LDT 520 Design Blueprint

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Assignment 2.1: Needs Analysis

Determine an organizational performance problem and confirm a need for learning. Describe the learning context, including the organization, its goals, mission, values, stakeholders, and the learning environment. Describe the learners by considering relevant demographics, social characteristics, and conditions that may impact learners' motivation for the learning task, including a discussion of potential issues related to power, equity, and inclusion that must be addressed.

Performance Problem

What is the performance problem?
Will learning solve the performance problem? Is training needed? Justify a need for instruction by providing supporting evidence in practice.

- *If there isn't any current training, pinpoint what's missing or what change is needed.*
- *If instruction for this learning is currently offered, what are the existing goals? How well are they being achieved? What are the gaps for the design and development of instruction?*

What are the benefits of solving this problem? What are the risks of not addressing the problem?

What is the performance problem?

In the current high school learning context, many students struggle to remain engaged when they encounter confusion during academic tasks. Rather than recognizing confusion as a normal and productive part of learning, students often interpret it as personal failure. This frequently leads to disengagement behaviors such as avoidance, silence, task abandonment, or reliance on a single, limited strategy (e.g., asking for answers without understanding).

In practice, this problem manifests as incomplete work, reduced persistence on challenging tasks, and diminished academic confidence over time. These patterns are especially visible in students who already experience academic stress or limited external support, compounding existing performance gaps.

Will learning solve the performance problem? Is instruction needed?

Yes, instruction is a necessary and appropriate response to this performance problem. The core issue is not a lack of effort or motivation alone, but a gap in metacognitive knowledge and skills. Students are expected to monitor their understanding, recognize confusion, and respond strategically, yet many have never received explicit instruction in how to do so.

Specifically, students lack:

- awareness of cognitive and emotional signals that indicate confusion,
- language to describe confusion productively,
- a repertoire of response strategies,
- and routines for monitoring and adjusting learning behaviors.

While environmental and motivational factors influence engagement, evidence from mentoring and classroom observations suggests that when students are taught concrete strategies and supported in using them, they demonstrate increased willingness to persist. This indicates that instruction can directly address a significant portion of the problem.

If instruction is currently offered, what is missing?

There is no consistent or systematic instruction focused on metacognitive awareness and confusion management. Existing supports tend to emphasize content remediation or compliance rather than helping students develop transferable learning skills. As a result, students are left to infer how to manage confusion on their own, leading to uneven and often ineffective approaches.

Benefits of solving the problem and risks of not addressing it

Benefits of addressing the problem include:

- increased persistence during cognitively demanding tasks,
- improved quality of help-seeking behaviors,
- stronger academic self-efficacy,

- and improved performance across subject areas due to better learning regulation.

Risks of not addressing the problem include:

- continued disengagement and avoidance behaviors,
- widening achievement gaps,
- reinforcement of fixed beliefs about intelligence,
- and increased equity concerns, as students with fewer supports are disproportionately affected

Organization and Stakeholders

What does this organization do?
What is the organizational mission and/or values, if any?
What are the broader organizational strategic goals?
Is there any philosophy or taboos of the larger community in which the organization exists?

Organizational context

This project is situated in a Title I public high school serving a diverse student population in grades 9–12. The organization's primary function is to provide secondary education while also addressing social, emotional, and academic barriers that impact learning.

Organizational values and strategic goals

In practice, the organization values student growth, academic progress, and engagement. Strategic goals relevant to this project include improving course completion, increasing persistence in learning, and supporting students in developing skills that contribute to long-term academic success.

Community philosophies and contextual pressures

Within the school community, there is a strong social pressure to avoid appearing confused or academically weak. For many students, publicly acknowledging uncertainty carries social risk. This cultural dynamic interacts with identity, prior experiences, and power structures in ways that directly influence participation and motivation.

Stakeholders

Key stakeholders include:

- students (primary beneficiaries),
- teachers and academic support staff,
- mentoring and intervention staff,
- school leadership,
- and families and caregivers.

Each group has a vested interest in reducing disengagement and supporting students in developing effective learning behaviors.

Learning Environment

What is the learning environment like?
What are the characteristics of the teachers/trainers/facilitators who will be delivering this training and using these materials?
Are there existing curricula into which this piece of instruction must fit? If so, what is the philosophy, strategy, or theory used in these materials?
What hardware is commonly available in the potential learning environments? Are computer workstations available? What kind, how many? What software or other materials are available?
What are the characteristics of the classes and facilities that will use the new instruction?
What are the characteristics of the school system or organization in which the new instruction will take place?

Description of the learning environment

The learning environment is characterized by diverse learner needs, time constraints, and competing academic demands. Students often experience high cognitive and emotional load, which can reduce their margin for learning when challenges arise.

Psychological safety varies across classrooms, and students' willingness to engage during uncertainty is strongly influenced by prior experiences with feedback, peer dynamics, and authority.

Facilitators

Instruction may be delivered by teachers, academic support staff, or mentors. Facilitators are typically experienced practitioners but may not have formal training in learning science. Therefore, instructional materials must be practical, clearly structured, and easy to implement.

Curricular and structural constraints

This instruction must integrate into existing structures such as advisory periods, intervention blocks, or mentoring sessions. It should be modular and adaptable, requiring minimal additional instructional time.

Technology and materials

Students primarily use Chromebooks and have access to standard web-based tools. Instruction should rely on low-cost or free resources and function within common digital learning platforms.

