What Goes Around Comes Around:

Continuous Improvement and Impact Measurement Using the Assessment Cycle

Engaged Scholarship Consortium

2015 Conference

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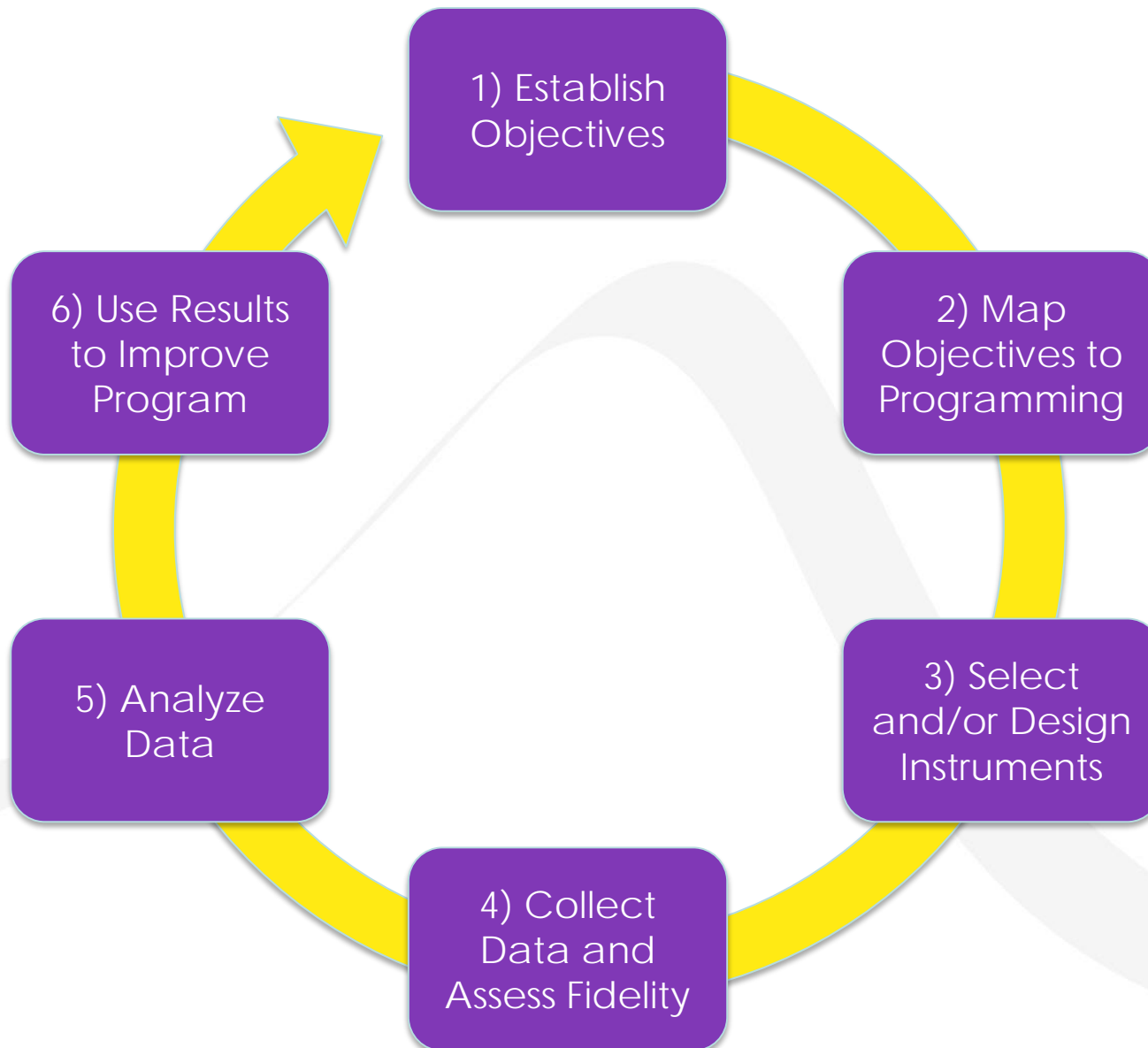
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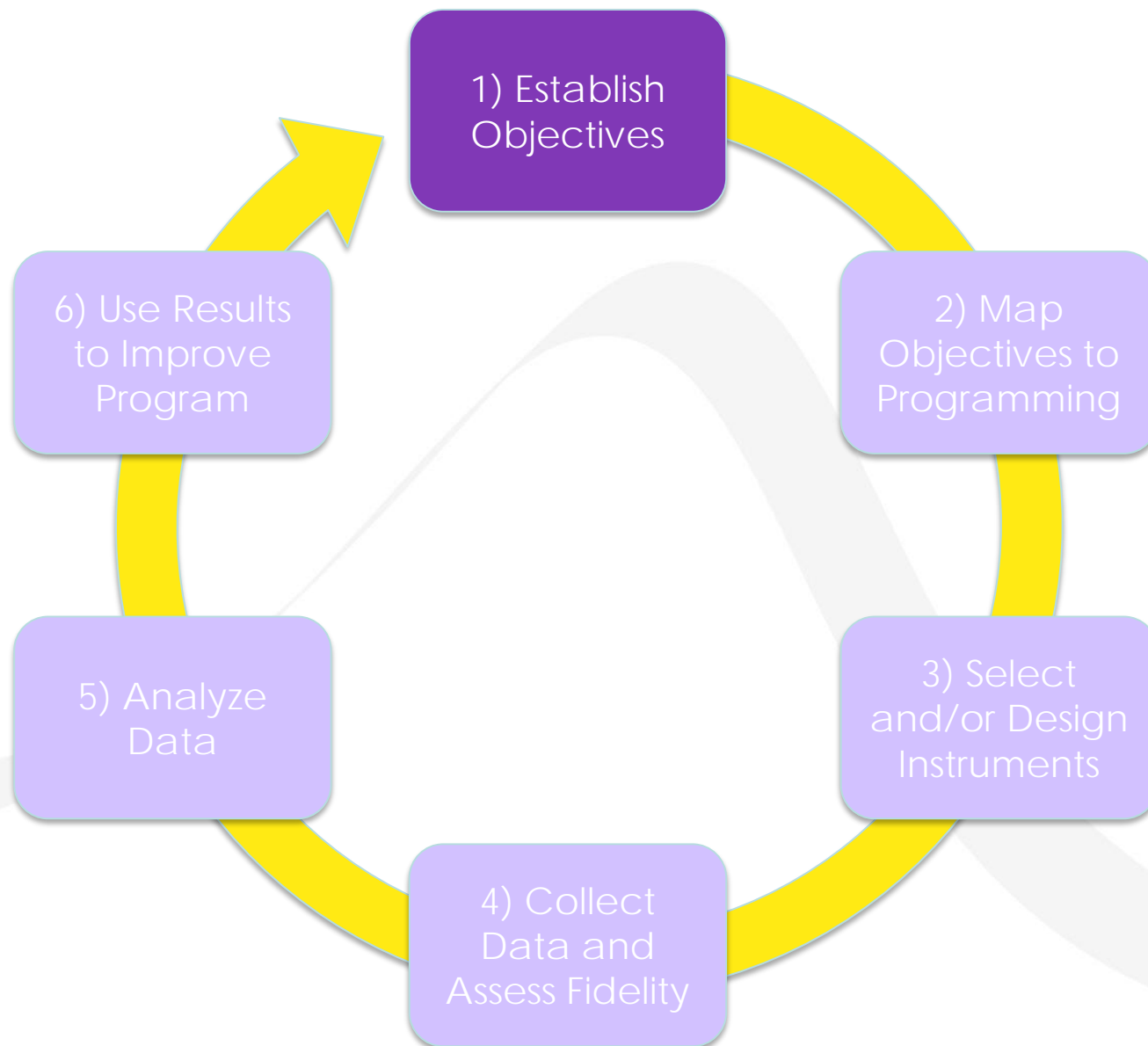
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Why Do Assessment?

