

COURSE DESIGN FUNDAMENTALS

Kyle Scholz and Monica Vesely
Centre for Teaching Excellence



Winter 2017



AGENDA

- Exploring Course Concepts
- Developing Intended Learning Outcomes
- Assessment
- Teaching and Learning Activities
- Alignment



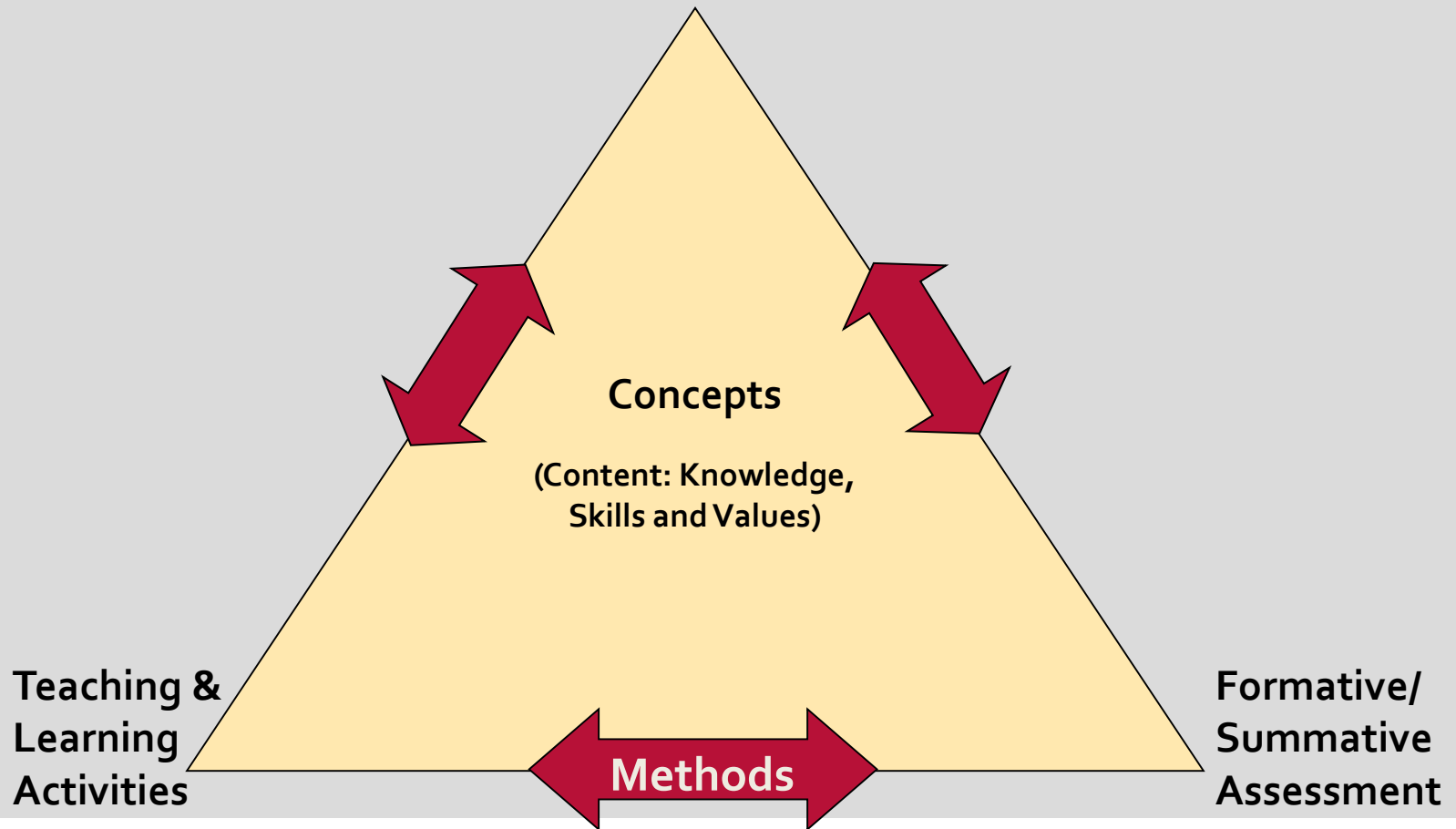
BY THE END OF TODAY YOU WILL BE ABLE TO:

- Create a concept map for your course
- Define intended learning outcomes
- Select assessments that demonstrate achievement of defined intended learning outcomes
- Identify teaching and learning activities to support students in preparing for the selected assessments
- Evaluate your course for alignment between intended learning outcomes, teaching / learning activities and assessments



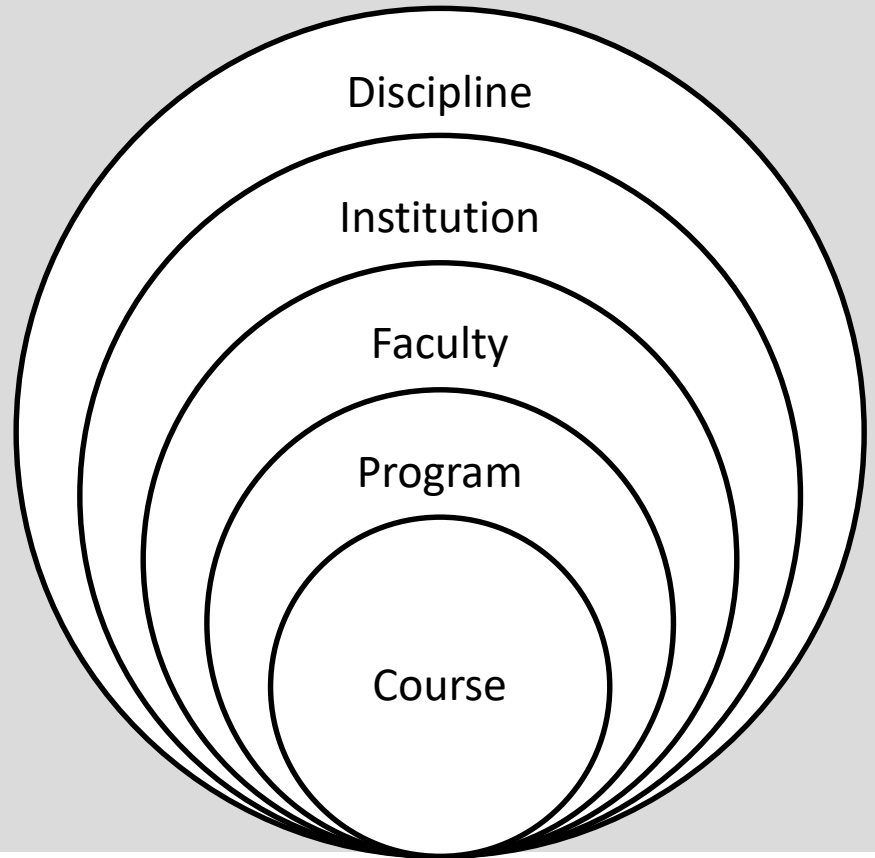
COURSE DESIGN MODEL

Intended Learning Outcomes

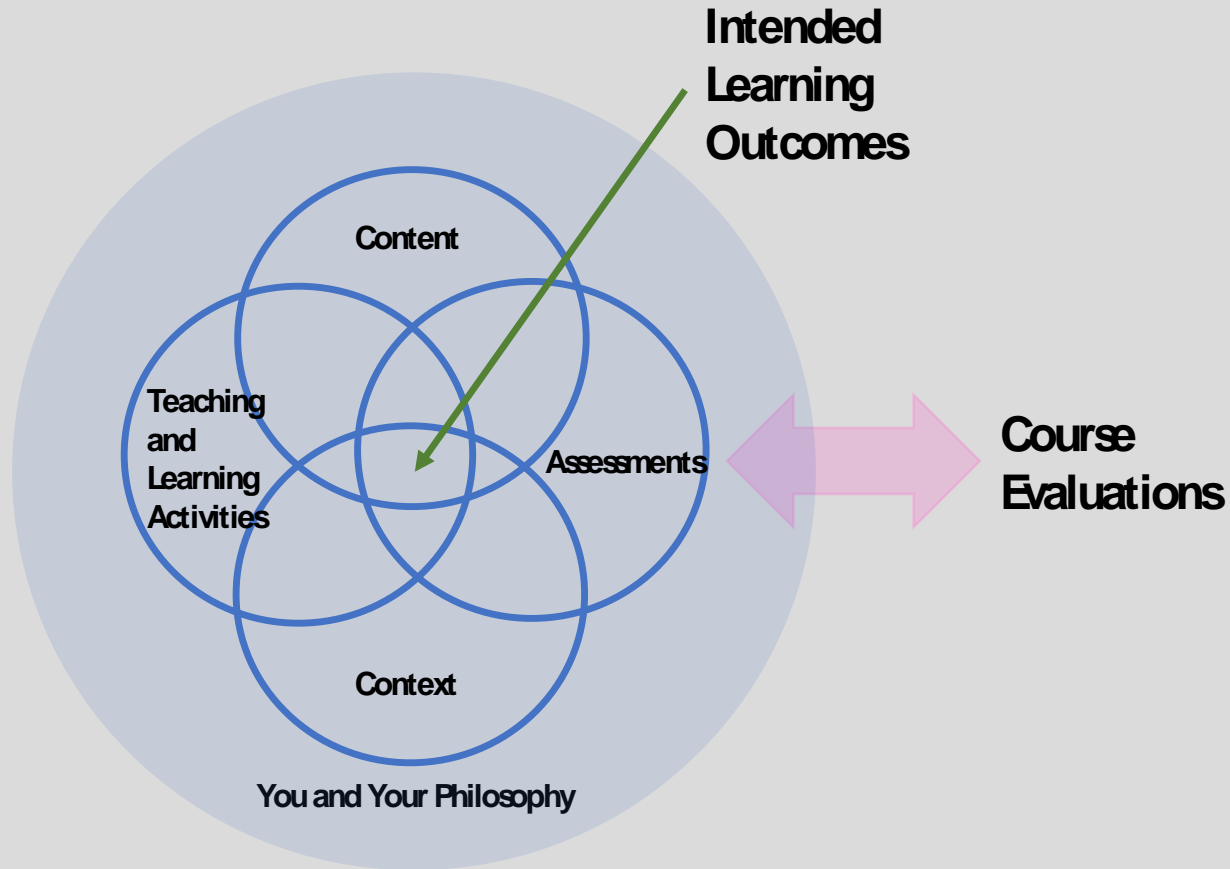


CONTEXTUAL FACTORS

What questions do we need to ask about these contexts?