Learners

Create a profile of your target learner population *by making some thoughtful general assumptions from what you already know about the learners in your organization in terms of relevant prior knowledge, motivation, and social characteristics, along with any available existing demographic data. Analyze current learners, not hoped-for learners.*

- *What do they already know about the topic? Do they have any previous experience with the learning task?*
- *Why would engaging in this training be valuable, important, beneficial, or cost-effective for them?*
- *Are there any cultural differences or contextual factors that may impact their motivation?*
- *What are some potential issues related to power, equity, and inclusion that should be considered and mitigated?*

*Define **motivation**, crediting at least one resource from the course materials using an APA-formatted in-text citation.*
Identify 2 strategies** you may consider to address learners' identities and promote motivation for the training. **Cite a relevant learning principle from Lovett et al. (2023).

Learner profile

The target learners are high school students in a Title I context with varied academic preparation, cultural backgrounds, and external responsibilities. Many students experience stress related to performance, identity, and belonging in academic settings.

Prior knowledge and experience

Students are familiar with experiencing confusion but often lack the tools to interpret and respond to it effectively. Some students rely on limited strategies such as guessing or asking for answers, while others disengage entirely when confused.

Value and relevance of the training

This training is valuable to learners because it directly addresses challenges they encounter across subjects. By learning how to recognize and respond to confusion, students gain tools that improve efficiency, reduce frustration, and increase academic confidence.

Cultural and contextual factors affecting motivation

Motivation is shaped by peer norms, prior academic experiences, and perceived safety in expressing uncertainty. For some students, help-seeking and risk-taking have been historically discouraged or punished, affecting their willingness to engage.

Power, equity, and inclusion considerations

Students differ in how classroom power dynamics affect them. Some students are more likely to be overlooked or judged when expressing confusion. Learners with higher external load or marginalized identities may have fewer opportunities to recover from disengagement. Instruction must normalize uncertainty, offer multiple ways to participate, and avoid reinforcing inequitable participation patterns.

Definition of Motivation

Motivation refers to the processes that initiate, direct, and sustain learners' engagement and effort in learning activities. A key distinction is between intrinsic motivation, in which learners engage for inherent satisfaction, and extrinsic motivation, in which engagement is driven by outcomes external to the activity itself. The quality of motivation matters because it influences persistence, strategy use, and long-term learning outcomes (Kaplan, 2013; Lovett et al., 2023).

Instructional Strategies to Address Identity and Promote Motivation

Strategy 1: Vary learning activities and provide meaningful choice

Providing choice in how students engage with and demonstrate learning supports autonomy and reduces unnecessary threat. For example, students may reflect privately, complete scenario-based decisions, or engage in structured discussion depending on comfort and context. This strategy acknowledges learner differences and promotes motivation by increasing perceived control.

Evidence-based rationale: This strategy addresses the learning principle that learners differ from each other on multiple dimensions—including identity, experience, and comfort with participation—and these differences influence their learning and performance. Supporting autonomy enhances motivation and engagement (Lovett et al., 2023).

Strategy 2: Make uncertainty safe and productive

Explicitly framing confusion as a normal and valuable part of learning reduces shame and disengagement. Modeling how to work through uncertainty and validating effort during challenge supports persistence and psychological safety.

Evidence-based rationale: This strategy addresses the learning principle that the classroom environment we create can profoundly affect students' learning. When learners feel safe to express uncertainty in supportive environments, motivation sustains learning behaviors and students are more likely to persist and apply strategies rather than disengage (Lovett et al., 2023).

Thinking About Your Own Thinking
Reflect on your thought process completing the assignment.
This needs analysis was developed by examining the learning context and learners before proposing instructional solutions. I intentionally distinguished between skill-based gaps that can be addressed through instruction and motivational or environmental factors that influence engagement. My analysis draws on direct experience with learners and aligns with evidence-based learning principles emphasizing motivation, identity, and the impact of the learning environment. This approach ensures that design decisions are grounded in both theory and practice and supports the development of an instructional solution that is relevant, equitable, and sustainable.

References

Kaplan, A. (2013). Intrinsic and extrinsic motivation. In E. M. Anderman & L. H. Anderman (Eds.), *Psychology of classroom learning: An encyclopedia*. The Gale Group, Inc.

Lovett, M. C., Bridges, M. W., DiPietro, M., Ambrose, S. A., & Norman, M. K. (2023). *How learning works: 8 research-based principles for smart teaching* (2nd ed.). John Wiley & Sons, Inc.

Assignment 3.1: Learning Goals

Continue the needs analysis by analyzing the learning task. Define the overall instructional goal and major learning tasks needed to close the skills gap and address the performance problem. Design clear, specific, and measurable module-level learning outcomes required for the major learning task.

Overall Instructional Goal

Given the instruction needed, state one major overall learning goal. The more focused the goal, the easier the design and development of the learning outcomes, instructional strategy, and assessment will be. What do learners not know how to do as part of the performance problem?

Students do not know how to productively respond to confusion during academic tasks, which leads to disengagement and task abandonment. By the end of this instruction, students will effectively manage confusion by recognizing confusion signals, selecting appropriate response strategies, and monitoring their learning progress.

Major Learning Tasks

What tasks do learners need to learn to attain the goal? What are the mental and/or physical steps that someone must go through in order to complete this learning goal? List up to 10 major learning tasks appropriate to your goal. You may need to consolidate or break up some tasks to make sure they're comparable in size and that a similar amount of mental effort seems to be required for each task. Highlight one of these major tasks to inform learning outcomes for one module, session, or unit.

1. Recognize cognitive and emotional signals that indicate confusion during learning
2. Distinguish between productive confusion (learning edge) and stuck confusion (need for help)
3. Describe confusion experiences using specific academic language
4. Identify common causes of confusion in academic tasks (unclear instructions, missing prior knowledge, cognitive overload, etc.)
5. Compare and select appropriate response strategies for different types of confusion
6. **Apply a systematic protocol for working through confusion in real-time** *[Selected for module focus]*
7. Evaluate the effectiveness of confusion management strategies after use
8. Monitor understanding continuously during learning tasks

9. Adjust learning strategies based on ongoing self-assessment
10. Reflect on personal confusion patterns and track growth over time

Module Learning Outcomes (MLO)

Given your major learning task, create 5 learning outcomes that align with the overall learning goal.

