

ROI: Increasing student engagement without completely redoing your course

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Today's Agenda

1. Introductions
2. Pinch Points & Multiple Means of Engagements
3. Applying Resources - Activity 1
4. Applying Resources - Activity 2
5. Wrap-Up and Next steps

Engagement: What is it

By engagement, we mean how students are engaging in and with your course:

- Attendance in class / lab
- Participation in class / lab discussion / class sessions
- Completion of readings
- Performance on assignments

If you can think of other types of engagement, please add them to the parking lot:

<https://padlet.com/SearleCenter/parking-lot-2023-winter-9ohar75e0o00arb>

Pinch Points

A **pinch point** is a point in a process of learning where students constantly encounter difficulties and the process slows down or stops altogether. This could be a specific lecture that students consistently have trouble understanding, or a specific assignment where students are unsure about how to complete it, etc.

Pinch Points

Sometimes my students write **surface-level reflections** and do not provide deeper insights into their motivation, understandings, etc.

Where to find materials on the Canvas page

Impatience with errors and debugging. Students will give up and copy or not embrace the struggle

Students are not sure about **how to create examples** from the course material and apply them to daily experiences.

My students **do not see the value** of [their analysis assignment]. They can do it for class but tend to skip this foundational step in their practice.

Engagement

Consider the students' perspective: **are you answering the following questions for your students?**

- Why should I care about this?
- Why should I learn it?
- Why is this important to me?

As the expert, this may be clear to you, but from their perspective they don't yet see the bigger picture.

Plus One

You don't have to do everything all at once.

Pick one element of your course that you want to change this iteration and see how it goes.

Next time around, pick another element.

K•W•L

Directions: for today's session reflect on what you Know, Want to know, (later, we'll revisit what you've learned)

Know	Want to know	Learned <i>(save for later)</i>
		<i>(don't put anything here yet)</i>

Return On Investment (ROI)

Think about your pinch points. **Which one would give you the biggest return for the time and energy you'll invest?**

It could be a big payoff with a decent investment of time and energy.

It could be a moderate payoff with a small investment of time and energy.

The image shows a browser window displaying a Google Docs document. The browser's address bar shows the URL <https://docs.google.com/document/d/1LrVuDm-2Sv5zt3EOAT0v6Ea71SJI-Z3u/edit>. The document title is "Session 2 - Resource List" and it is a .DOCX file. The interface includes a top navigation bar with "File", "Edit", "View", "Tools", and "Help" menus, a "Request edit access" button, a "Share" button, and a "Sign in" button. On the left side, there is an "OUTLINE" panel with a tree view showing the document's structure. The main content area features a large heading "Session 2: Resource List" followed by an introductory paragraph, a "Recruit Interest" section with a sub-section "Overview from CAST" containing a bulleted list of links, and an "Active Learning Strategies" section with a bulleted list of links. A "North" logo is partially visible in the bottom left corner.

Session 2 - Resource List .DOCX

Request edit access Share Sign in

OUTLINE

- Session 2: Resource List
 - Recruit Interest
 - Overview from CAST
 - (Website) [Optimize individual choice and autonomy](#), CAST UDL guidelines
 - (Website) [Optimize relevance, value, and authenticity](#), CAST UDL guidelines
 - (Website) [Minimize threats and distractions](#), CAST UDL guidelines
 - Active Learning Strategies
 - Affinity Grouping: <https://canvaspost.northwestern.edu/active-learning-activities/#alc01>
 - Circle of Voices: <https://canvaspost.northwestern.edu/active-learning-activities/#alc06>
 - Class Backchannel: <https://canvaspost.northwestern.edu/active-learning-activities/#alc07>
 - Concept Mapping: <https://canvaspost.northwestern.edu/active-learning-activities/#alc08>
 - Cycle: <https://canvaspost.northwestern.edu/active-learning-activities/#alc09>
 - Divide and Conquer: <https://canvaspost.northwestern.edu/active-learning-activities/#alc10>
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 - Grab Bag: <https://canvaspost.northwestern.edu/active-learning-activities/#alc14>

Types of Engagement

Strategy Area	Definition
Recruit and capture interest	Getting students interested and connected to the course.
Foster self-regulation through check-ins and reflection	Helping students understand where they are in their understanding and helping them to see what they can do to progress their understanding.
Sustain effort and persistence	Getting deeper levels of engagement and depth of understanding – encouraging students to continue to improve and expand their understanding and stay the course.

Strategies: Pinch Points

Think about your pinch points. Which strategies do think your pinch points will fall into?