THINGS TO CONSIDER



Adapted from Ellis, Light and Pryde, 2005

EXPLORING COURSE CONCEPTS

Outline

- Introduction to concept mapping
- Example of concept mapping process
- Creating a concept map for your course
- How can we use concept maps?



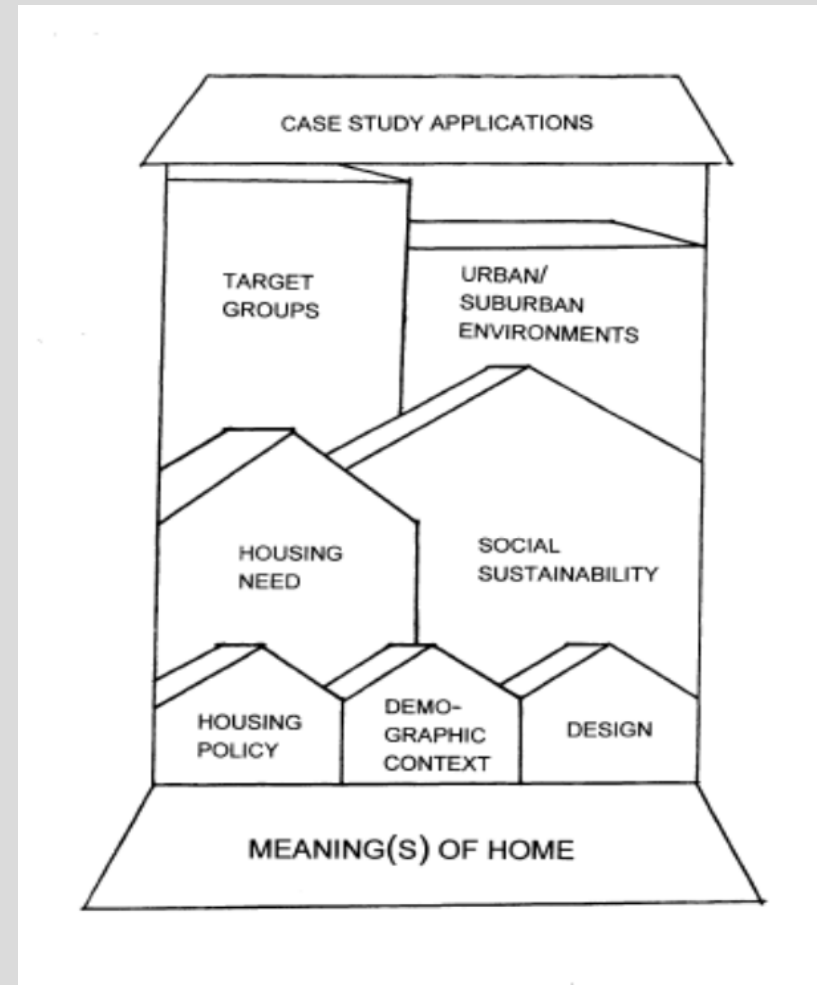
CONCEPT MAPS

Way to synthesize the core elements (**concepts**) of a course and think about how these concepts – content and skills – fit together