Intrinsic Reasons

- To improve the effectiveness of a program, specifically that students are *learning*

Extrinsic Reasons

- To be accountable to stakeholders
- To justify programmatic changes and resource allocation

1) Establish Objectives

2) Map Objectives to Programming

3) Select and/or Design Instruments

4) Collect Data and Assess Fidelity

5) Analyze Data

6) Use Results to Improve Program

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Writing Program Objectives

Establishing Objectives

- <u>Goals –</u> broad expectations of programming

- <u>Objectives –</u> specifics of how goals are met
    - Observable
    - Measurable

- Objectives identify what individuals should be able to *know*, *think*, and *do* as a result of experiencing the program.

Establishing Objectives

- Know, think, and do

  - Cognitive
    - Demonstrating knowledge and/or skills

  - Non-cognitive
    - Expressing attitudes, beliefs, and/or values

Establishing Objectives

- <u>Workshop Goal</u>:

  ESC assessment workshop attendees should be able to begin the assessment process in their own programs upon leaving the workshop.

- <u>Objectives:</u> Upon completing the workshop, attendees…
  - will be able to identify the 6 steps of the assessment cycle.
  - will be able to write measurable learning objectives.

Establishing Objectives

- <u>Example Objectives</u>:
  - will be able to identify the 6 steps of the assessment cycle.
  - will be able to write measurable learning objectives.

- Notice
  - observable: identify, write, report
  - measurable: 6 steps, are the objectives attendees wrote measurable or not?

- Several methods – how do we start?

Establishing Objectives

- ABCD Method
  - A = Audience
    - What group of people are you assessing?
  - B = Behavior
    - What should individuals be able to do/demonstrate?
  - C = Conditions
    - Under what circumstances do you expect this behavior?
  - D = Degree
    - How well must the behavior be performed? (Not always applicable)

Establishing Objectives

- ABCD Example 1:
  - Audience = ESC workshop attendees
  - Behavior = Identify steps of assessment cycle
  - Condition = Upon completing workshop
  - Degree = All 6 steps

- Objective:
  - Upon completing the workshop, attendees will be able to identify the 6 steps of the assessment cycle.

Establishing Objectives

- ABCD Example 2:
  - Audience =
  - Behavior =
  - Condition =
  - Degree =

- Objective:
  - Upon completing the workshop, attendees will be able to write measurable learning objectives.

Establishing Objectives

- ABCD Example 2:
  - Audience = ESC workshop attendees
  - Behavior = write measurable learning objectives
  - Condition = upon completing the workshop
  - Degree = N/A

- Objective:
  - Upon completing the workshop, attendees will be able to write measurable learning objectives.

Establishing Objectives

- ABCD Example 3:
  - Audience = incoming international freshmen
  - Behavior = identify 4 academic resources at JMU
  - Condition = after completing Transitions (an orientation program)
  - Degree = 90%

- Objective:

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Establishing Objectives

- ABCD Example 3:
  - Audience = incoming international freshmen
  - Behavior = identify 4 academic resources at JMU
  - Condition = through participating in Transitions (an orientation program)
  - Degree = 90%

- Objective:

  Through participating in Transitions, 90% of the new international students will be able to identify 4 academic resources at JMU.

Establishing Objectives

- ABCD Example 4:
  - Audience = sophomores
  - Behavior = explain why an individual may hold a perspective different from their own
  - Condition = completing their sociocultural general education course requirement
  - Degree = N/A

- Objective:

Establishing Objectives

- ABCD Example 4:
  - Audience = sophomores
  - Behavior = explain why an individual may hold a perspective different from their own
  - Condition = completing their sociocultural general education course requirement
  - Degree = N/A

- Objective:

  After completing the sociocultural general education course requirement, JMU sophomores will be able to explain why an individual may hold a perspective that differs from their own.

Establishing Objectives

- Bloom's Taxonomy
  - Classify complexity of objectives

Less Complex

More Complex

Level	Description
1. Knowledge	Recognize or identify facts, terms, principles
2. Comprehension	Explain or summarize in own words
3. Application	Apply learned material to new situations
4. Analysis	Understand organizational structure of material; draw comparisons and relationships between elements
5. Synthesis	Combine elements to form a new entity or structure
6. Evaluation	Make judgments about extent to which criteria are satisfied

Verbs for Objectives

Bloom's Level	Verbs
1. Knowledge	match, recognize, select, compute, define, label, name, describe
2. Comprehension	restate, elaborate, identify, explain, paraphrase, summarize
3. Application	give examples, apply, solve problems using, predict, demonstrate
4. Analysis	outline, draw a diagram, illustrate, discriminate, subdivide
5. Synthesis	compare, contrast, organize, generate, design, formulate
6. Evaluation	support, interpret, criticize, judge, critique, appraise

Verbs for Objectives

Non-cognitive	Verbs
Receiving	accept, acknowledge, follow, listen, observe, receive
Responding	agree, attempt, exhibit, display, reply, respond
Valuing	adopt, encourage, endorse, share, suggest, initiate
Organization	anticipate, collaborate, facilitate, establish, specify, lead

Establishing Objectives

- Things to keep in mind
  - Effortful, thoughtful process
    - Easy to go through MANY revisions
  - It takes time!
  - Now you know where to start

Writing Objectives: Activity!

Writing Objectives: Activity

- Provide students with knowledge about how to write resumes. ❌

- Graduating psychology students will show an increase in open-mindedness through a 10-point increase on the Open-Mindedness Inventory from when they completed the inventory as incoming first-year students. ✓

- Upon completion of the career and life planning course, undeclared students will be able to match 80% of JMU majors to appropriate career choices. ✓

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Writing Objectives: Activity

- Students will understand the elements of a good philosophical argument. ✗

- Students in the Introduction to College program will learn how to take better notes. ✗