- *Create one learning outcome for each knowledge type: factual, conceptual, procedural, and metacognitive knowledge (in that order).*
- *Create one learning outcome to promote motivation, by promoting learners' self-efficacy or value for the learning task.*
- *Identify the knowledge type and cognitive process required to complete each learning outcome. Make sure there are both lower and higher-level outcomes for meaningful learning.*

By the end of the learning experience, learners will be able to:

1. **Recall the five steps of the confusion management protocol (pause, identify, select strategy, act, reflect).**

   Knowledge Type: A. Factual Knowledge (Aa. Knowledge of terminology and specific details) *Cognitive Process:* 1. Remember (1.2 Recalling) *Level:* Lower-order

2. **Explain the relationship between different types of confusion (task-based, knowledge-based, emotional) and appropriate response strategies.**

   Knowledge Type: B. Conceptual Knowledge (Bb. Knowledge of principles and generalizations) *Cognitive Process:* 2. Understand (2.7 Explaining) *Level:* Lower-order

3. **Implement the confusion management protocol when encountering difficulty during academic tasks across multiple subjects.**

   Knowledge Type: C. Procedural Knowledge (Ca. Knowledge of subject-specific skills and algorithms) *Cognitive Process:* 3. Apply (3.2 Implementing) *Level:* Higher-order

4. **Monitor personal confusion signals in real-time and evaluate which response strategies are most effective for different learning situations.**

Knowledge Type: D. Metacognitive Knowledge (Dc. Self-knowledge) *Cognitive Process:* 5. Evaluate (5.1 Checking/monitoring) *Level:* Higher-order

5. **Demonstrate increased confidence in ability to work through confusion by persisting on challenging tasks and seeking help strategically rather than avoiding difficulty.**

   Purpose: Promotes self-efficacy by building confidence through successful strategy use *Knowledge Type:* D. Metacognitive Knowledge (self-awareness of capabilities) *Cognitive Process:* 3. Apply (demonstrating learned behavior) *Level:* Applied/behavioral demonstration

Thinking About Your Own Thinking

Reflect on your thought process completing the assignment.

This learning goal analysis was developed by systematically breaking down the overall instructional goal into discrete, sequenced learning tasks that students must master. I selected Task #6 (applying a systematic protocol) as the focal point because it represents a critical procedural skill that requires foundational knowledge (knowing the steps and concepts) and supports advanced metacognitive development (monitoring and evaluating effectiveness).

The five module learning outcomes were intentionally designed to span the full range of Bloom's revised taxonomy, from lower-order thinking (remembering steps, understanding relationships) to higher-order thinking (applying protocols, evaluating effectiveness). This ensures students build a strong foundation before moving to more complex cognitive processes.

The inclusion of a specific motivation outcome addresses the affective dimension of learning—students who lack confidence in managing confusion often avoid challenges entirely. By explicitly targeting self-efficacy through demonstration of persistence and strategic help-seeking, the instruction acknowledges that motivation and cognition work in tandem to support successful learning.

This approach aligns with evidence-based principles emphasizing goal-directed practice and targeted feedback. Clear, measurable outcomes enable both students and instructors to assess progress and identify areas needing additional support.

Assignment 4.1: Assessment Plan

Design a comprehensive assessment plan across Kirkpatrick's Four Levels of Evaluation that measures each of the MLOs. Include assessment methods with a few sample items or questions. Identify how each MLO will be assessed and a timeline for implementation. Label each assessment method with the corresponding MLO(s) being assessed.

Level of Evaluation	Assessment Methods	Timeline
Level 4 Results Level 4 evaluates the degree to which target outcomes are met as a result of the training.	*Begin by restating the overall learning goal.* *What metrics will help measure the overall impact of the training on the performance problem and overall organizational goals or mission? Think about the specific, observable, and measurable critical behaviors that, if performed reliably, will have the biggest impact on targeted outcomes.* **Begin by restating the overall learning goal:** By the end of this instruction, students will effectively manage confusion by recognizing confusion signals, selecting appropriate response strategies, and monitoring their learning progress, thereby reducing disengagement and task abandonment. **Metrics to measure impact on performance problem and organizational goals:** **1. Course completion rates** (assesses MLO 3, MLO 4, MLO 5) • **Metric:** Percentage of assignments submitted vs. started across all subjects • **Baseline:** Track completion rates for 30 days before instruction • **Post-instruction:** Track completion rates 60-90 days after instruction	**Timeline:** 60-90 days post-instruction

	• **Target:** 15-20% increase in assignment completion rates for students who received instruction • **Rationale:** The performance problem involves incomplete work due to disengagement when confused. If students implement the protocol (MLO 3), monitor their confusion (MLO 4), and persist with confidence (MLO 5), they should complete more work. **2. Persistence on challenging tasks** (assesses MLO 4, MLO 5) • **Metric:** Average time students engage with difficult problems before seeking help, measured through teacher observation logs and student self-reports • **Baseline:** Teachers track typical time-to-give-up before instruction • **Post-instruction:** Teachers track time-to-give-up 60-90 days after instruction • **Target:** Students persist 5-10 minutes longer on challenging tasks before seeking help • **Rationale:** Students currently abandon tasks quickly when confused. Effective monitoring of confusion signals (MLO 4) and increased confidence (MLO 5) should increase productive struggle time. **3. Quality of help-seeking behaviors** (assesses MLO 3, MLO 5) • **Metric:** Ratio of strategic questions (asking for clarification, explanation, or strategy hints) vs. avoidance questions (asking for direct answers) • **Measurement:** Teachers categorize student questions during 2-week observation periods before and after instruction • **Target:** 40% increase in strategic help-seeking questions	

	• **Rationale:** Students who implement the protocol (MLO 3) and demonstrate strategic help-seeking (MLO 5) should ask better questions that support learning rather than bypass confusion.	