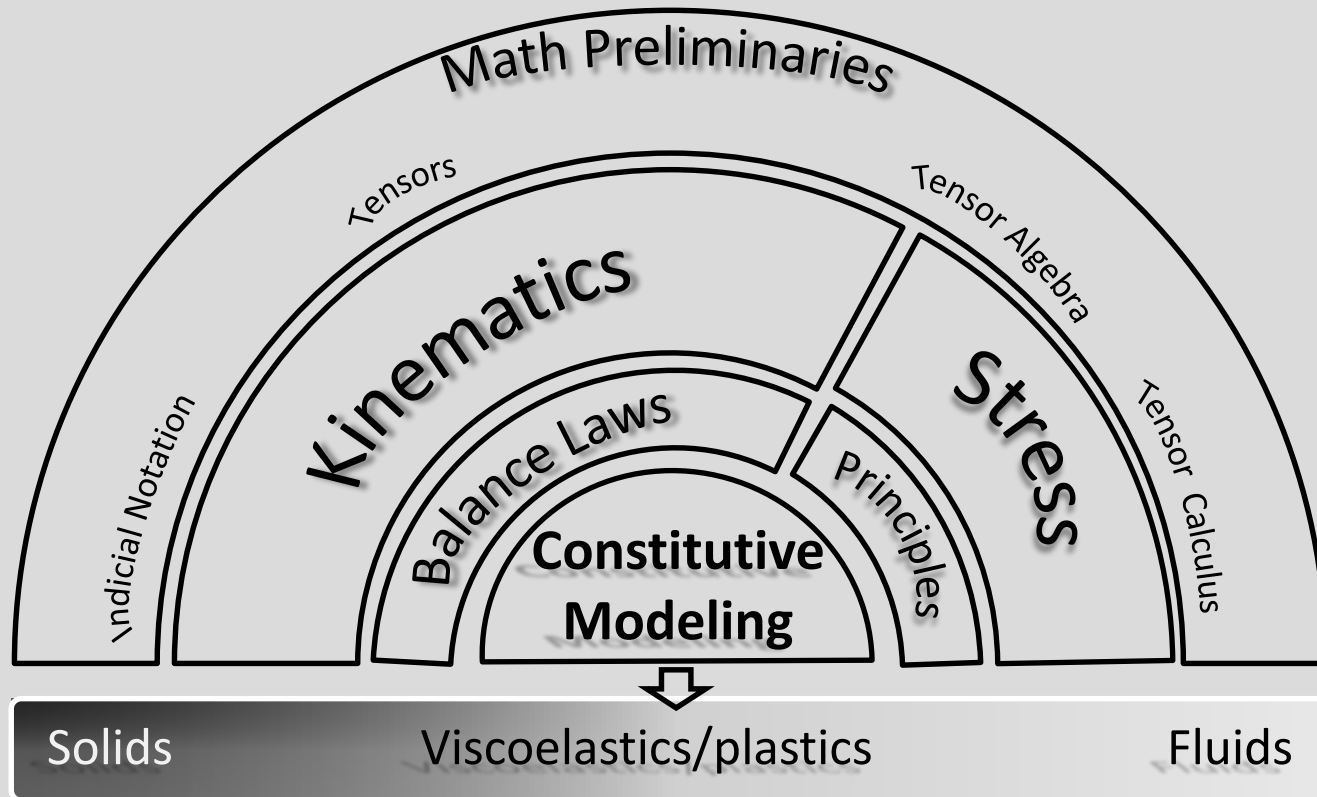
PLAN 431/614

ISSUES IN HOUSING

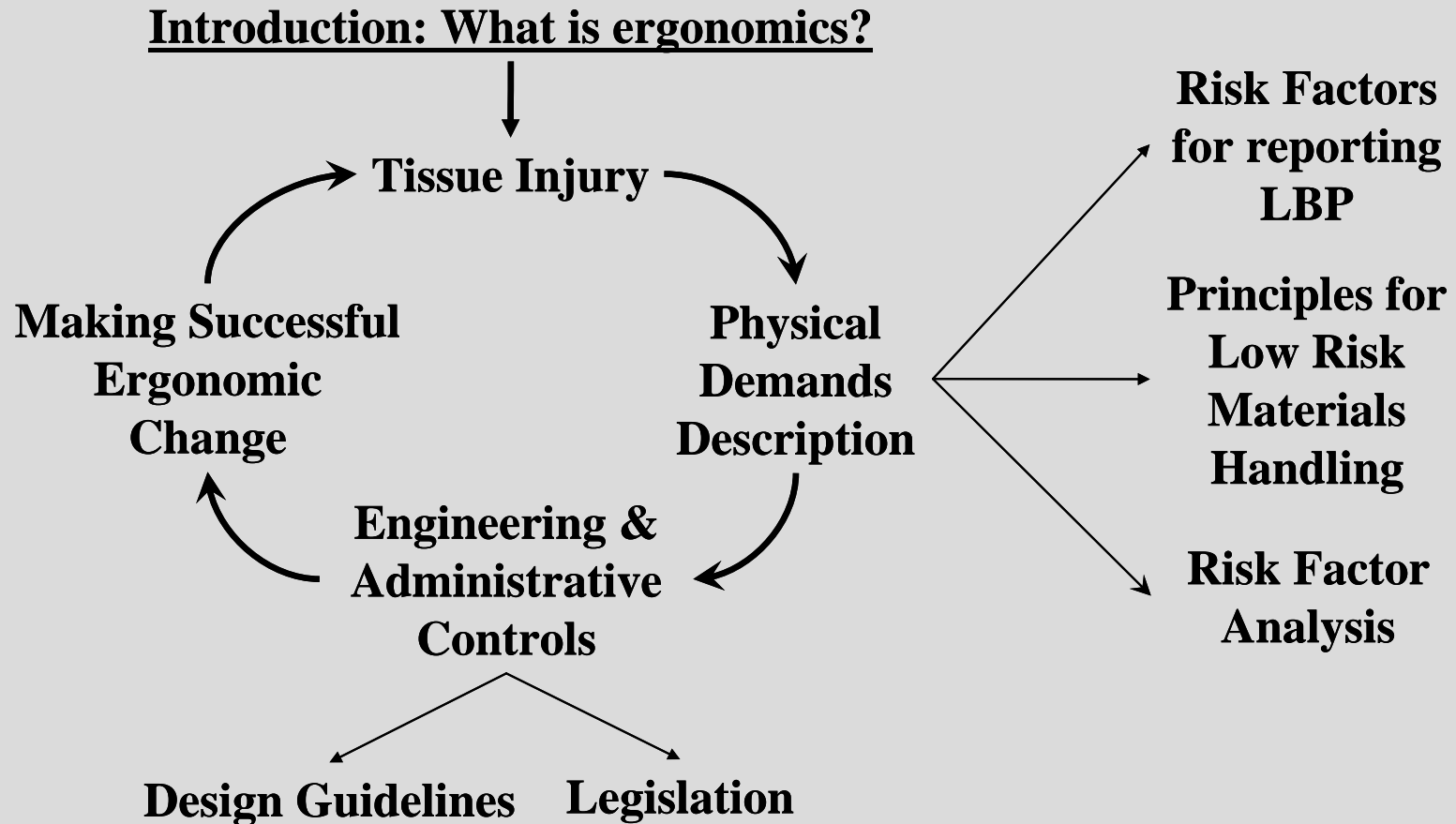
Instructor: Prof. Laura C. Johnson



COURSE CONCEPT MAP: ENGINEERING

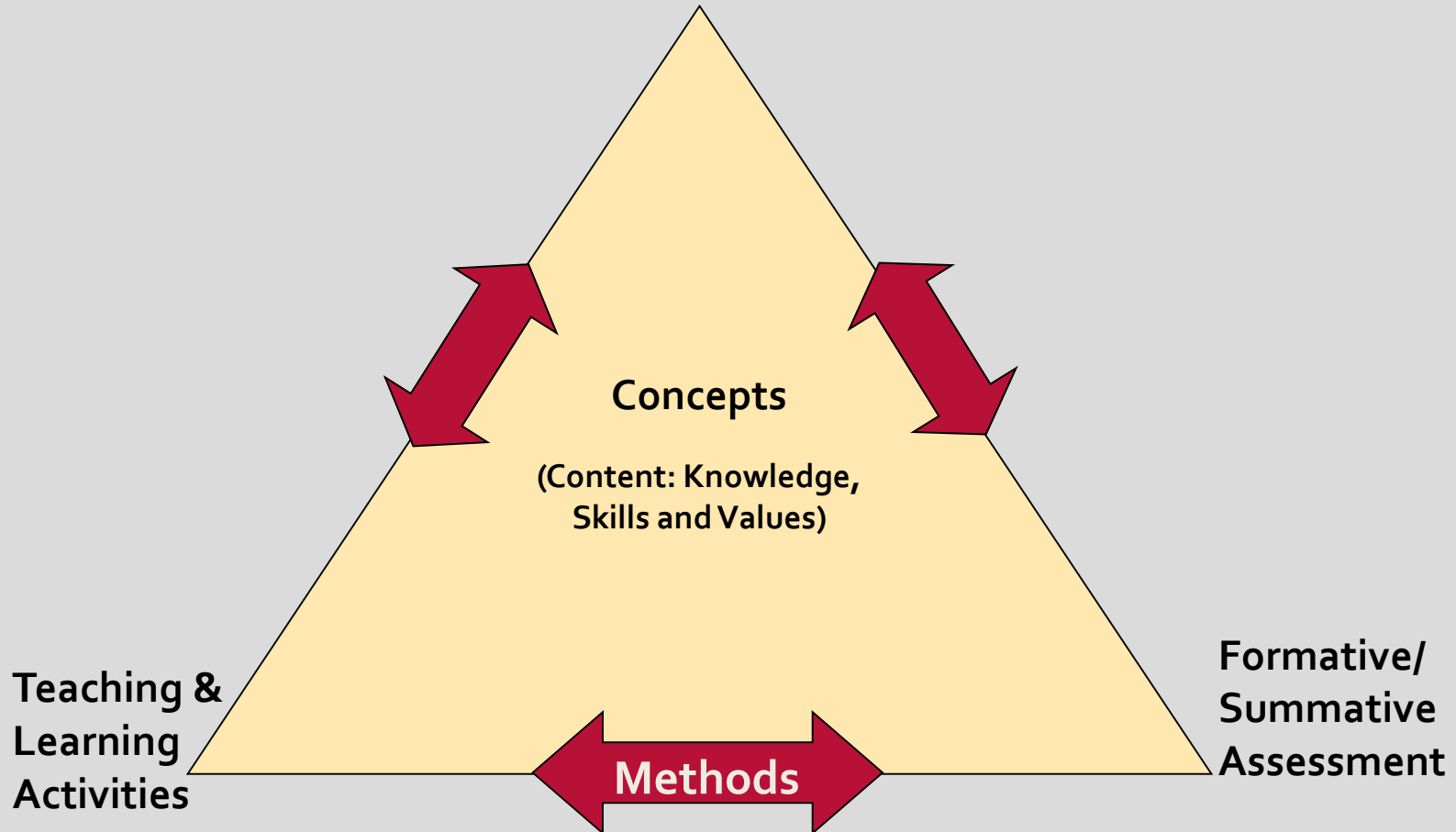


COURSE CONCEPT MAP: KINESIOLOGY



COURSE DESIGN MODEL

Intended Learning Outcomes



EXPLORING COURSE CONCEPTS

Free writing exercise

- Identify the key content (topics, themes) that students should gain from the course
- Brainstorm – no editing
- Do not refer to your pre-workshop worksheet



EXPLORING COURSE CONCEPTS

- Select the most critical content
- Identify concepts in the course where students have difficulty yet, are key for future learning
- Write each key concept on a post-it note
- Arrange concepts in your folder to begin creating the concept map
- Identify relationships between concepts



SUGGESTED WAYS TO CRITIQUE A CONCEPT MAP

Ask these questions as each map is presented

- Are any concepts stated verbally not included in the map?
- What is the specific relationship between/among each of the concepts?
- Is it easily apparent which concepts are central/important?
- Is it easily apparent which concepts are peripheral/less important?
- Have any relationships been overlooked?
- What would happen if “x” concept were moved?



WAYS TO USE A CONCEPT MAP

You may

- Choose to share with students or not
- Put in on course outline
- Reveal in pieces
- Highlight during the term how the different topics are present in the concept map
- Ask students to fill in missing pieces
- Ask students to build their own map at the end of course and then reveal your own



LEARNING OUTCOMES



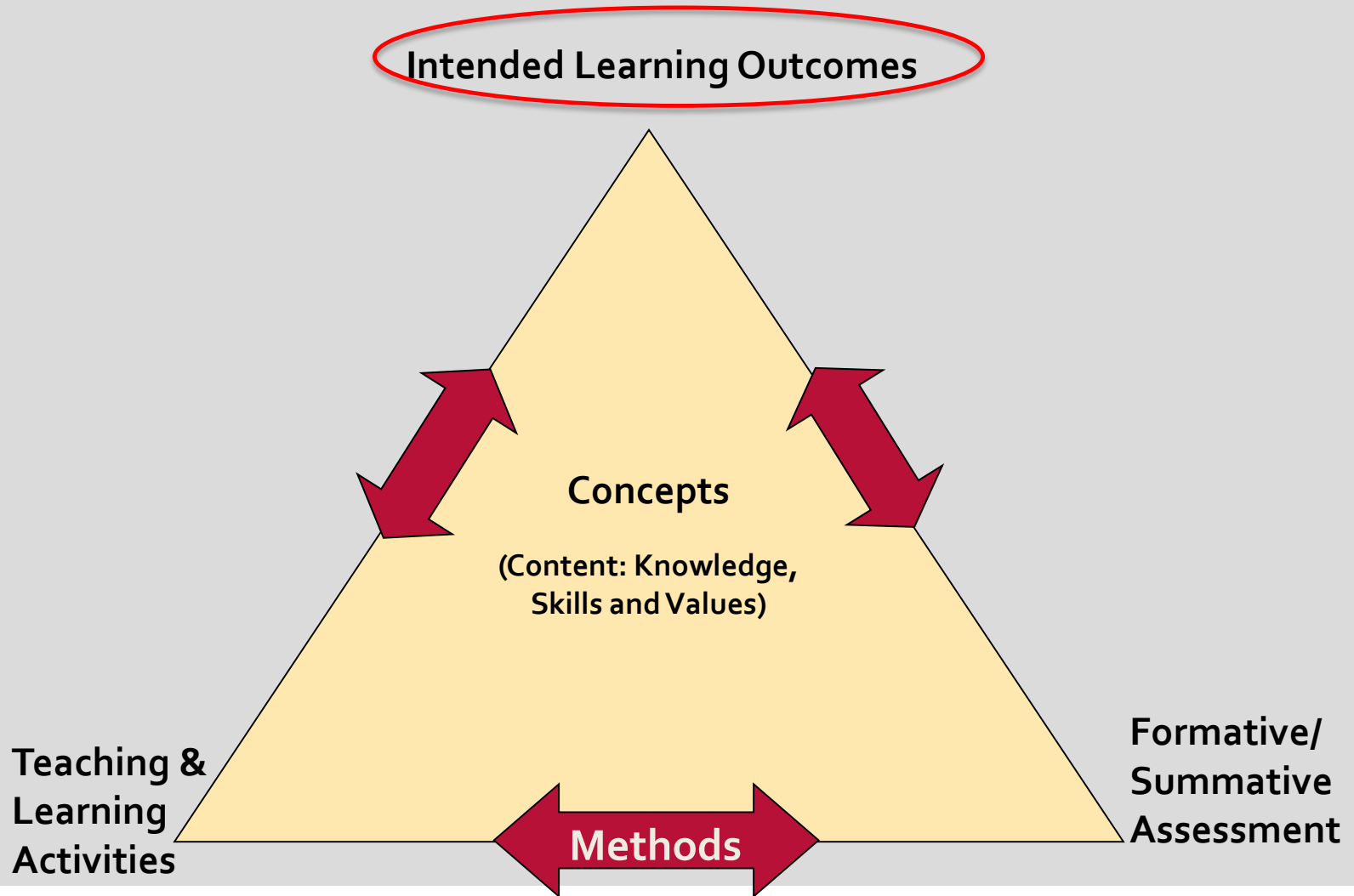
INTENDED LEARNING OUTCOMES (ILOS)

Outline

- Backwards design to course development – identify desired results first
- Discuss guidelines for writing learning outcomes
- Exploration of Bloom's taxonomy
- Individual work on developing course-level learning outcomes
- Feedback on ILOs



COURSE DESIGN MODEL



FOCUS ON THE LEARNER

- Take a learner-centered approach
- Focus on what learners should be able to:
 - **know**
 - **do**
 - **and/or feel**



BY THE END OF THIS COURSE,
STUDENTS WILL BE ABLE TO:

Draw a circle.