- As a function of living on campus, residence hall freshman students will develop a greater sense of belonging to JMU compared to off-campus freshman students, as measured by the Sense of Belonging Scale. ✓
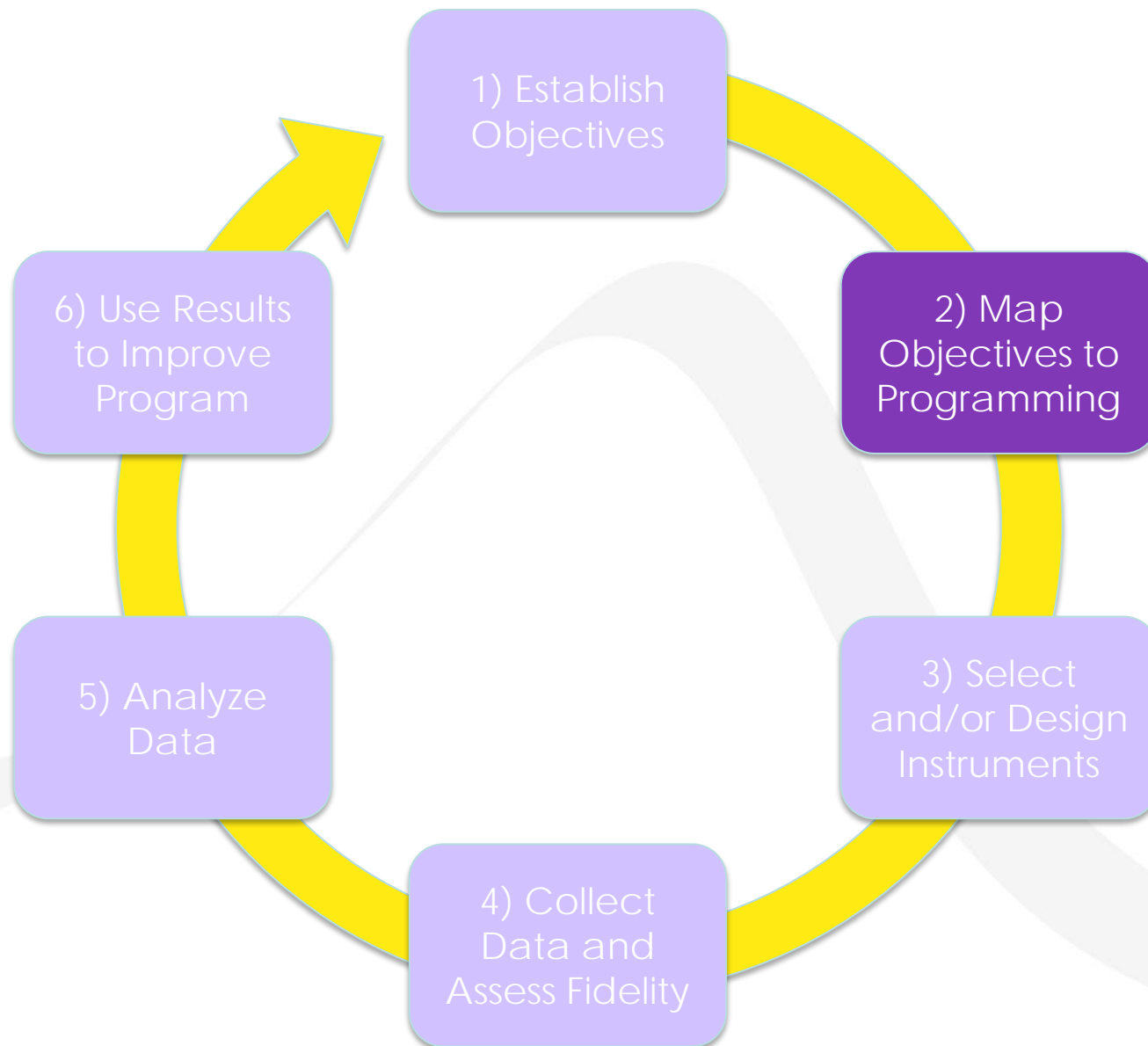
Mapping Objectives

- Clear mapping helps interpret results
- Each objective should map to at least one element of the program or curriculum
- Blueprint
  - Linking objectives to courses/activities in your curriculum
  - Be specific!
    - To what extent is the objective covered in that class?
    - What specific components of the activity or items on the test address the objective?

Mapping Objectives

Part II. Course/Learning Experience Mapping

Coverage of objective: 0 = No Coverage; 1 = Slight Coverage; 2 = Moderate Coverage; 3 = Major Coverage

	Objective 1 (Identification of 80s Components)	**Objective 2** (Research Methodology)	**Objective 3** (Writing Critically)	**Objective 4** (Oral Communication)
PCUL201 (Introduction to the 80s)	3	0	1	0
PCUL301 (80s Music)	3	0	1	2
PCUL302 (80s Fads)	3	0	1	2
PCUL303 (80s TV and Movies)	3	0	0	2
PCUL304 (80s Technology)	3	1	1	0

Mapping Objectives

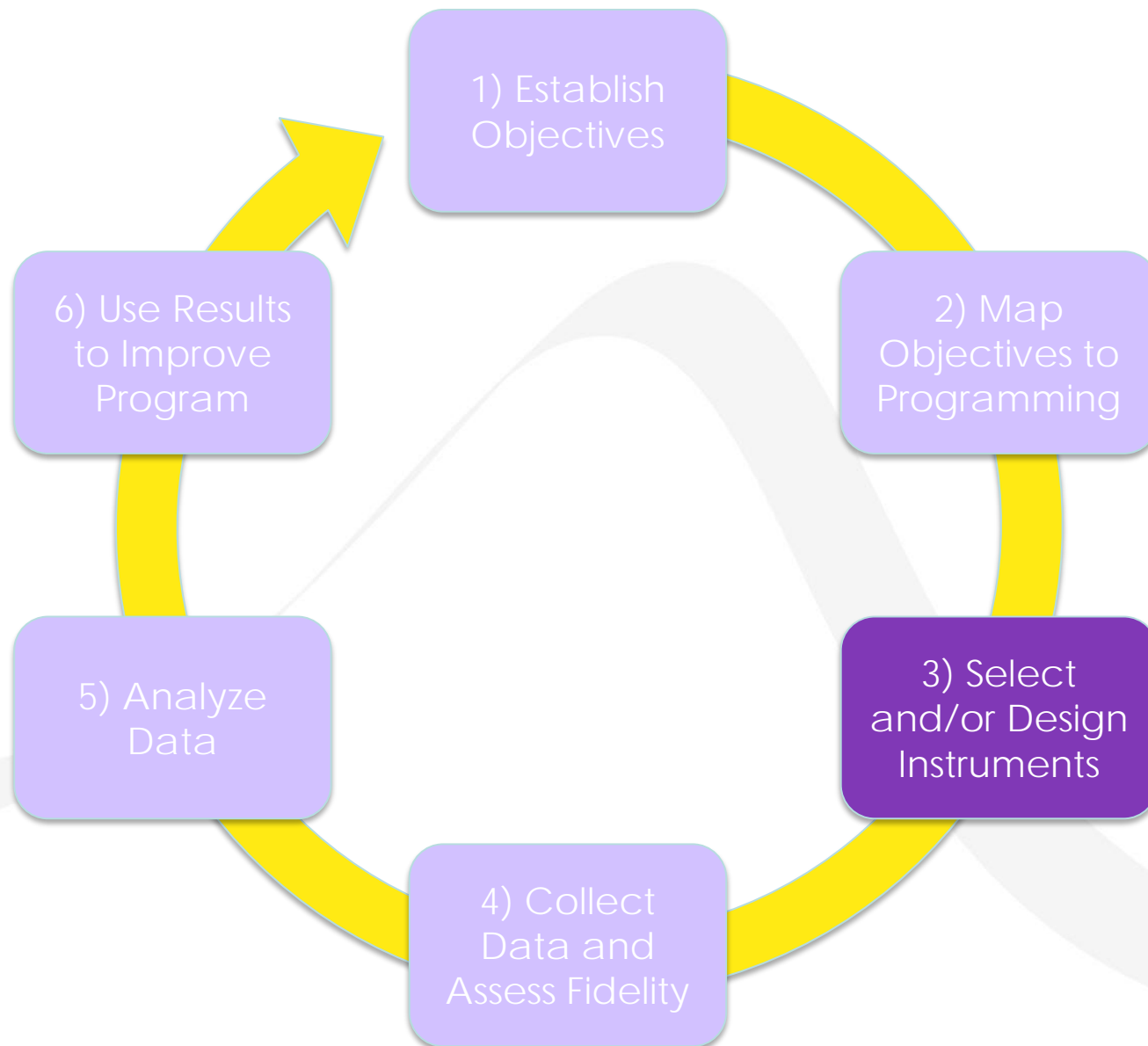| Objectives	Items	# of Items
1.1 Identify major trends of the 80s	7, 8, 18	3
1.2 Identify the factors that influenced each of the major trends	10, 16, 19, 20, 21, 28, 29	7
1.3 Explain how dimensions of 80s components are interrelated	11, 13, 25, 26, 30	5
		15
2.1 Recognize appropriate methodological approaches	14, 22, 27	3
2.2 Recognize and apply appropriate methodological approaches	1, 6	2
		8