Level 3 Behavior
Level 3 evaluates the degree to which learners apply what they learned following the training in the context of practice.
	How will you measure whether learners demonstrated learning by applying their new knowledge/skills back on the job? How long after the training will this data be collected and why?
	
	Critical behaviors that will influence Level 4 results:
	
	1. Students apply the confusion management protocol when encountering difficulty during academic tasks (assesses MLO 3)
	
	• **Observable behavior:** When stuck, student pauses, identifies type of confusion, selects appropriate strategy, applies strategy, reflects on effectiveness
	• **Measurement method:** Teacher observation checklist during class work time (observe 3-5 students per class period across multiple weeks)
	• **Sample observation items:**
	  ○ Student pauses when stuck rather than immediately giving up or asking for answer
	  ○ Student verbalizes or shows evidence of identifying confusion type (e.g., "I don't understand this word" vs. "I don't know what the question is asking")
	  ○ Student tries appropriate strategy before seeking help
	  ○ Student adjusts approach based on whether strategy worked
	
	2. Students monitor confusion signals in real-time and evaluate strategy effectiveness (assesses MLO 4)
		Timeline: 30-60 days post-instruction

	• **Observable behavior:** Student recognizes when confused, accurately describes confusion, evaluates whether chosen strategy helped
	• **Measurement method:**
	  ○ Student self-report survey asking "In the past two weeks, how often did you notice when you were confused during classwork?"
	  ○ Teacher interviews with 5-10 students asking them to describe a recent time they used confusion strategies
	• **Sample survey items:**
	  ○ "In the past two weeks, I noticed when I was confused during classwork" (Never / Rarely / Sometimes / Often / Always)
	  ○ "When I got confused, I knew which strategy to try" (Never / Rarely / Sometimes / Often / Always)
	  ○ "I checked whether my strategy helped me understand better" (Never / Rarely / Sometimes / Often / Always)
	
	3. Students demonstrate increased confidence by persisting and seeking help strategically (assesses MLO 5)
	
	• **Observable behavior:** Student continues working when confused rather than shutting down; asks questions that support understanding rather than requesting direct answers
	• **Measurement method:**
	  ○ Teachers complete brief behavior rating scale for participating students
	  ○ Student self-efficacy survey
	• **Sample items:**
	  ○ Teacher rating: "When this student encounters a challenging task, they typically: (1) Give up quickly, (2) Try	

	briefly then stop, (3) Persist with some strategies, (4) Persist with multiple strategies" ○ Student survey: "I feel confident I can figure things out when I'm confused in class" (Strongly Disagree to Strongly Agree)	
Level 2 Learning Level 2 evaluates the degree to which learners acquire the intended knowledge, skills, attitudes, confidence and commitment based on active participation in the training.	*How will you support learners with formative assessment? How will you evaluate learning, attitudes, and confidence at the end of the training? What behavior needs to be observed?* **Level of Evaluation:** Level 2 Learning - Level 2 evaluates the degree to which learners acquire the intended knowledge, skills, attitudes, confidence and commitment based on active participation in the training. **Assessment Methods:** **Formative Assessment (during instruction):** **1. Practice scenario responses with peer feedback** (assesses MLO 3) ● **Method:** Students respond to written confusion scenarios during instruction, share responses with partner, provide peer feedback using checklist ● **Sample scenario:** "You're working on a math problem. You understand what the question is asking, but you've tried two different approaches and both gave you the wrong answer. What do you do?" ● **Peer feedback checklist:** ○ Did your partner identify what type of confusion this is? (knowledge-based, unclear task, strategy didn't work) ○ Did they suggest an appropriate strategy?	**Timeline:** Throughout instruction (formative); Final session (summative)

	○ Did they explain how they'd know if the strategy worked? ● **Timing:** Session 2-3 of instruction **2. Think-aloud protocol practice** (assesses MLO 2) ● **Method:** Students verbally walk through their thinking when approaching a confusing task, instructor provides immediate feedback ● **Sample prompts:** ○ Student explains: "I'm confused because... (task-based/knowledge-based/emotional)" ○ Student explains: "This type of confusion means I should... (strategy choice)" ○ Student explains: "I'll know this worked if..." ● **Timing:** Sessions 3-4 of instruction **3. Self-assessment of protocol steps** (assesses MLO 1) ● **Method:** After practicing with scenarios, students list the five protocol steps from memory and check their accuracy ● **Sample item:** "List the five steps of the confusion management protocol in order" ● **Timing:** End of each instructional session **Summative Assessment (end of instruction):** **1. Scenario-based performance assessment** (assesses MLO 3) ● **Method:** Students receive 2-3 written scenarios depicting confusion situations, must write out how they would use protocol, evaluated with rubric ● **Sample scenario:** "You're reading a history article for class. The author uses several terms you don't recognize, and you've reread	