LEARNING OUTCOMES SHOULD BE:

- **S**pecific
- **A**ttainable
- **M**easurable



USE ACTION ORIENTED LANGUAGE

- Start with a “strong” verb such as *solve, design, write, evaluate, define, etc.*
- Avoid “weak” verbs such as *know, understand, appreciate, etc.*
- Use one verb per learning outcome – this keeps the learning outcome specific
- Differentiate goals from means:
 “critique this argument” versus
 “write an essay critiquing this argument”



MAKE THE ILO ASSESSABLE

- How will you know the student has achieved the outcome?
- Can the outcome be reasonably accomplished and demonstrated by the student within the timeframe of the course?



ACTIVITY AND EXAMPLES

- Offer students the opportunity to participate in open dialog about the impact of technology on society
- Articulate design considerations that reflect both individual and societal concerns
- Devise a theory to explain the origin and persistence of the tag “eh” that many Canadians affix to the end of sentences.



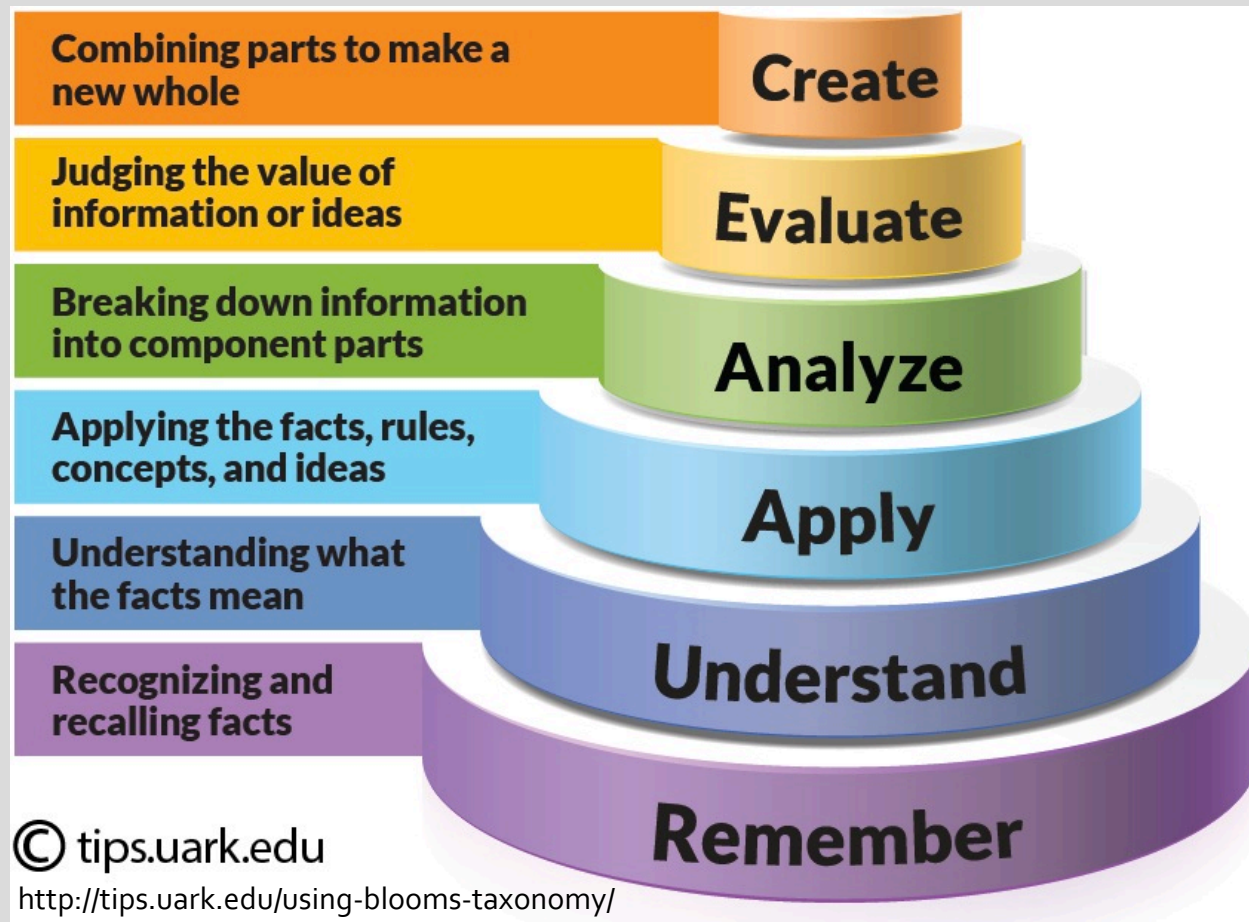
BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

Three Domains of Learning:

- **Cognitive:** mental skills (*Knowledge*)=**know**
- **Affective:** growth in feelings or emotional areas (*Attitude*)=**feel**
- **Psychomotor:** manual or physical skills (*Skills*)=**do**



BLOOM'S COGNITIVE DOMAIN "REVISED"



A Model of Learning Objectives

A statement of a **learning objective** contains a **verb** (an action) and an **object** (usually a noun).

- The **verb** generally refers to [actions associated with] the intended **cognitive process**.
- The **object** generally describes the **knowledge** students are expected to acquire or construct. (Anderson and Krathwohl, 2001, pp. 4–5)

In this model, each of the colored blocks shows an example of a learning objective that generally corresponds with each of the various combinations of the cognitive process and knowledge dimensions.

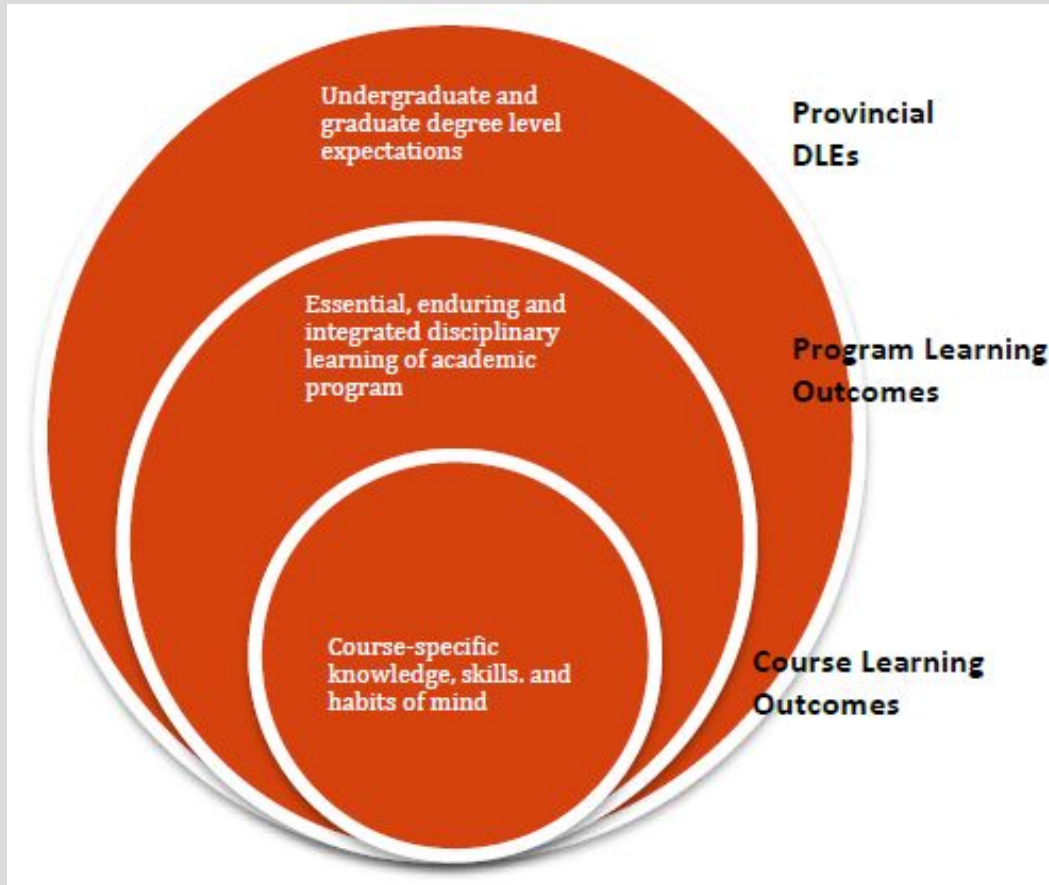
Remember: these are **learning objectives**—not learning activities. It may be useful to think of preceding each objective with something like: “Students will be able to . . .”

*Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.