Mapping Objectives: Activity!

Mapping Key

Objective Mapping Activity

Below is an objective/programming map for the (fictional) Literature and Cinema Program. Read the course descriptions and objectives, and determine which objectives map to which courses by placing an "X" in the appropriate cell.

Upon graduation, LTCN students will be able to...	LTCN 201	LTCN 301	LTCN 302	LTCN 303
Obj 1: articulate the similarities and differences between literary and cinematic themes.	X	X		
Obj 2: adequately express analyses of books, movies, and films in written form.			X	X
Obj 3: apply their knowledge of literary themes to any movie or film.			X	X
Obj 4: critically evaluate literature and cinema by writing reviews.			X	

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Selecting and/or Designing Instruments

Where do you start?

Two routes when you need an instrument

Find existing instrument

Develop a new instrument
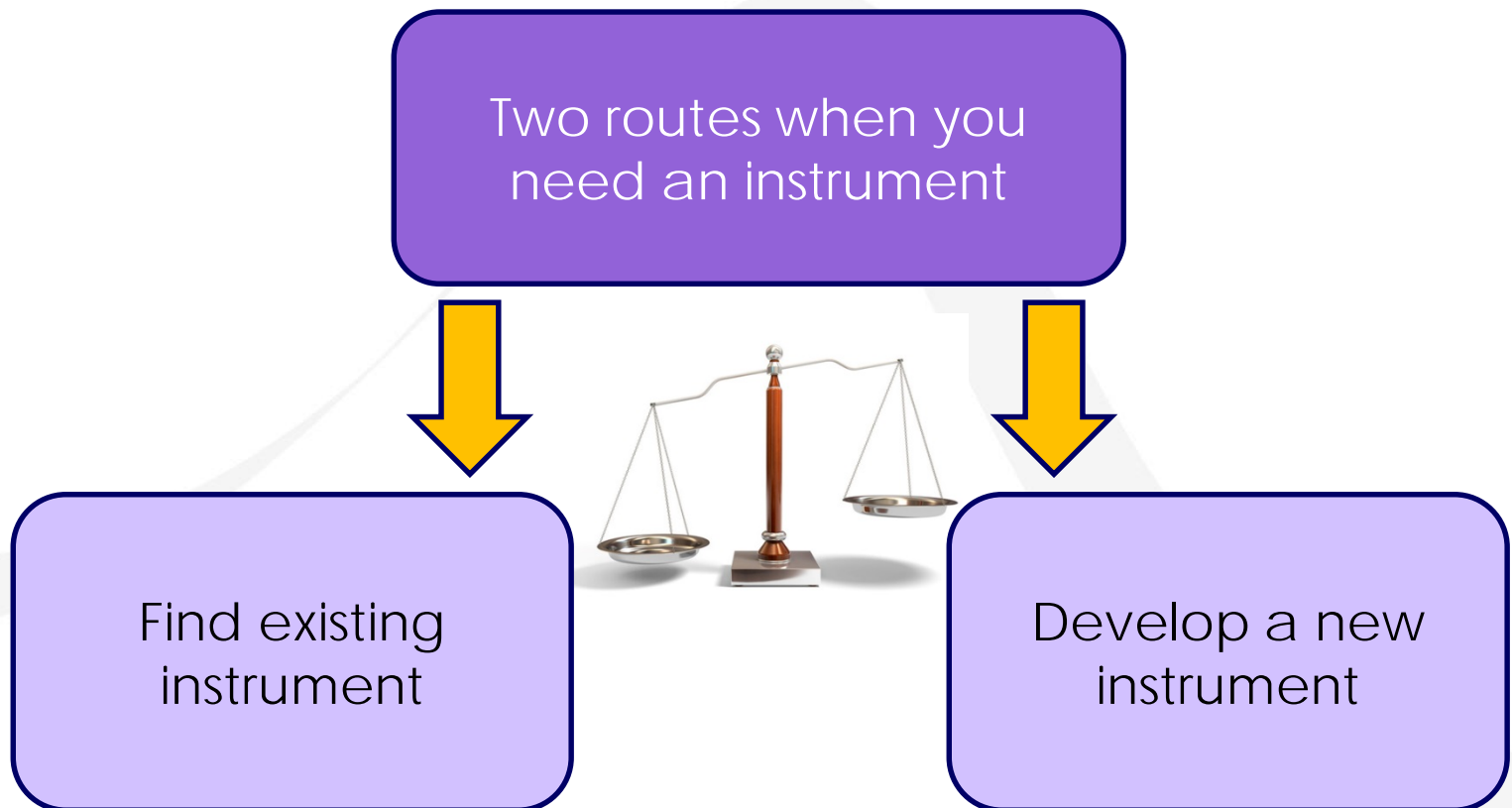
Selecting and/or Designing Instruments

- Many different types of "Instruments"
  - Rubrics
  - Questionnaires
  - Tests *(multiple-choice and open-ended)*
  - Behavioral Observations

- Difference between direct and indirect measures of learning

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Selecting and/or Designing Instruments

How do you know it's a good measure?

