLOs identify knowledge, skills, values that students will achieve or develop, but are not teaching or academic processes to get there.
- **Tailored**: SLO are a good fit for the course, program, or learning experience.

SLO Checklist To Evaluate SLOs

Is the SLO specific and stated in clear, definitive terms?	Yes	No
Is the SLO feasible to collect reliable, accurate data?	Yes	No
Is the SLO ambitious, yet reasonable for students to achieve?	Yes	No
Is the SLO results-oriented by focusing on expected student behaviors (knowledge, skills, values), not on teaching or academic processes?	Yes	No
Is the SLO a good fit for the course, program, or learning experience?	Yes	No

Which are the strongest SLO statements?

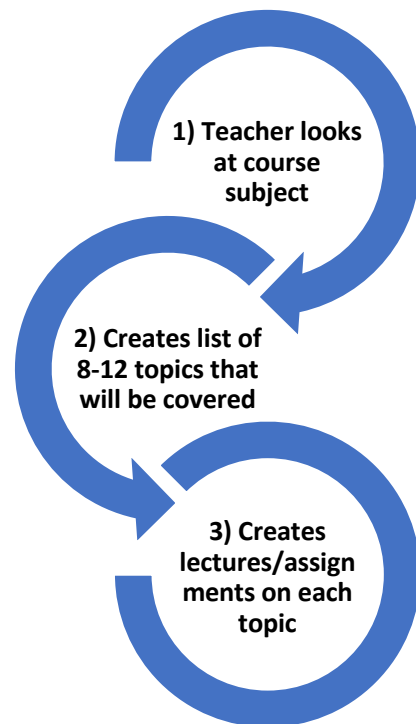
- A. Students will appreciate the benefits of exercise science
- B. Students will complete an exam on how the science of exercise affects stress
- C. Students will explain how the science of exercise affects stress by citing the recent literature.
- D. Students will deconstruct stress data to evaluate the benefits of exercise science.

Putting
SLOs into
Perspective

Why are SLOs
fundamental for
integrating teaching,
learning, &
assessment?