Model created by: Rex Heer
Iowa State University
Center for Excellence in Learning and Teaching
Updated January, 2012
Licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
For additional resources, see:
www.celt.iastate.edu/teaching/RevisedBlooms1.html

OUTCOMES-BASED ALIGNMENT



Adapted from Kenny & Desmarais. (2012) A guide to developing and assessing learning outcomes



DEVELOPING ILOS

What do I want my students to be able to do, know, &/or feel by the end of my course?

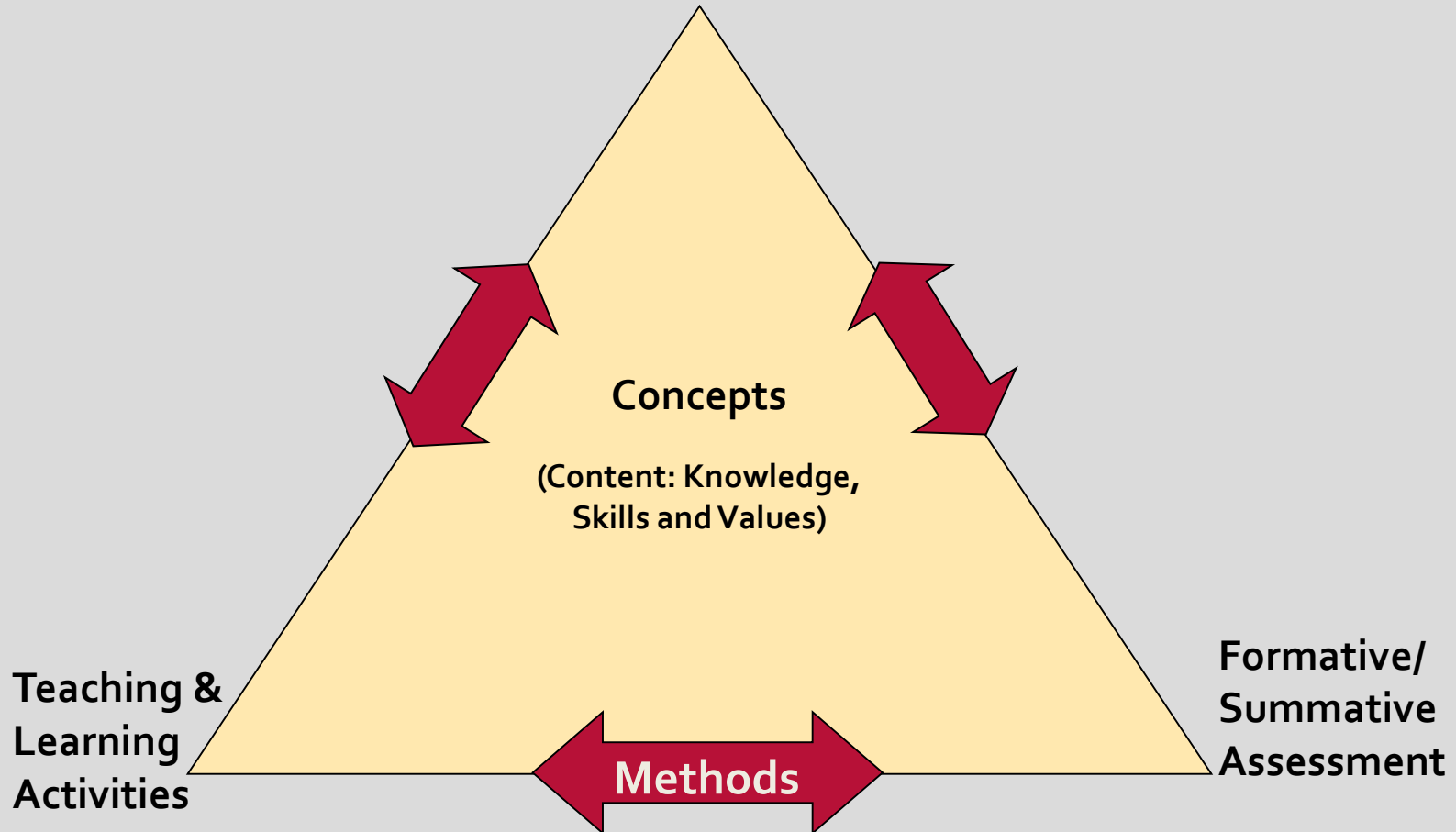


CHECKING QUESTIONS

- Are the ILOs specific?
- Do they focus on the learner instead of the instructor?
- Do they fit with the contextual factors?
- Do they fit with the philosophy?
- Do they encompass the content areas?
- Do they indicate what students should be able to do, know, and/or feel by the end of the course?

COURSE DESIGN MODEL

Intended Learning Outcomes

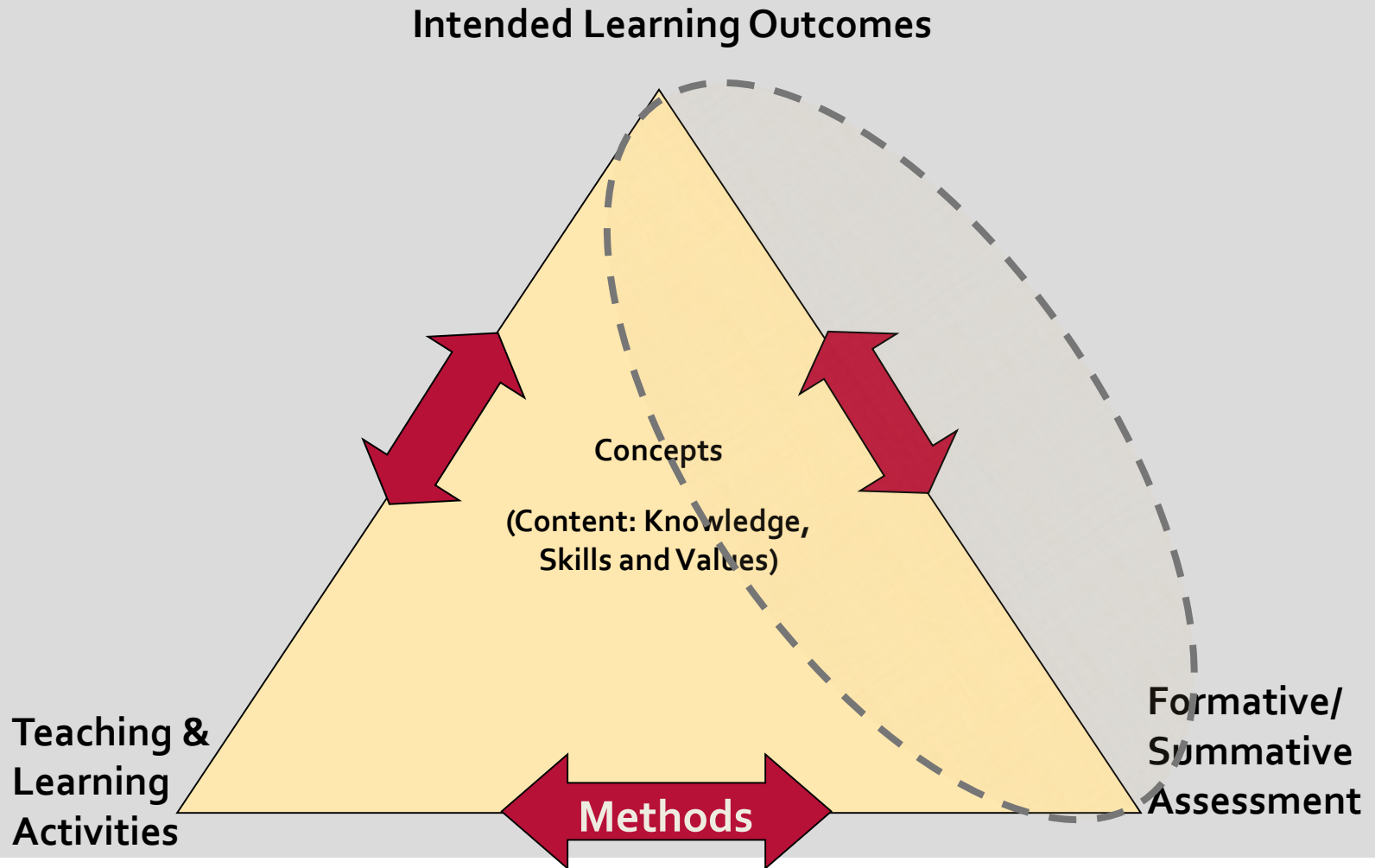


LUNCH

11:50 am -12:30 pm



COURSE DESIGN MODEL



ASSESSMENT

Outline:

- Framework for assessment
- Generating ideas of assessment tools
- Assessments present a learning opportunity



ASSESSMENT

“What and how students learn depends to a major extent on how they think they will be assessed”

Biggs (2011)