Reliab   alidity

Selecting and/or Designing Instruments

Existing Measure
- Pros:
  - Already created
  - Convenient
  - Evaluated
- Cons:
  - Not customized
  - May differ in theoretical orientation

New Measure
- Pros:
  - Strong alignment with objectives
- Cons:
  - Requires time
  - Requires resources

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Selecting and/or Designing Instruments
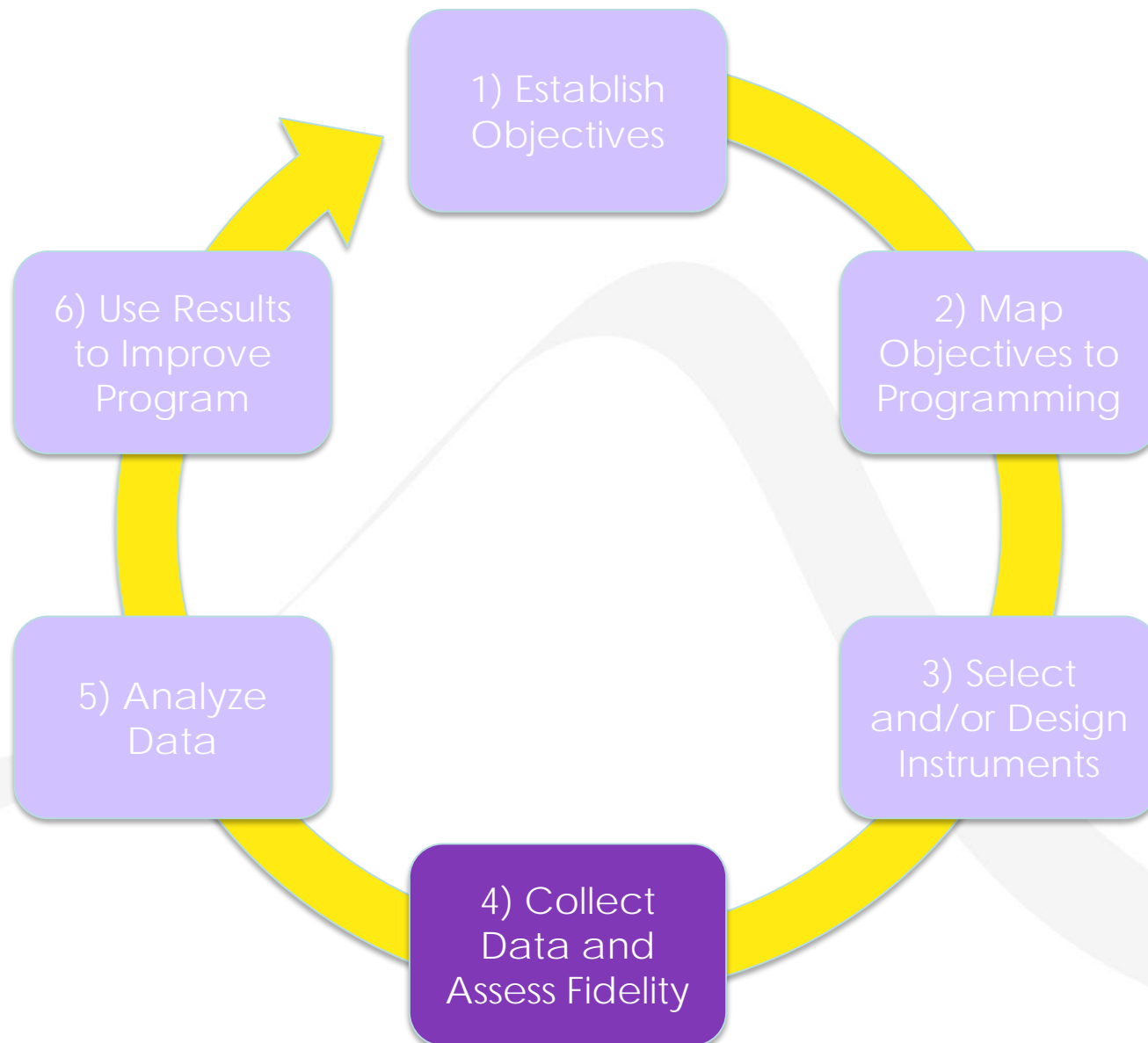
- Indirect Measures
  - Self-appraisals
  - May not be indicative of learning

    Ex: Students respond on a 5-point scale how much they feel they learned during a guest speaker presentation.

- Direct Measures
  - Direct appraisals
  - Provides stronger evidence of learning

    Ex: Students are rated on their written evaluation of 80s hair styles.

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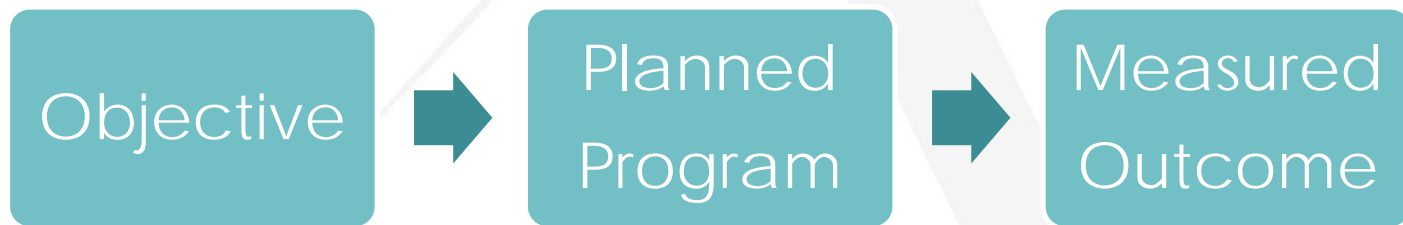
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Assessing Implementation Fidelity

- Does the programming that was *implemented* match the programming that was *planned*?

- Helps us better understand the effectiveness of our planned programing

- We don't know if our planned programming is or is not effective if it's not actually the programming our students receive.

Gerstner & Finney (2013)

Swain, Finney, & Gerstner (2013)

Assessing Implementation Fidelity
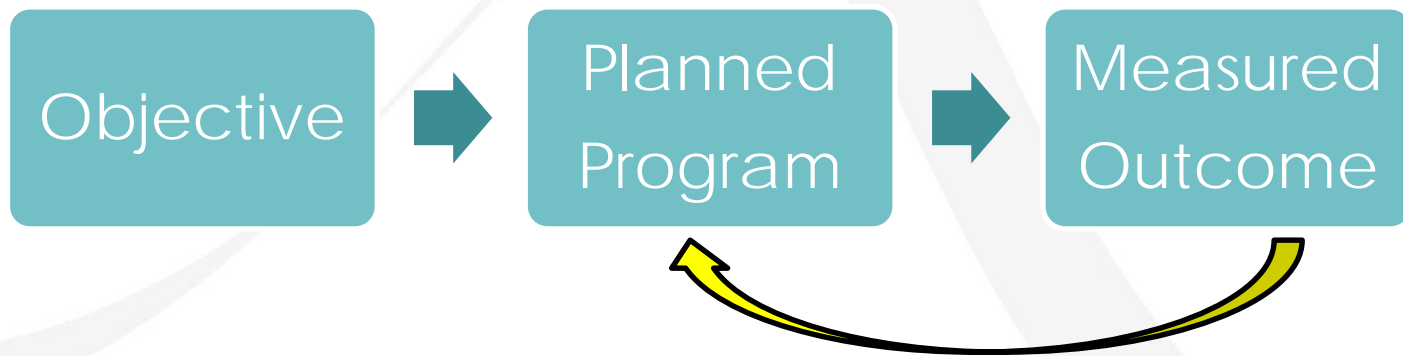
Objective → Planned Program → Measured Outcome

Assessing Implementation Fidelity

Objective → Planned Program → Measured Outcome

Assessing Implementation Fidelity

Objective → *Actual* Program → Measured Outcome

Assessing Implementation Fidelity

Objective → [ ] → Measured Outcome

Assessing Implementation Fidelity

Intended program?

Intended program + other stuff?

Only part of intended program?

Nothing like intended program?

Objective

Measured Outcome

Assessing Implementation Fidelity

Intended program?

Intended program + other stuff?

Only part of intended program?