We'll be going more in depth for each of them.

Strategy Area
Recruit and capture interest
Foster self-regulation through check-ins and reflection
Sustain effort and persistence

Examples

Problem type / reason	Solution
<p>I have an assignment that asks students to analyze a script... My students do not see the value of this assignment. They can do it for class but tend to skip this foundational step in their practice. I need to reinforce it in class many times by using it to problem solve or plan.</p>	<p>Recruit and capture interest</p>
<p>Order of magnitude estimates and numbers in general. Often students will have some formula... They get out a number on their calculator and they copy it down. Frequently the number is way too big or small (the order of magnitude is way off) and if they paused and thought about it they'd probably realize it...</p>	<p>Foster self-regulation through check-ins and reflection</p>
<p>Impatience with errors and debugging. Students will give up and copy or not embrace the struggle (care more about points than understanding and building knowledge).</p>	<p>Sustain effort and persistence</p>

Recruit & Capture interest

Getting students interested and connected to the course.

- [Optimize individual choice and autonomy](#)
- [Optimize relevance, value, and authenticity.](#)
- [Minimize threats and distractions](#)

Question 1 0 pts

What name do you want Prof Berns and your TA to use to address you?

Edit View Insert Format Tools Table

12pt Paragraph B I U A T² ⋮

Question 2 0 pts

What are your pronouns?

- she / her
- he / him
- they / them
- other (see next question)

Question 3 0 pts

Which of these topics are you most interested to cover in the last week of BRIDGE?

- BONDING - What makes molecules stick together?
- REDOX - Where do the electrons go during a reaction?
- THERMOCHEMISTRY - How does heat change the temperature of something?
- GAS LAWS - Feel the pressure as we learn how gases behave under different conditions!



Excerpt from Initial survey of Bridge class

Self-regulate

Helping students understand where they are in their understanding and helping them to see what they can do to progress their understanding.

- [Promote expectations and beliefs that optimize motivation](#)
- [Facilitate personal coping skills and strategies](#)
- [Develop self-assessment and reflection](#)

Skill Spotlight Index page

Self regulate: Facilitate coping skills

[How to read the textbook](#) ↓

Your professor says during class, "For tomorrow read sections 12.3 through 12.6 in the textbook". But what do they actually want you to do?

[How to approach solving a problem](#) ↓

You sit down to do your homework and the word problem stares back at you. What are they even asking you to do? It seems like it came out of nowhere! Did we even learn this stuff?

[How to review your notes for a quiz or exam](#) ↓

There's a quiz tomorrow and you've set aside some time to study tonight. (Good thinking ahead!) But how do you prioritize what to spend your time on? There was a lot of material covered since the last quiz, but how do you go through it all and bring the big ideas together?

[How to outline decisions in a problem](#) ↓

When we went through the example problems in class, everything made sense. But on the homework or on the exam, getting from the initial problem to the final solution feels like "how did they do that"? How can you strengthen your skills for solving many different types of problems?

[How to attend office hours](#) ↓

You've heard about going to office hours, but maybe you don't know what to ask. Or maybe you bring your question and get it answered, but then still feel just as lost the next time you encounter a similar challenge. How do you get the most out of the time you spend in office hours?

[How to struggle](#) ↓

The number one thing that students tell me at the end of the quarter as they start to review for the midterm or final is they don't know how to get started on a problem. By that point there are so many strategies and decisions and it just all gets overwhelming.

Excerpt from First Year Seminar
"Skill Spotlights"

Sustain Effort

Getting deeper levels of engagement and depth of understanding – encouraging students to continue to improve and expand their understanding and stay the course.

- Heighten salience of goals and objectives
- Vary demands and resources to optimize challenge.
- Foster collaboration and community
- Increase mastery-oriented feedback

IN-LAB ACTIVITY

Experimental Procedure

OVERALL ASSIGNMENT:

GOAL 1: DETERMINE THE PERCENT COMPOSITION (BY MASS) OF AN ALKA-SELTZER TABLET

GOAL 2: DETERMINE IF SWALLOWING TWO TABLETS (ONE PACKAGE) WHOLE WILL BURST YOUR STOMACH

To meet both goals, you will need to dissolve some Alka-Seltzer in water and measure the volume of gas it produces under the conditions of atmospheric pressure and a known temperature. There are so many ways to do this, and we are excited to see the creative ways your approach this problem! However, we know you need some information to get started.

Even in the lab, the best container to generate the gas might be an ordinary zip-top bag. Of course you are welcome to try something else too! Here's an illustration depicting one way to limit the amount of ambient air in the bag.