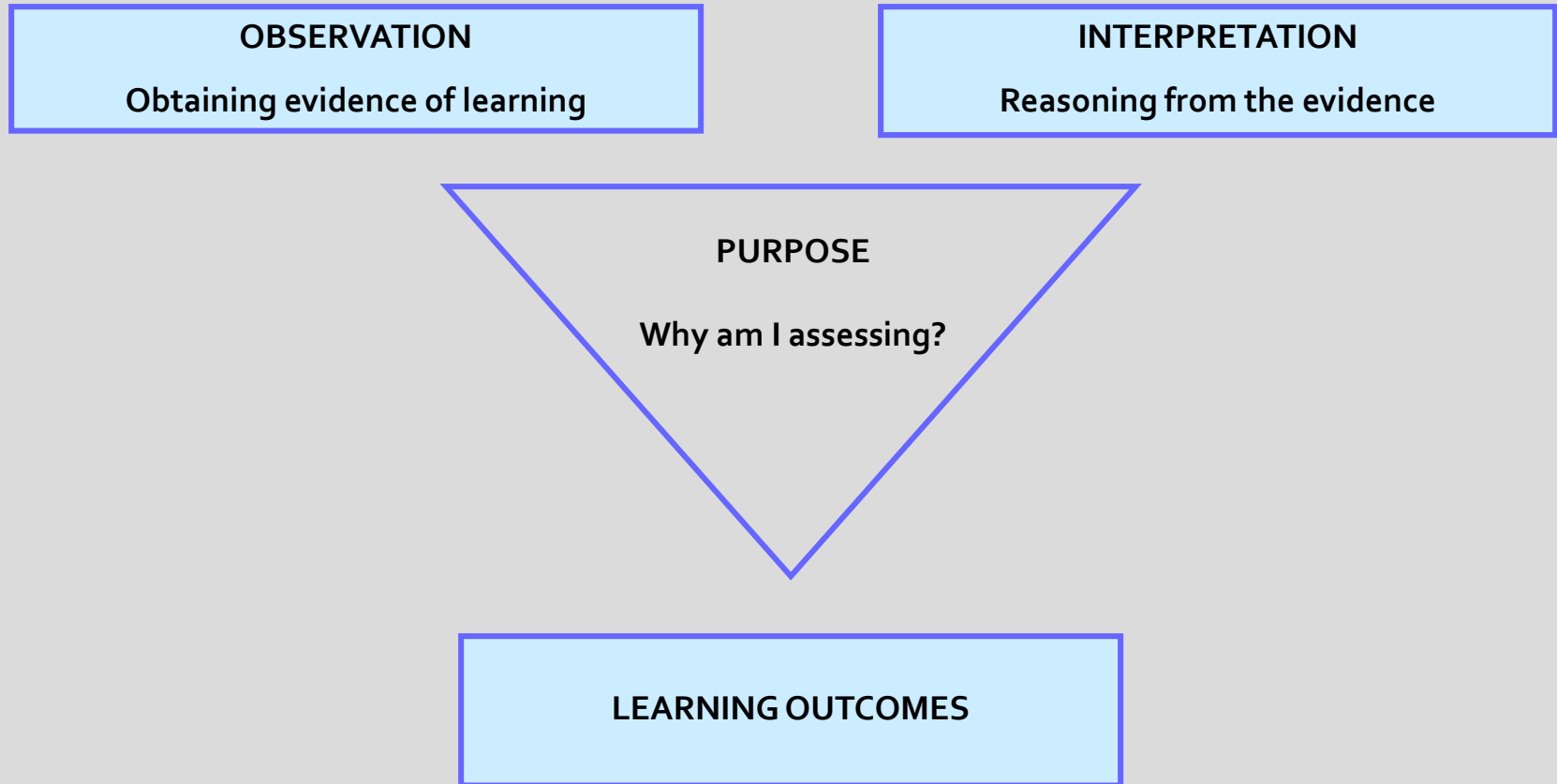
YOUR EXPERIENCES WITH ASSESSMENT- GRAFFITI WALLS

On the whiteboards:

- Join your table groups
- What assessment methods have you encountered in your discipline/faculty (occurring at any time during the course)?
- Take 10 minutes to create a graffiti wall

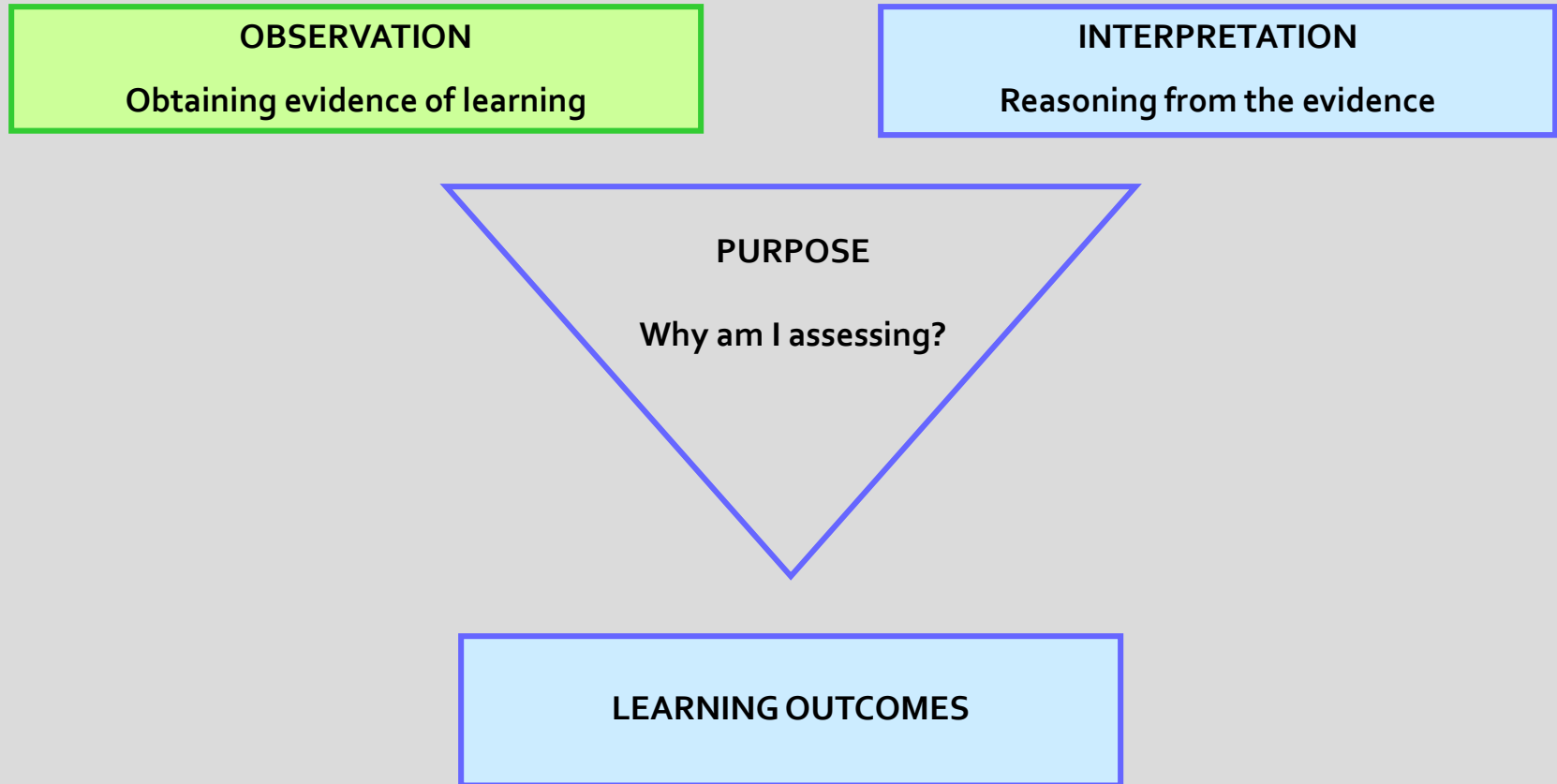


FRAMEWORK FOR ASSESSMENT



Adapted from National Research Council (2001). *Knowing What Students Know*. Washington, DC: National Academy Press, p. 44.

FRAMEWORK FOR ASSESSMENT



Adapted from National Research Council (2001). *Knowing What Students Know*. Washington, DC: National Academy Press, p. 44.

PURPOSE

Diagnostic Assessment

Diagnostic assessment is ungraded, occurs either at the start of the term or the start of a single lesson, and **may involve dialogue or not.**

The purpose of diagnostic evaluation is **diagnosis** and **aids the instructor in adjusting his/her course goals for the current level of knowledge.**

Formative Assessment

Formative assessment is ungraded, tends to occur during the course and often **involves dialogue.**

The purpose of formative evaluation is **growth** and **improvement in learning.**

Summative Assessment

Summative assessment is graded, may occur during the term or at the end and tends to involve **little or no dialogue.**

The purpose of summative evaluation is **reporting, decision making** or **final judgment** about the learning at a particular point in time.

