A BOUQUET OF BLOOM’S:
choosing active learning strategies to align
with learning outcomes

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Introductions

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Introductions

☐ Facilitators

☐ With your neighbors:
  ☐ Name
  ☐ Affiliation
  ☐ What do you hope to get out of this session?
Learning Outcomes

By the end of this session, you will be able to:

- Classify active learning (AL) strategies (by Bloom’s and time commitment)
- Select and align AL strategies with learning outcomes
- Plan to implement an aligned AL strategy in a specific learning experience
## Active Learning

### Learning Outcomes/Objectives

<table>
<thead>
<tr>
<th>Know I know</th>
<th>Think I know</th>
<th>Learned (end of session)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Learning</td>
<td></td>
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<tr>
<td>Learning Outcomes/Objectives</td>
<td></td>
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<tr>
<td>Bloom’s Taxonomy</td>
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</tbody>
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Principle: Effective teaching involves aligning the three major components of instruction.
Active learning strategy alignment?

- But how can we choose ALs to best align with learning outcomes/assessments?
Active learning strategy alignment?

- Alignment

- Streveler & Meneske, 2017.
Classifying Active Learning Strategies

Criteria
- Bloom’s
- Time Commitment

Tools
- Strategy Cards

Packet Page 4
Group work

Classification
• Bloom’s
• Time Commitment

Tools
• Strategy Cards

Bloom’s Taxonomy
- Recall
- Interpret
- Apply
- Analyze
- Evaluate
- Create

Project-based Learning

Time Commitment
- High
- Low

Quickwrite

Packet Page 4
Gallery Walk

10 min

What similarities do you see?

What challenges did you face?

What differences did you notice?
SMART Learning Outcomes

Specific:
- Use clear, direct language to tell the learner what they should be able to do after the course.
- Use specific action verbs from Bloom’s Taxonomy.
- Include parameters that help define the conditions or level of mastery expected.

Measurable:
- Written as actions that can be observed to indicate level of rigor expected.
- Written so that any objective observer could watch the learner’s performance and agree if the LO has been satisfied or not.

Achievable:
- Reasonable to master to the level indicated within the course timeline.
- Can be taught and learned within the course parameters.
- At an appropriate level of mastery for the course and anticipated student background.

Relevant:
- It is easy to defend the inclusion of each course LO in this specific course.
- Relevant to both the subject area and the industry at large.
- Only include content and skills that are going to be used, and are of value to the field.

Time-bound:
- Something that students will need to be able to learn and use within the course time frame.
- Indicate the level of mastery expected within the course time frame.
- Indicate if there are any time constraints on the performance.
Worked Example

By the end of this session, you will be able to:

- Classify active learning (AL) strategies (by Bloom’s and time commitment)

What is the Bloom’s Level of this LO? Understanding

What activity/activities that you charted would align with this LO? Graphic Organizer?
Individual Homework

Read for understanding

Packet Page 5

☐ What questions do you have?
☐ Do you anticipate any challenges?
Summary and Feedback

- Return to Quickwrite
- Packet Page 2

- Key takeaway(s)
Wrap-up

Follow-up questions, thoughts, ideas: bodbyl@mines.edu

Find us at: www.trefnycenter.mines.edu
Classification Example

Time Commitment

High
- Group projects/mini-conference
- Project-based learning
- Case Studies
- Peer-reviewed research assignments

Low
- Think-pair-share
- Minute paper
- Muddiest point
- Fish Bowl
- Application Card
- Jigsaw
- Graphic Organizer

Recall
- Set It Up

Understand
- Co-operative Learning Groups

Apply
- Peer-reviewed research assignments

Analyze
- Case Studies

Evaluate
- Project-based learning

Create
- Group projects/mini-conference

Bloom's Taxonomy