	the same paragraph three times but still don't understand the main idea. Apply the confusion management protocol. Write out what you would do at each step." ● **Rubric criteria:** ○ Pause: Recognizes need to stop and assess (2 pts) ○ Identify: Correctly identifies confusion type and cause (2 pts) ○ Select Strategy: Chooses appropriate strategy for this type of confusion (3 pts) ○ Act: Describes how to implement strategy (2 pts) ○ Reflect: Explains how to evaluate if strategy worked (1 pt) ● **Timing:** Final instructional session **2. Knowledge check quiz** (assesses MLO 1, MLO 2) ● **Method:** 10-question quiz covering protocol steps, confusion types, and strategy matching ● **Sample items:** ○ "What is the first step of the confusion management protocol?" (Multiple choice) ○ "Match each type of confusion with the most appropriate strategy" (Matching) ○ "True or False: All confusion is bad and should be avoided" ○ "Explain in 1-2 sentences why it's important to identify what type of confusion you're experiencing" ● **Timing:** Final instructional session	
Level 1 Reaction Level 1 evaluates the degree to which learners find the training relevant, satisfactory, and engaging.	*How will you measure learners' reactions during and at the end of the training? What assessment methods will be used and what is an example of an item or question?*	**Timeline:** Throughout instruction (formative); Final

	Level of Evaluation: Level 1 Reaction - Level 1 evaluates the degree to which learners find the training relevant, satisfactory, and engaging. **Assessment Methods:** **Formative assessment (during training):** **1. Exit tickets** ● **Method:** At end of each session, students complete 2-minute written response ● **Sample items:** ○ "One thing I learned today that I'll actually use:" ○ "One thing I'm still confused about:" ○ "Today's lesson was: Not useful / Somewhat useful / Very useful" ● **Purpose:** Quick check on clarity and relevance; instructor can address confusion in next session ● **Timing:** End of each instructional session **2. Engagement observation** ● **Method:** Instructor notes level of participation, questions asked, practice completion during each session ● **Indicators:** Are students participating in practice? Asking clarifying questions? Appearing engaged vs. distracted? ● **Timing:** Throughout instruction **Summative assessment (end of training):** **1. End-of-training survey**	session (summative)

	• **Method:** Anonymous online survey (Google Forms) completed in final 5 minutes of last session
	• **Sample items:**
	  ○ "The confusion management strategies taught in this training are relevant to my schoolwork" (Strongly Disagree to Strongly Agree)
	  ○ "I feel prepared to use these strategies when I get confused in class" (Strongly Disagree to Strongly Agree)
	  ○ "The instruction was clear and easy to follow" (Strongly Disagree to Strongly Agree)
	  ○ "The practice activities helped me learn" (Strongly Disagree to Strongly Agree)
	  ○ "What was most helpful about this training?"
	  ○ "What would you change to make this training better?"
	• **Purpose:** Gauge satisfaction, perceived relevance, and identify areas for improvement in future delivery
	• **Timing:** Final instructional session	

Thinking About Your Own Thinking
Reflect on your thought process completing the assignment.
This assessment plan was designed by working backwards from Level 4 results to ensure all assessments align with the ultimate goal of reducing student disengagement when confused. Starting with the organizational performance problem identified in the needs analysis—that students disengage and abandon tasks when confused—I identified specific, measurable outcomes at Level 4 that would indicate this problem is being addressed: increased course completion rates, longer persistence on challenging tasks, and improved quality of help-seeking behaviors. The Level 3 critical behaviors were selected based on my five module learning outcomes from Assignment 3.1. Each critical behavior directly corresponds to one or more MLOs: applying the protocol (MLO 3 - Procedural), monitoring and evaluating strategies (MLO 4 -

Metacognitive), and demonstrating confidence through persistence and strategic help-seeking (MLO 5 - Motivation). I included specific measurement methods that are feasible in a high school setting, such as teacher observation checklists and brief student surveys, rather than more resource-intensive approaches.

For Level 2, I incorporated both formative and summative assessments as emphasized in the Johnson and Jenkins reading. Formative assessments like peer feedback on practice scenarios (MLO 3), think-aloud protocols (MLO 2), and self-assessment of protocol steps (MLO 1) provide opportunities for targeted feedback during instruction, aligning with Lovett et al.'s principle that practice and feedback must be coupled. The summative assessments measure whether students can demonstrate the procedural knowledge outcome (MLO 3) through scenario-based performance tasks, which is more authentic than simply testing recall of protocol steps. The knowledge check quiz addresses both factual (MLO 1) and conceptual (MLO 2) knowledge.

Level 1 assessments were designed to be quick and efficient while still providing actionable information. Exit tickets allow for rapid formative feedback that can inform adjustments between sessions, while the end-of-training survey captures students' perceptions of relevance and preparation—both important indicators from Kirkpatrick's model that the training has potential to influence behavior change.

A key consideration throughout was ensuring assessments are realistic given the constraints of a Title I high school setting. Teachers have limited time for complex data collection, so I prioritized methods that could be integrated into existing classroom routines (observations during normal work time, brief surveys) rather than requiring extensive additional resources. The timelines for Levels 3 and 4 (30-90 days) allow sufficient time for new behaviors to develop and show impact while remaining within a single academic semester for practical evaluation purposes. This backwards design approach, recommended in the Kirkpatrick reading, ensured that each level of assessment builds toward measuring the ultimate organizational impact while maintaining alignment with specific learning outcomes.

Assignment 5.1: Learning Activities

Design the learning activities by describing the specific instructional events for your course or training. Ensure instructional events are appropriate for your learners to achieve the learning outcomes. Use evidence-based instructional design strategies to guide your design.

Instructional Platform: This instruction will be delivered **synchronous, on-ground** across four sessions of approximately 30-40 minutes during advisory periods or intervention blocks. Students meet in person with a facilitator to engage in structured activities that build metacognitive awareness and confusion management skills.