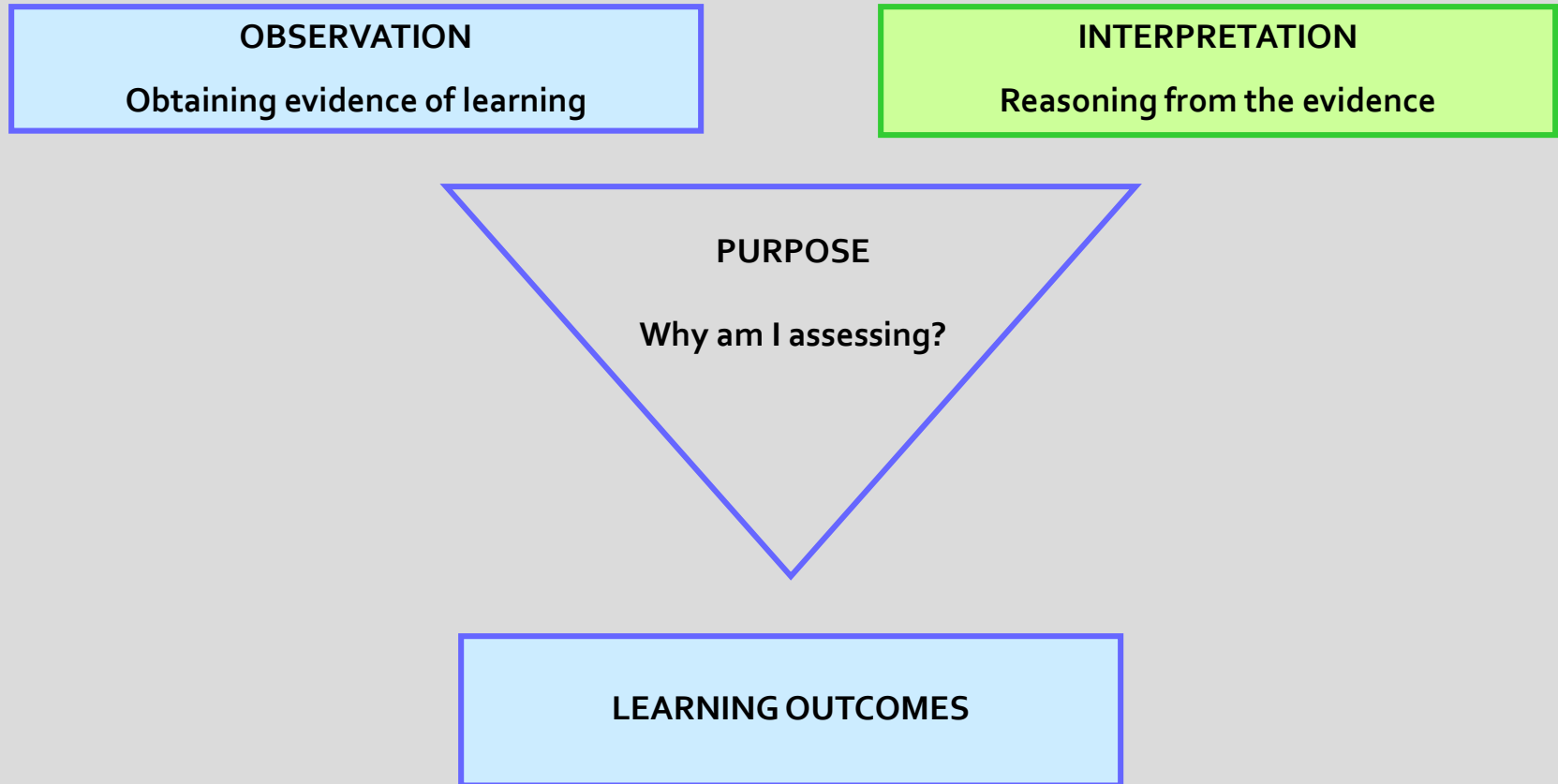


FEEDBACK

Key Features of Good Feedback:

- Provides opportunities to close the gap between current and desired performance
- Helps clarify what good performance is
- Encouraging (motivational, opens dialogue)
- Helps develop self-assessment

FRAMEWORK FOR ASSESSMENT



Adapted from National Research Council (2001). *Knowing What Students Know*. Washington, DC: National Academy Press, p. 44.

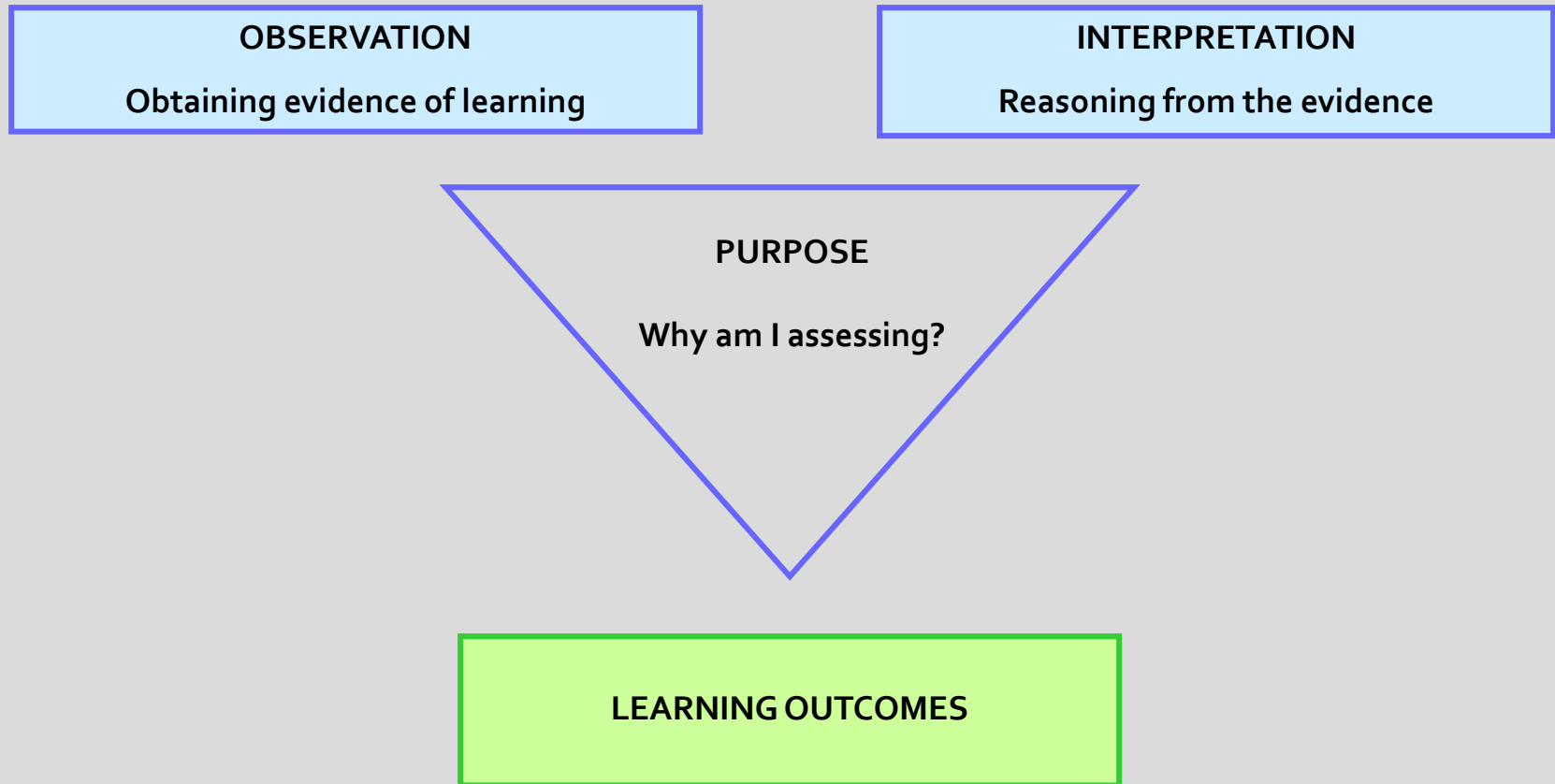
INTERPRETATION AKA RUBRICS

- Criteria
 - » Dimensions along which to judge how well a student has carried out the assessment task
- Standards
 - » Scale or levels for judging the students' performance on each dimension

EXAMPLE: RESEARCH PAPER

	Standards		
Criteria	Poor	Adequate	Good
Relative importance of sources to subject			
Quality of writing			
Quality of argument			
Integration of course concepts			

FRAMEWORK FOR ASSESSMENT



Adapted from National Research Council (2001). *Knowing What Students Know*. Washington, DC: National Academy Press, p. 44.

YOUR EXPERIENCES WITH ASSESSMENT- REVISITING THE GRAFFITI WALLS

Group Activity

- Go back to the Graffiti wall you created
- Label as diagnostic (D), formative (F), summative (S)
- What general trends do you see?
- Did you include ample opportunity for feedback?
- Select one assessment strategy to share with the full group (possible criteria: versatile, novel, effective, etc.)



EXAMPLES OF ASSESSMENT TOOLS

- | | |
|---|--|
| <ul style="list-style-type: none">• Abstract• Advertisement• Annotated bibliography• Biography or autobiography• Brochure, poster• Budget with rationale• Case analysis• Chart, graph, visual aid• Clickers• Client report from an agency• Cognitive map, web or diagram• Contemplative essay• Debate• Definition• Description of a process• Diagram, table, chart• Dialogue• Diary of a real or fictional historic character• Discussion board• E-portfolio• Essay exam• Exam wrapper• Executive summary• Fill in the blank test• Flowchart• Group discussion• Instructional Manual• "introduction" to an essay or scientific report (rather than the full report)• Inventory• Laboratory or field notes• Letter to the editor | <ul style="list-style-type: none">• Matching test• Materials and methods plan• Mathematical problem• Memo• "Micro-theme" (a tight, coherent essay typed on a 5x8 note card)• Multimedia or slide presentation• Multiple-choice test• Narrative• News or feature story• Notes on reading• Oral report• Outline• Personal letter• Plan for conducting a project• Poem, paly, choreography• Poster presentation• Question• Regulations, laws, rules• Research proposal addressed to a granting agency• Review of book, play, exhibit• Review of literature• Rough draft or freewrite (writer writes freely, with no constraints for a certain amount of clock time)• "Start" (a thesis statement and outline or list of ideas for developing)• Statement of assumptions• Summary or precis• Taxonomy or set of categories• Technical or scientific report• Term paper, research paper• Thesis sentence (sentence that expresses author's main point)• Word problem |
|---|--|



CONSIDER YOUR ASSESSMENT TOOLS

What formative and summative assessment choices will allow you to assess how well students are meeting your intended learning outcomes?