YOU NEED:



Sustain Effort: Saliency of Goals

Sustain Effort: Vary resources

Excerpt from General Chemistry Lab Manual

Element <i>How to measure your progress</i>	Experiment number								My total...			matches letter...	Minimum requirement	
	1	2	3	4	5	6	7	8						
Concept checks, Prelab, and Notebook – Timeliness														A = 6 / 7
<i>Y if ALL COMPONENTS of the experiment are submitted on time *</i>														B = 5 / 7
<i>N if anything is not submitted on time</i>														C = 4 / 7
<i>Total # ✓ for non-grey boxes</i>														
Concept checks – Quality														A = 4.75 / 5
<i>Write your score out of 5 *</i>														B = 4.50 / 5
<i>Take an average of points offered</i>														C = 4.00 / 5
<i>Average pts for non-grey boxes</i>														
Pre-lab – Quality														A = 9.00 / 10
<i>Write your score out of 10</i>														B = 8.00 / 10
<i>Take an average of points offered</i>														C = 7.00 / 10
<i>Average pts for non-grey boxes</i>														
Notebook – Quality														A = 6E, 1G, 0N
<i>Write E, G, or N for each</i>														B = 5E, 1G, 1N
														C = 4E, 1G, 2N
<i>Total E's</i>														
<i>Total G's</i>														
<i>Total N's</i>														
Lab Citizen														A = 7E, 1G, 0N
<i>Write E, G, or N for each</i>														B = 6E, 1G, 1N
														C = 5E, 1G, 2N
<i>Total E's</i>														
<i>Total G's</i>														
<i>Total N's</i>														

Sustain Effort: Mastery oriented feedback

Excerpt from General Chemistry Grade Tracker

Resource List

Strategy Area	Definition
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Resource List

We have a list of resources that might be helpful for you here:

<https://tinyurl.com/UDLresource22>

Take a few moments to look these over and identify one or two that would be helpful for you. It's organized by **information/background**, **strategies**, then **additional resources** (e.g. podcasts, blog posts, books).



OUTLINE

Session 2: Resource List

Recruit Interest

- Overview from CAST
- Active Learning Strategies
- Optimize Relevance, value, and a...
- Syllabus, Assignments, Grading
- Inclusive course design
- Minimize threats and distractions...
- Discipline-specific resources

Self-Regulate

- Overview from CAST
- Active Learning Strategies
- Incorporating Reflection
- Compassion & Community
- Student Mental Health / Trauma-i...

Session 2: Resource List

Below, we've compiled a variety of resources that you may find useful. We've organized them by topic and source so that you may refer back to this as needed and helpful for you. We've brought these sources together from podcasts (including their show notes), the CAST website, teaching centers, and our own experience.

To save this document, go to **File > Download**.

Recruit Interest

Overview from CAST

- (Website) [Optimize individual choice and autonomy](#), CAST UDL guidelines
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Active Learning Strategies

- Affinity Grouping: <https://canvaspost.northwestern.edu/active-learning-activities/#alc01>
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Activity 1

Consider your pinch points. What UDL categories do they relate to?

Look out over the resource list on the handout:

<https://tinyurl.com/UDLresource22>

Use the attached graphic organizer to take some notes. **Think about which resources you want to use to address your pinch points, and why you think each resource will be helpful.**

Activity 1

Pinch point	Related UDL category	Potentially useful resources

Changes: Now, then, later

Now: consider some changes that you can make RIGHT NOW (e.g. within the next day or so)

Then: what could you change in the coming weeks?

Later: what could you change before the next time you teach the course / in the future?

Example: Changes Now, then, later

Now	Make one week of syllabus student-determined (self-regulation)
Then	Incorporate student choice in assignment types (recruiting interest)
Later	Foster collaboration and community (sustain effort and persistence) – e.g. group-based assignments

Activity 2

Look over your pinch points and your ideas about potential ways to address them from Activity 1.

Use the graphic organizer for Activity 2 to give yourself a timeline. Remember to consider your “Return on Investment” – which of your projects do you want to tackle **Now**, **Then**, and **Later**?

You can also use this time to consider how the implementation of the resource will look in your particular course.

Activity 2: Now, then, later

Now			
Then			
Later			

K•W•L - Revisiting the “L”

Directions: Reflect on what you learned from this session.

Know	Want to know	Learned

Next Steps

- **Session 3** will continue this theme with a discussion on Representation
- You can take your pinch points & selected resources to a colleague or learning engineer at your university to get implementation help