Instructional Event	Facilitator / Asynchronous Instruction	Learner Actions
Gain Attention Session 1 (first 5 minutes)	Facilitator poses a relatable scenario: "Raise your hand if this has happened to you: You're working on homework, you get stuck, and you just... stop. You close the book or put your phone away and tell yourself you'll do it later." Pause for show of hands. "Today we're going to learn why that happens and what to do about it." This approach uses **uncertainty and surprise** to capture attention by validating a common but rarely discussed experience.	Students physically respond (raising hands), making their shared experience visible. This cognitive engagement activates attention and establishes psychological safety by normalizing struggle. Students recognize this training addresses a real problem they experience.
Present Learning Outcomes Session 1 (3 minutes)	Facilitator displays the five learning outcomes visually on board or slide and reads them aloud: "By the end of this training, you will be able to: recall the five-step confusion protocol, explain which strategies work for different types of confusion, use the protocol when you	Students read along silently or aloud. Cognitively, students are forming expectations about what they will learn and connecting outcomes to their own experiences with academic struggle. This sets a mental

	get stuck, notice when you're confused in real-time and pick the best strategy, and feel more confident working through hard tasks instead of giving up." Facilitator explicitly connects outcomes to students' goals: "These skills work in every class and will help you finish more work with less frustration."	framework for the upcoming instruction.

Activate Prior Knowledge Session 1 (7 minutes)	**Activity: "Confusion Is Not Failure" (Opening Phase)** Facilitator distributes index cards and asks students to write anonymously: "Describe a time you felt confused and wanted to quit" and "What does your body do when you're confused?" Facilitator collects cards, reads several examples aloud without identifying students, and validates responses: "Listen to how many of you experience the exact same thing." This activity applies **Lovett's strategy Use Brainstorming to Reveal Prior Knowledge**. Students already have extensive experience with confusion but lack productive language and frameworks to describe it. Brainstorming makes implicit knowledge explicit and surfaces both accurate understanding (confusion is uncomfortable) and potentially problematic beliefs (confusion means failure).	Students write individually, accessing episodic memories of specific confusion experiences. Cognitively, they are retrieving prior knowledge from long-term memory and preparing to connect new frameworks to existing experiences. The anonymous format reduces performance anxiety and encourages authentic responses.

Present New Knowledge Sessions 1-2 (Sessions 1: 13 min, Session 2: 20 min)	**Session 1 - Conceptual Framework (13 minutes):** Facilitator introduces three confusion types (task-based, knowledge-based, emotional) using student-generated examples from brainstorming. "When you said 'I didn't know what the question was asking' - that's task-based confusion. When you said 'I didn't understand the vocabulary' - that's knowledge-based. When you said 'I panicked' - that's emotional confusion." Students complete **Personal Confusion Signal Map** (7 minutes): Individual handout with checkboxes for thoughts/body/emotions/behavior and concrete examples (rereading same line, zoning out, tight chest, wanting to quit). Students circle their signals and star their earliest warning sign. Facilitator connects to protocol: "The first step is 'Pause.' You can only pause if you notice you're confused. You just identified your personal early warning system." **Session 2 - Procedural Knowledge (20 minutes):**	**Session 1:** Students listen actively and begin categorizing their own confusion experiences using new conceptual language. Students individually complete the Signal Map, engaging in metacognitive reflection about their personal confusion patterns. This builds **metacognitive knowledge of self**, which Lovett identifies as prerequisite to self-regulation. **Session 2:** Students observe modeling and complete guided notes with three columns: "Step," "What It Looks Like," "What I'd Say to Myself." After modeling, students work in pairs to complete note scaffold. Cognitively, students are encoding the protocol steps through dual coding (visual protocol + verbal think-aloud) and actively processing by translating observed behavior into their own language.

	Facilitator introduces five-step protocol visually (Pause, Identify, Select Strategy, Act, Reflect) and models it via think-aloud with an authentic confusion scenario. Instructor genuinely encounters difficulty (e.g., dense text with unfamiliar vocabulary) and verbalizes each protocol step: "Okay, I'm stuck. Let me pause... I notice my brain wants to skip ahead but I don't understand this part yet. What type of confusion is this? I'm missing background knowledge about this term. So I need a strategy for missing knowledge—I could reread, ask someone, or look it up. Let me try rereading the previous paragraph first... Did that help? I understand the term now, so yes." This applies **Lovett's strategy Model Your Metacognitive Processes**. Students are novices at confusion management; modeling makes invisible cognitive processes visible and shows that even instructors experience and productively manage confusion.	

Provide Learning Guidance Sessions 2-3 (Session 2: 5 min, Session 3: 8 min)	**Session 2 - Scaffolding Procedural Skill (5 minutes):** After modeling, facilitator provides visual organizer showing how protocol maps to confusion types and provides retrieval practice: Students individually list five protocol steps from memory on index card, then check accuracy with partner. This low-stakes retrieval strengthens recall without performance pressure. Facilitator explicitly addresses strategy selection: "Different confusion types need different strategies. If you don't know a word (knowledge-based), rereading won't help—you need to look it up or ask. If you don't understand what the question wants (task-based), you need to break it down or find an example." **Session 3 - Supporting Transfer (8 minutes):**	**Session 2:** Students engage in retrieval practice, actively reconstructing knowledge rather than passively reviewing. Working with a partner provides immediate feedback and reduces anxiety. Students process strategy-matching logic, building conditional knowledge about when to apply which strategies. **Session 3:** Students write If/Then plans, creating personalized implementation intentions. Cognitively, this moves from declarative knowledge ("I know the steps") to strategic planning ("I know when and how I'll use them"). Students keep this as a reference tool.