Nothing like intended program?

Objective

Measured Outcome
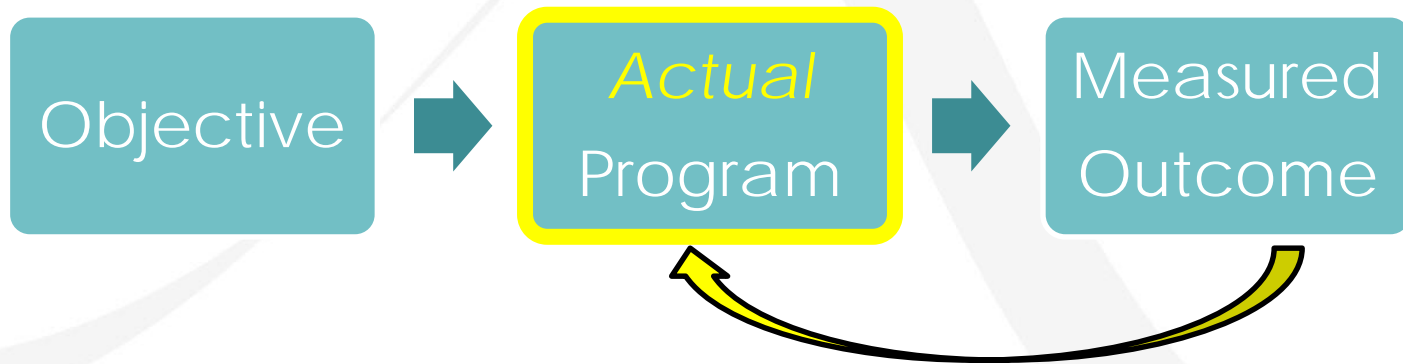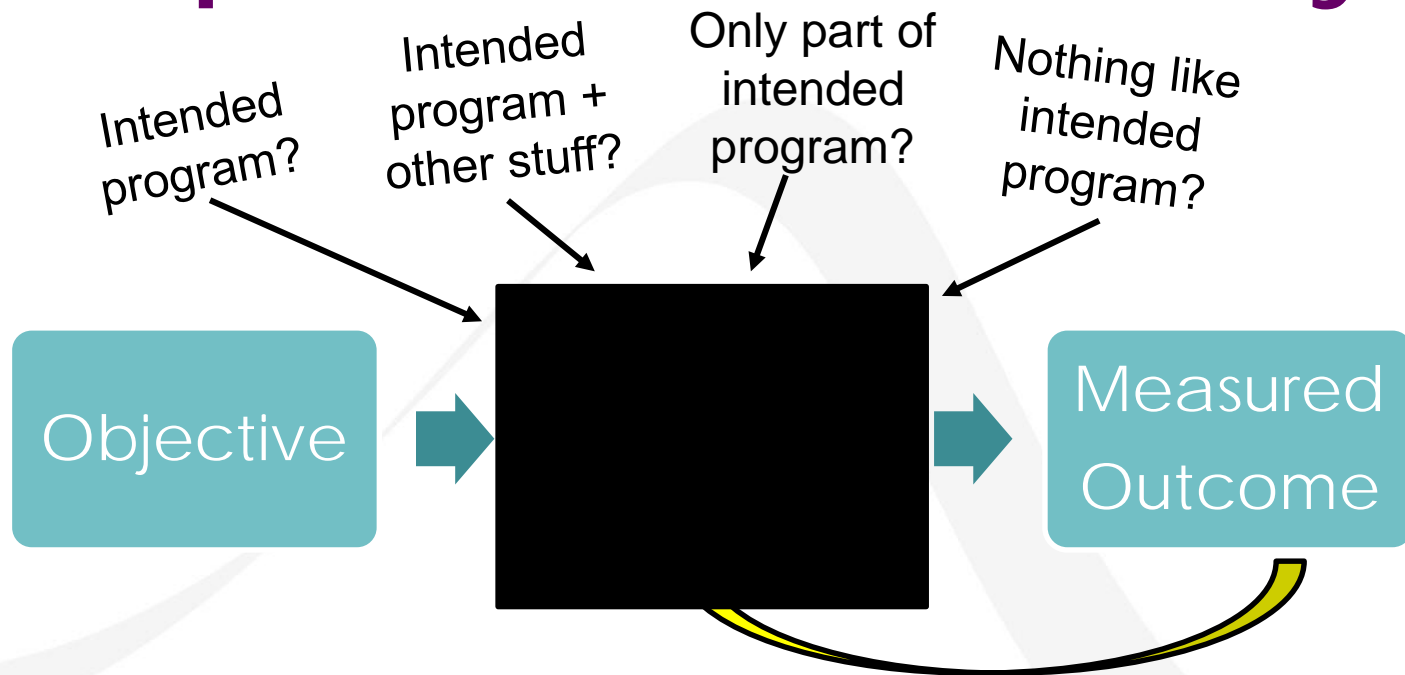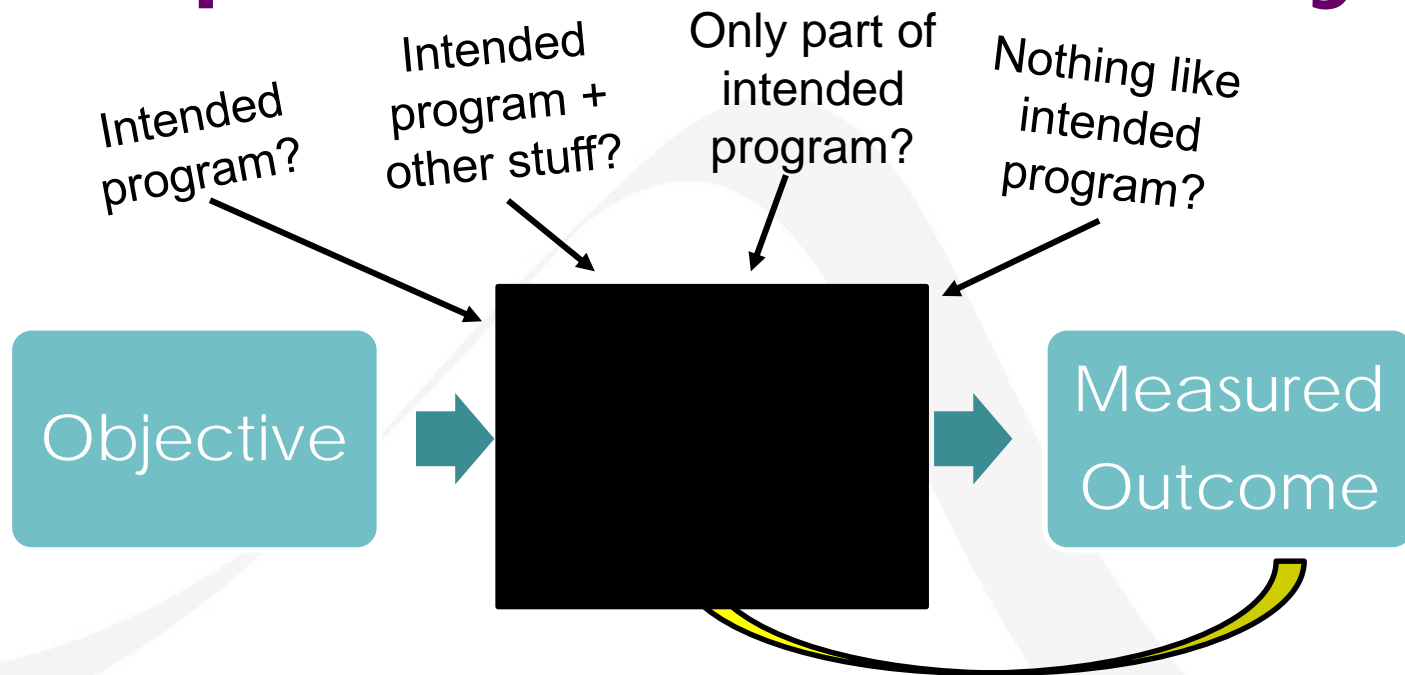
Implementation fidelity = the key to unlocking "the black box"

Assessing Implementation Fidelity

A client you're working with comes to you and says they have bad news– after telling their students to use a new software program every night for the entire past semester, only one or two students actually saw improvement in their scores. They're bummed because the new software was expensive and obviously it's not working.