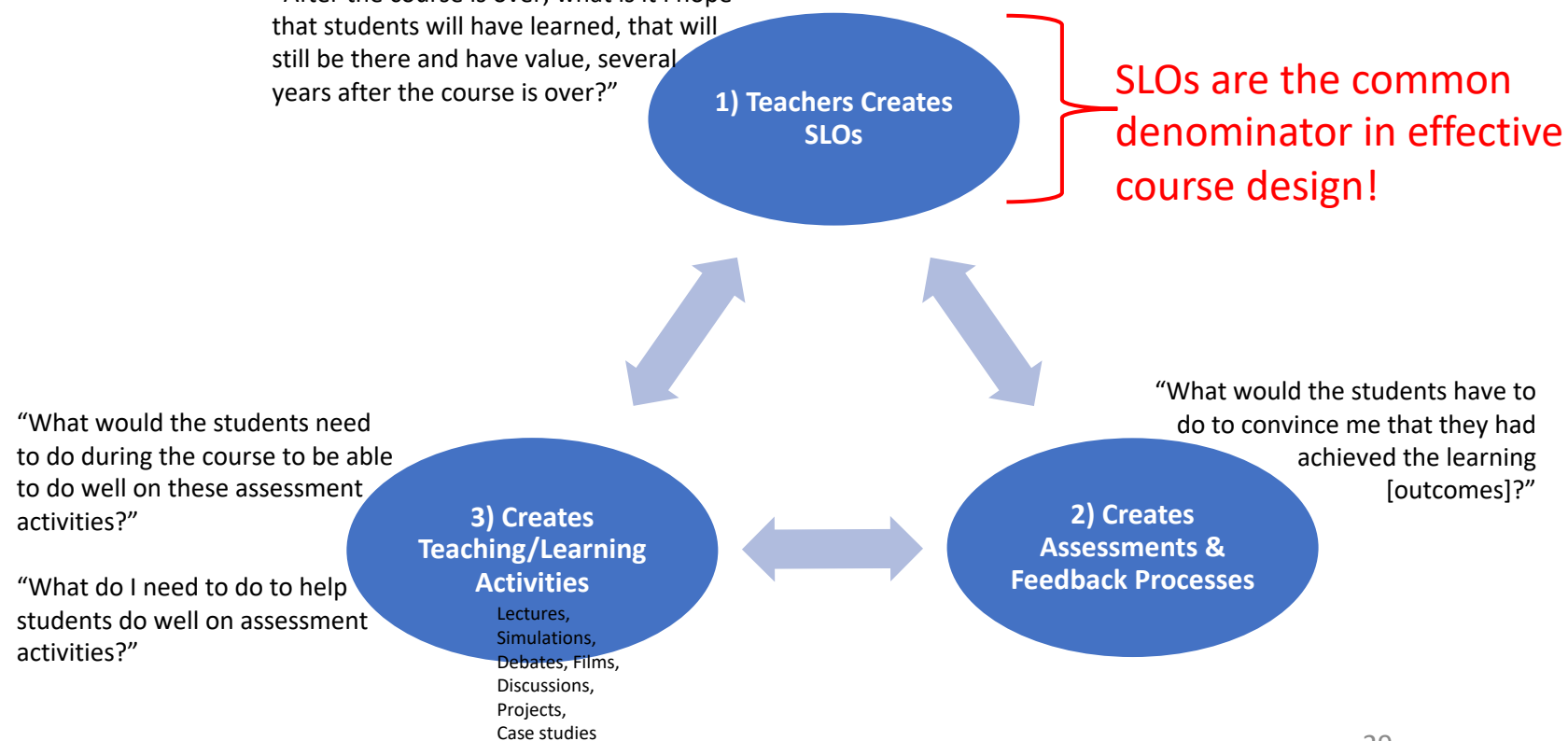
Instructional Design Approaches

“List of Topics” Approach (content-centered):



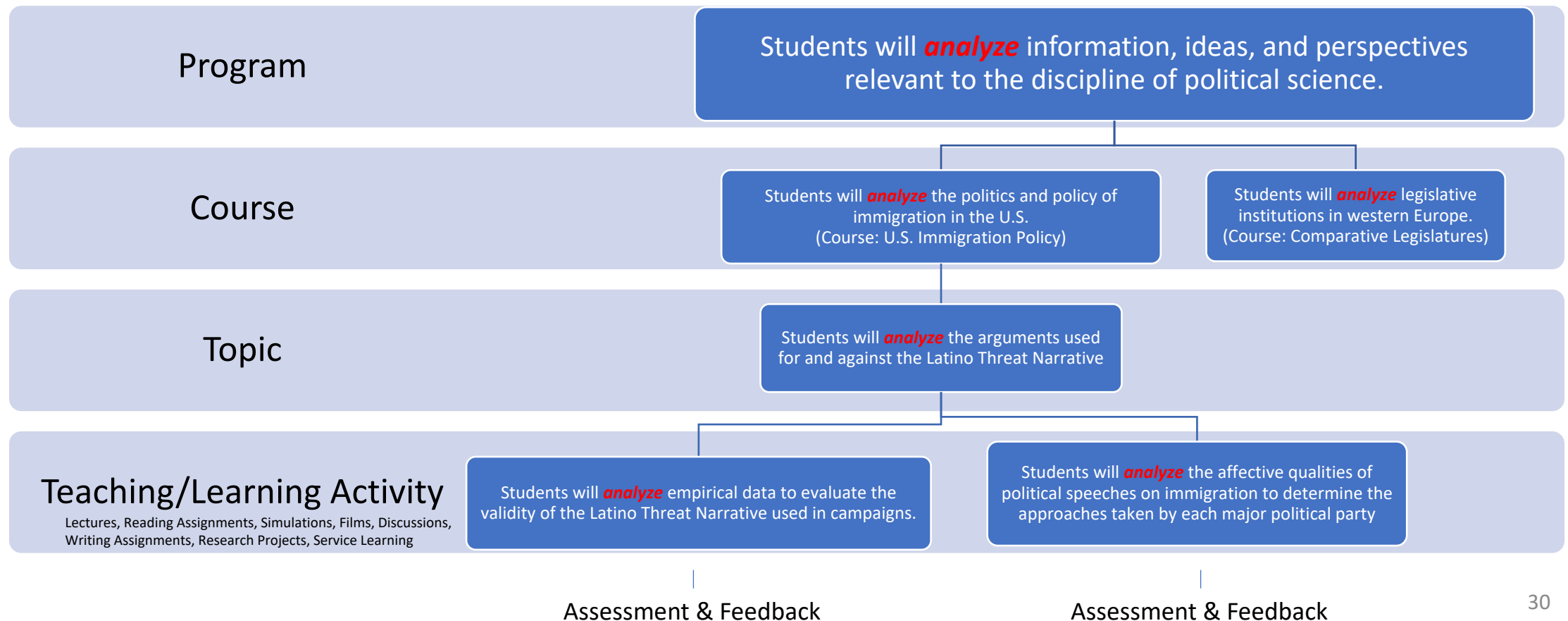
Backward Design / Integrated Approach (learner-centered):

“After the course is over, what is it I hope that students will have learned, that will still be there and have value, several years after the course is over?”



SLOs can align learning experiences with learning expectations across multiple levels

Coordinating Board / Accreditor / College / Discipline Standards



To Recap, Workshop participants will be able to...

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Define and
Identify Student
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Outcomes (SLOs)

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Thanks!

Q & A

References

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