	Before scenario practice, facilitator provides explicit guidance on metacognitive monitoring using **If/Then Planning**: Students complete one sentence at end of Activity 2 materials: "If I notice _____, then I will _____." Examples displayed: "If I reread twice → ask a partner," "If I feel frustrated → slow down and label the type." This strategy supports students' planning and goal-setting, key components of the forethought phase in self-regulated learning (Lovett et al., 2023), by pre-planning responses that reduce cognitive load in stressful moments.	

Provide Practice Opportunities Session 3 (28 minutes)	**Activity: "Strategy Matching Lab" with Metacognitive Enhancements (28 minutes)** Students work in pairs with 4 scenario cards (reduced from 6-8 to manage cognitive load) depicting authentic confusion situations: math problem where method isn't working, reading with unfamiliar metaphor, group project where others use unknown terms, test anxiety with memory blocking. For each scenario (~7 min per scenario): 1. Pairs read scenario and identify confusion type (2 min) 2. **Individual Confidence Rating (30 sec):** Before discussing, each student privately rates: "How confident am I that I know a good strategy? (1-5)" on Strategy Effectiveness Tracker worksheet 3. Pairs brainstorm 2 strategies, select best, justify choice, map to protocol using visual organizer (3 min) 4. **Confidence Calibration (30 sec):** Students revisit confidence rating: "Would I change my rating now? Why?" 5. **Strategy Effectiveness Tracker (1 min):** Pairs mark strategy: ✅ likely to help, ⚠ might help, ❌ probably won't help	Students apply procedural knowledge (implementing protocol) while developing metacognitive skills (monitoring confidence, evaluating effectiveness). The **Confidence Calibration** and **Strategy Effectiveness Tracker** build metacognitive judgment accuracy, addressing Lovett's finding that students are poor judges of their own knowledge (p. 192-193). Pair work distributes cognitive load and provides peer feedback. Students engage in elaborative rehearsal by explaining their reasoning. The **Regulation Replay** normalizes iteration and builds adaptive capacity, addressing Zimmerman's cyclical model requiring strategy revision after feedback. Pattern recognition promotes reflection and consolidates conditional knowledge about what works when.

	After all scenarios, **Regulation Replay (5 min):** Facilitator selects most challenging scenario and asks class: "Imagine your strategy didn't work. What would you try next?" Pairs identify backup strategy, 2-3 pairs share. Facilitator explicitly states: "Regulation isn't one-and-done. Self-regulated learners expect to adjust and try again." **Pattern Recognition (4 min):** Pairs review completed tracker: "Which confusion types did you feel most/least confident about? Which strategies did you rate as most effective? Do you see patterns?"	
Provide Formative Feedback Sessions 2-4 (ongoing)	**Session 2:** Facilitator circulates during paired note completion after modeling, checking for understanding of protocol steps and providing clarification. Immediate verbal feedback corrects misconceptions (e.g., "Remember, 'Identify' means naming the type of confusion, not just saying 'I'm confused'"). **Session 3:** During Strategy Matching Lab, facilitator circulates and provides targeted feedback using questions rather than direct correction: "You said this is knowledge-based confusion. What clue told you that?" or "You chose to reread. How will you know if that strategy worked?" This scaffolds metacognitive monitoring without removing cognitive engagement.	Students receive immediate feedback during practice, allowing them to correct errors before they become ingrained. Feedback is formative—focused on improving understanding rather than assigning grades. Students process feedback by comparing their approach to facilitator guidance and peer examples. They adjust their understanding in real-time, strengthening accurate mental models.

	Facilitator also provides feedback during Pattern Recognition by highlighting effective reasoning: "I heard this pair say they noticed emotional confusion is harder for them to manage. That self-awareness is exactly what you need to improve." **Session 4:** After practice scenarios in summative assessment (Event 8), facilitator provides written feedback on rubrics highlighting strengths and specific areas for improvement, emphasizing growth rather than deficits.	During Pattern Recognition, students hear feedback that validates their self-assessment skills, building confidence in their metacognitive judgments.
Assess Performance Session 4 (25 minutes)	**Scenario-Based Performance Assessment (18 minutes):** Students receive 2-3 written scenarios individually (not in pairs) depicting confusion situations across different subjects. Students write how they would apply the confusion management protocol at each step. Example scenario: "You're reading a history article for class. The author uses several terms you don't recognize, and you've reread the same paragraph three times but still don't understand the main idea. Apply the confusion management protocol. Write out what you would do at each step." Scoring rubric assesses: • Pause: Recognizes need to stop and assess (2 pts) • Identify: Correctly identifies confusion type	Students independently demonstrate procedural knowledge (MLO 3) by applying the protocol to authentic scenarios. Writing out each step shows whether students can implement the protocol without scaffolding. This assesses higher-order thinking (application) rather than just recall. Students must analyze the scenario, identify confusion type (MLO 2, conceptual knowledge), select appropriate strategy, and explain their reasoning (MLO 4, metacognitive evaluation).

	and cause (2 pts) • Select Strategy: Chooses appropriate strategy for this confusion type (3 pts) • Act: Describes how to implement strategy (2 pts) • Reflect: Explains how to evaluate if strategy worked (1 pt) **Knowledge Check Quiz (7 minutes):** 10-question quiz covering protocol steps, confusion types, and strategy matching. Sample items: "What is the first step of the confusion management protocol?" (multiple choice), "Match each confusion type with the most appropriate strategy" (matching), "Explain in 1-2 sentences why it's important to identify what type of confusion you're experiencing."	The knowledge check assesses lower-order outcomes: recalling protocol steps (MLO 1, factual knowledge) and understanding relationships between confusion types and strategies (MLO 2, conceptual knowledge). Performance on both assessments provides evidence of learning across all five MLOs.