What might you say to this client?

What might you suggest they do?

Assessing Implementation Fidelity: Activity!

Assessing Implementation Fidelity

Objectives	Workshop Component	Exposure		Adherence Yes/No	Quality 1 = Low (confusing) 3 = Medium 5 = High (clear)	Responsiveness 1 = Low (unengaged) 3 = Medium 5 = High (engaged)
		Planned	Actual			
1. Workshop participants will be able to identify and explain the six steps of the assessment cycle.	All aspects of this workshop	85 minutes				
2. Workshop participants will be able to write measureable learning objectives.	Writing objectives presentation	10 minutes				
	Writing objectives activity	10 minutes				
3. Workshop participants will be able to identify program components that are not mapped to objectives.	Mapping objectives presentation	5 minutes				
	Mapping objectives activity	5 minutes				
4. Workshop participants will be able to complete a fidelity of implementation table.	Implementation fidelity presentation	7 minutes				
	Implementation fidelity activity	8 minutes				

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Combining Implementation Fidelity with Outcomes Data

Implementation Fidelity Results	Outcomes Measure Results	Appropriate Conclusion
High	Good	The program may be effective. **What we like to see**.
High	Poor	The program may NOT be effective. Stakeholders use assessment results to inform changes to the planned program.
Low	Good	Results do not provide information about the planned program. Should NOT claim the planned program was effective– we don't know!
Low	Poor	Results do not provide information about the planned program. Should NOT claim the planned program was ineffective– we don't know!

Implementation fidelity data is paired with outcomes data to make more informed and appropriate decisions about programming!

Collecting Data

Want meaningful data

- From whom should you collect data?
  - Representative sample
  - Census
- What data collection method(s)/design should you use?
  - Depends on your objectives!
  - Pre and post test
  - Single time point
  - Group comparisons
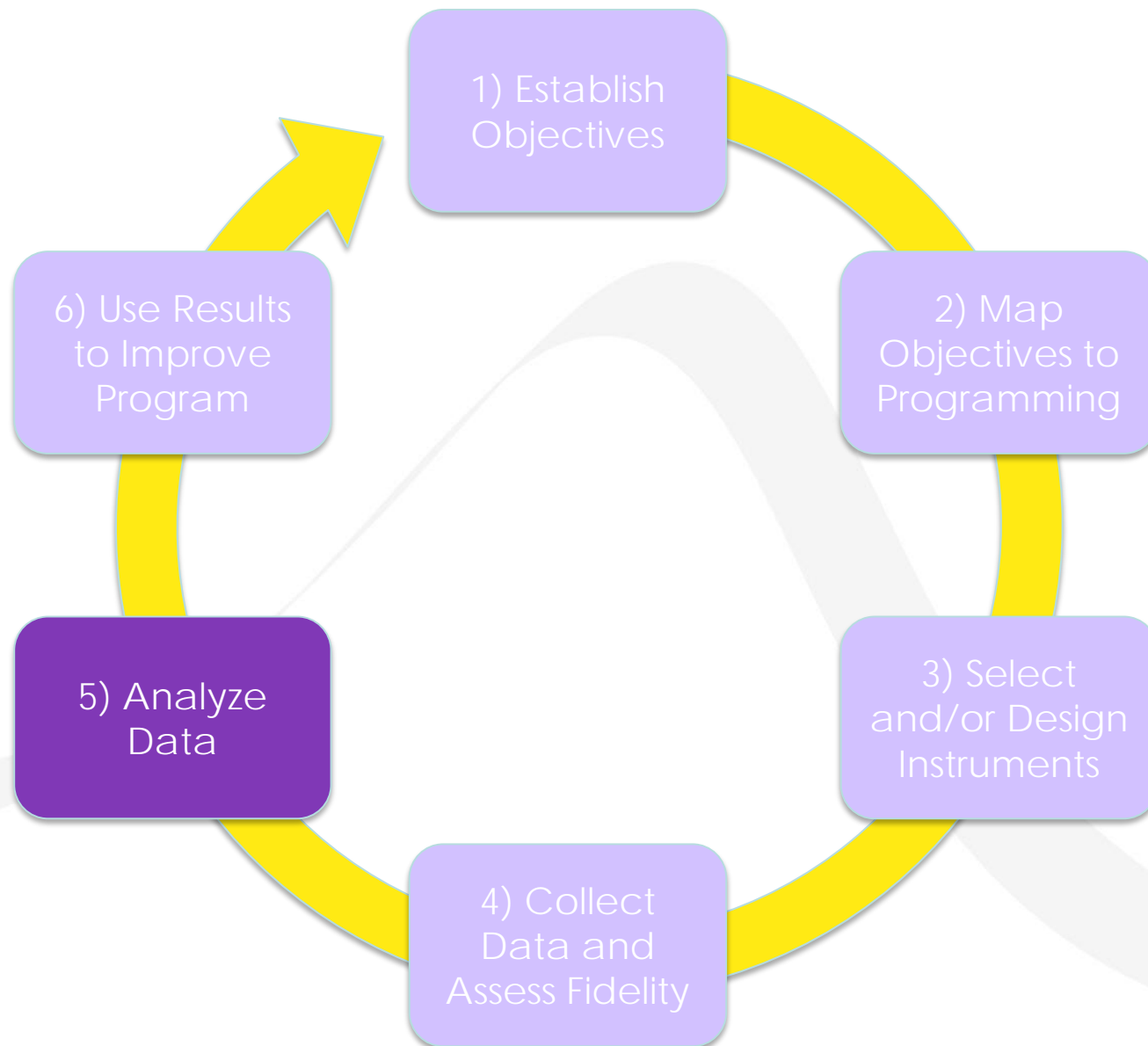
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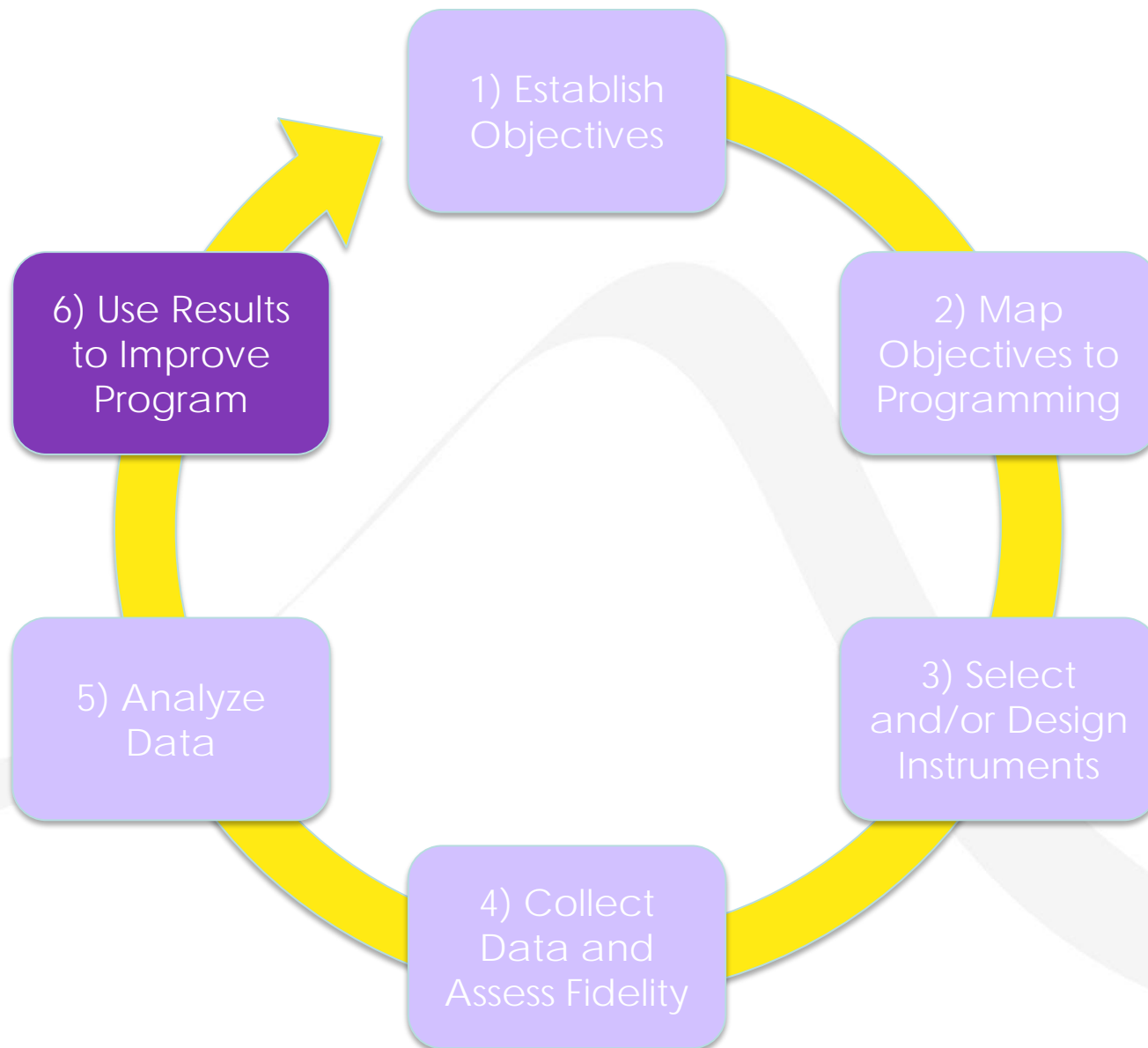
Analyzing Data