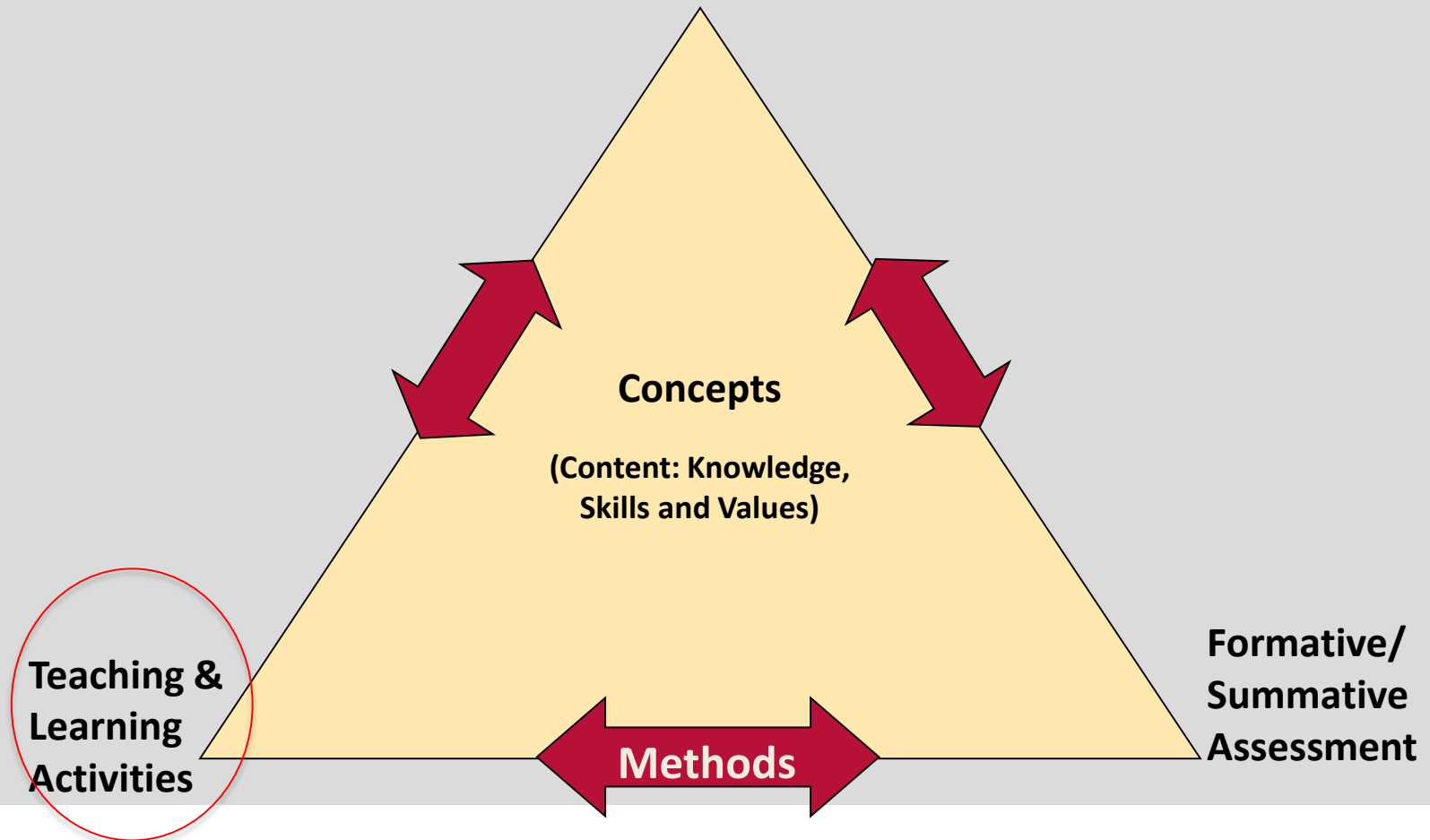
ASSESSMENT CHECK-IN QUESTIONS

- What fits with your contextual factors?
- Have you assessed your ILOs?
- What needs to be graded versus ungraded?
- What type of assessment is sufficient?
- What can be done in and out of class?
- How much time will the grading take?
- Will you have teaching assistants?
- What are the demands on your students in their other courses?



COURSE DESIGN MODEL

Intended Learning Outcomes



INSTRUCTIONAL STRATEGIES = LEARNING ACTIVITIES

What are we designing for?

- **Learning** time NOT teaching time
- **Out-of-class** as well as in-class learning
 - e.g. 72 hours, vs. 36 hours
- **What do students need?**
 - Successful experience of the expected outcome before summative assessment/grading

Adapted from: Teaching and Learning Services, McGill University



INSTRUCTIONAL STRATEGIES

What is our responsibility?

- Balance informing and providing opportunities for successful practice in and out of class
- **Informing** = providing information about the subject matter and learning tasks
- **Practice** = providing structured activities with feedback with structure and feedback reduced over time



ACTIVE LEARNING

Active learning can indeed involve some *physical action* that requires the students to do something or observe something (some form of experience).

Active learning can also be a *reflective dialogue* either with others or with oneself (individual reflection).

Active learning differs from other types of learning (receiving information and ideas) in that it is NOT passive.

Students interact with the subject matter in some way – *they are engaged*.



ACTIVE LEARNING

Gallery Walk:

- Intended Learning Outcomes hinder students learning beyond the scope of the learning outcomes (limiting)
- Knowledge transfer is the most important aspect of teaching and learning
- Student feedback is not valuable in all cases



WHAT ACTIVITIES COULD YOU
USE TO HELP LEARNERS ACHIEVE
YOUR COURSE OUTCOMES?

Think, pair, share.



TEACHING AND LEARNING ACTIVITIES

CHECK-IN QUESTIONS

- What can we do to cement our students' learning?
- Do they need to read, to explore, or to apply?
- Where can we give them (the students) some latitude/freedom to explore and where must it be directed?

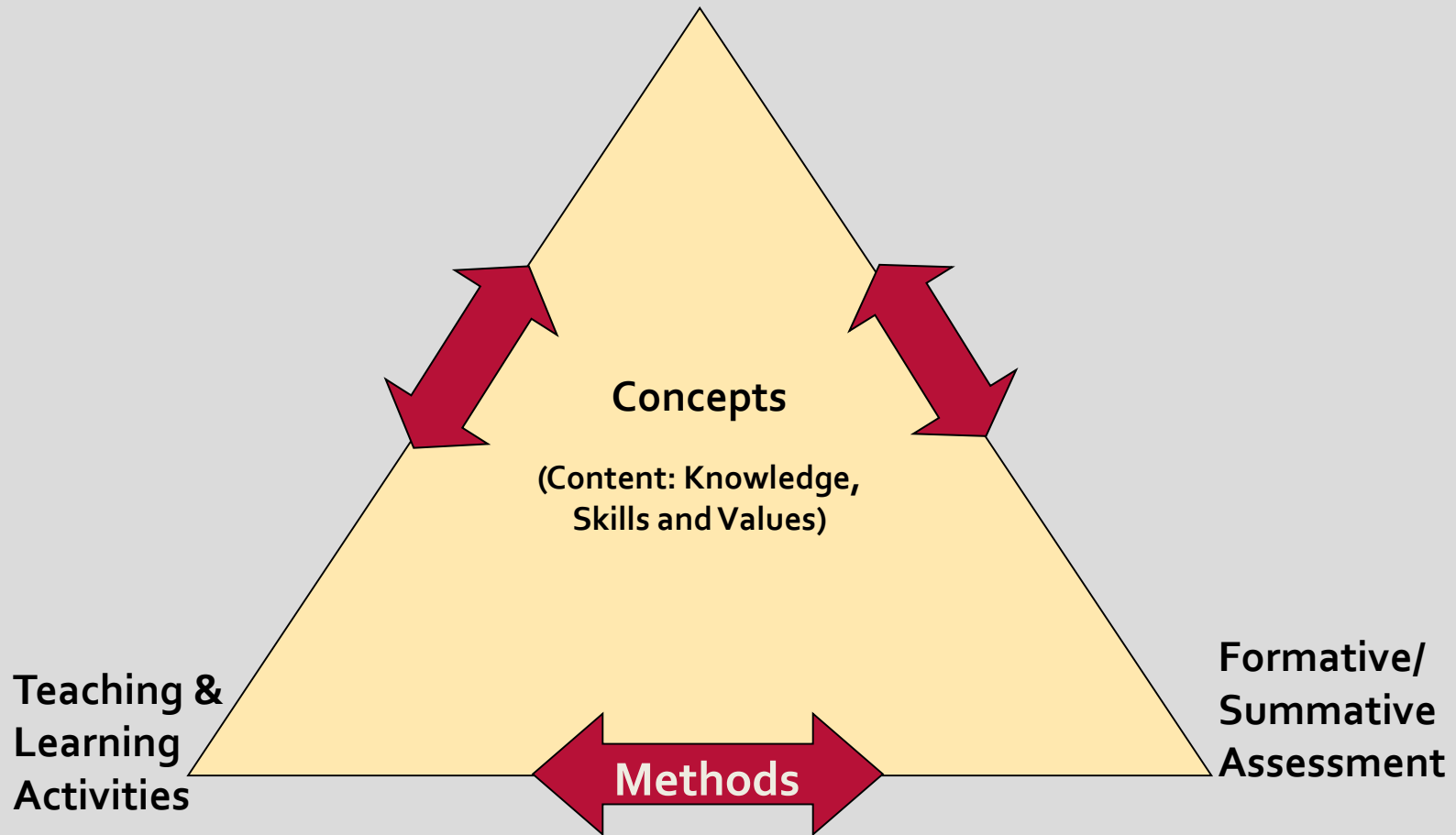


ALIGNMENT



COURSE DESIGN MODEL

Intended Learning Outcomes



ALIGNMENT

- Turn to your handout alignment charts
- Try to complete one of the alignment chart
- Discuss with a colleague using “checking questions”

ALIGNMENT CHECKING QUESTIONS

- Are there more suitable activities to achieve the outcome?
- Have I used a range of activities to allow students to demonstrate a particular outcome?
- Are there opportunities for practice and feedback?
- Is there opportunity for both formative and summative assessment
- Did I use the appropriate language/verb for the learning outcomes (Bloom's taxonomy)?
- Am I addressing the three domains, as appropriate for my intentions for the course?

RESULTING CHANGES

What changes are you considering as a result of the discussions with your partner?

CONTACT INFORMATION:

Kyle Scholz

kwscholz@uwaterloo.ca

Monica Vesely

mvesely@uwaterloo.ca



HOW DID WE DO?

Take a couple minutes to answer our survey

» Sent via email

Your feedback helps us to continually assess and improve our sessions

Want to know more?

» Check out our annual report

Thank you!