Four General Questions:
- **Relationships**: What is the relationship between assessment outcomes and program components (i.e., course grades, peer ratings)?
- **Differences**: Do students learn or develop more if they participate in a program compared to students who did not participate?
- **Change**: Do students change over time?
- **Competency**: Do students meet program expectations?

Analyzing Data

"But I'm not a statistician!"

- – Learn how to run basic analyses. It's easier than you think!
- – Find the stats-minded people at your institution. They'd probably be glad to help you out ☺

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Using Results to Improve Student Learning

In general, institutions seem to be good at collecting data…

…but not so good at *using* the results to ***improve*** *student learning.*

Blaich, C., & Wise, K. (2011). *From gathering to using assessment results: Lessons from the Wabash national study. Occasional Paper # 8.* Champaign, IL: National Institute for Learning Outcomes Assessment.
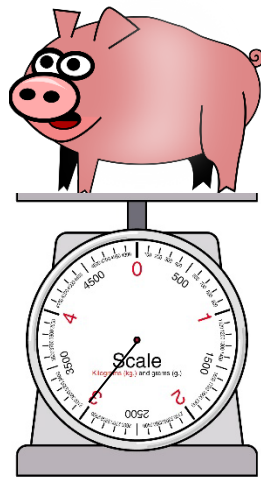
Using Results to Improve Student Learning

Why might results not get *used*?

- Reports get filed away and forgotten
- Belief that the report itself is enough to prompt and enact action (…false)
- Requires collaboration and conversation

"…but the communication must at some point move from talking about the data to talking about, and then enacting, changes." – Blaich & Wise, 2011
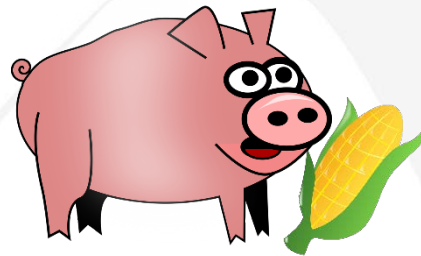
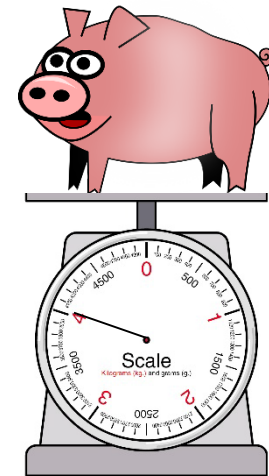# Using Results to Improve Student Learning

- Altering your programming based on the results of your assessment = making a _change_
- Improvement = a change that has had a _positive_ impact
- How do you know if your change is an improvement?
  - Re-assess!

Assessment   Program Change   Re-Assessment

Fulcher, K.H. Good, M.R., Coleman, C.M., & Smith, K.L. (2014). A simple model for learning improvement: Weigh pig, feed pig, weigh pig. Occasional Paper No. 23). Urbana, Il: University of Illinois and Indiana University, National Institute for Learning Improvement.

Using Results to Improve Student Learning

- What could we improve that would positively impact *student learning*?
  - Measurement?
  - Data collection?
  - Data analyses?
- Although improvements to all aspects of assessment are important (they help us attain better, more credible evidence of student learning) → **they do not impact student learning**
  - e.g., using a better data collection method will not help your students learn better

Using Results to Improve Student Learning

"Productively using learning outcomes results to inform decision making and to *improve* teaching and learning remains the most important **unaddressed** challenge related to student learning outcomes assessment. Simply posting a number on an institution website or checking a box in an accreditation report are of little value to students, parents, or policy makers. Equally important, **such actions do nothing to improve access, affordability, or accomplishment**."

- Kuh & Ikenberry, 2009

Summary

- **Assessment is a tool for continuous program improvement**

- **Put your time in!** *(what goes around comes around…)*

  Carefully align each step of the cycle, starting with learning objectives

- **What is your takeaway from today?**

Questions?

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