Enhance Transfer Session 4 (5 minutes)	**Metacognitive Reflection Exit Ticket (3 minutes):** Students complete individual quick-write responding to prompts: "Which confusion type is hardest for you to manage? What's one strategy you'll actually use this week? In which class will you try it first?" Students submit on index cards. Facilitator reads 3-4 responses aloud (with permission or anonymously) to show diverse applications: "I heard one person say they'll use this in math, another in English, another when studying for a test. That's exactly right—this protocol works anywhere you learn." **Closing (2 minutes):** Facilitator explicitly connects training to real-world application and provides encouragement: "Confusion isn't failure. It's your brain telling you it's working on something hard. The five steps you learned give you a tool to use anywhere, anytime. Try it this week and notice what happens. You might be surprised how often you use it."	Students engage in metacognitive reflection, thinking beyond the training context to authentic application. By specifying which class and which strategy, students create concrete implementation plans that increase likelihood of transfer. This addresses Lovett's finding that students often fail to transfer skills because knowledge becomes too context-dependent (p. 138). Explicitly planning application across subjects reduces this barrier. Hearing peers' diverse applications normalizes experimentation and shows that the protocol is flexible rather than rigid. Students leave with both skills and concrete plans to use them, supporting MLO 5 (increased confidence through strategic application).

	This applies **Lovett's strategy "Provide Opportunities to Reflect on and Adjust One's Approach"** (p. 207). Transfer doesn't happen automatically; students need structured reflection on how to apply new skills in varied contexts.	

Thinking About Your Own Thinking
Reflect on your thought process completing the assignment.

Thinking About Your Own Thinking

This learning activities design was developed by applying Gagné's nine events of instruction framework to structure a complete four-session training sequence that addresses students' metacognitive and procedural skill gaps related to confusion management. The design process required balancing multiple evidence-based principles simultaneously: activating prior knowledge without reinforcing unproductive beliefs, managing cognitive load for novice learners while still promoting deep processing, and building metacognitive awareness without creating performance anxiety in a population where psychological safety is fragile.

A key decision was structuring the sequence from lower-order to higher-order thinking, beginning with activating prior knowledge and presenting conceptual frameworks (Sessions 1-2) before moving to procedural application and metacognitive monitoring (Sessions 3-4). This progression aligns with Lovett's principle that "to develop mastery, learners must acquire component skills, practice integrating them, and know when to apply what they have learned" (Lovett et al., 2023, p. 122). Students cannot effectively implement the confusion management protocol if they lack the conceptual foundation to identify confusion types or the metacognitive awareness to notice when they are confused.

The selection of worked examples as a cognitive load management strategy reflects an understanding that my learners are novices encountering a complex procedural skill. Rather than immediately asking students to apply the five-step protocol independently, which would overload working memory, the design provides scaffolding through modeling, guided practice with visual organizers, and gradual

release of responsibility. This approach directly applies cognitive load theory's finding that worked examples free cognitive resources for understanding deep structure rather than surface features.

The two Module 6 strategies, Personal Confusion Signal Map and Confidence Calibration, were selected because they address specific metacognitive deficits identified in my needs analysis. Students cannot pause when confused if they don't notice they are confused, and they cannot effectively select strategies if they cannot accurately judge their own understanding. Both strategies provide structured scaffolding appropriate for novices: concrete examples, simplified rating scales, and explicit connection to the protocol steps. This scaffolding is intentional; as Lovett emphasizes, students need explicit instruction and practice in metacognitive skills because these processes "tend to fall outside the content area of most courses, and consequently they are often neglected in instruction" (Lovett et al., 2023, p. 188).

A critical design consideration was maintaining psychological safety throughout all four sessions. My learner population experiences significant social pressure to avoid appearing confused publicly, which means any activity requiring students to admit uncertainty carries risk of triggering disengagement. Every assessment and reflection activity in this design incorporates protective elements: anonymous index cards, private finger-raise scales, paired work before whole-class sharing, and optional rather than required verbal participation. These accommodations are not modifications that reduce rigor. They are essential design features that enable authentic engagement for students whose prior experiences have made public uncertainty psychologically threatening.

The assessment strategy progresses from formative (ongoing feedback during practice) to summative (scenario-based performance task and knowledge check), consistent with Lovett's emphasis that "practice and feedback must be coupled" to be effective. Formative feedback during Sessions 2-3 allows students to correct misconceptions before they become ingrained, while summative assessment in Session 4 measures whether students can demonstrate independent application of the protocol without scaffolding.

Finally, the transfer activities in Event 9 explicitly address the finding that "students often fail to transfer skills because knowledge becomes too context-dependent" (Lovett et al., 2023, p. 138). By requiring students to identify which class they will apply the protocol in and which strategy they will try first, the design creates concrete implementation plans that increase the likelihood of transfer beyond the training context. This supports the ultimate goal: not just teaching students about confusion management, but equipping them to actually use these skills to reduce disengagement and improve academic outcomes across all subjects.

Evidence-Based Instructional Strategies from Module 5

Strategy 1: Use Brainstorming to Reveal Prior Knowledge

Where applied: Event 3 (Activate Prior Knowledge) - Session 1, "Confusion Is Not Failure" opening activity

Description: Students anonymously write about times they felt confused and wanted to quit, and what their body does when confused. Facilitator reads examples aloud to make implicit experiences explicit and surface both accurate understanding and potentially problematic beliefs.

Why this strategy was selected:

Students already have extensive prior knowledge about confusion—they experience it regularly across all academic contexts. However, this knowledge is largely implicit, unexamined, and often tied to unproductive beliefs such as "confusion means I'm failing" or "if I'm confused, I should give up." Lovett and colleagues emphasize that "students connect what they learn to what they already know, interpreting incoming information, and even sensory perception, through the lens of their existing knowledge, beliefs, and assumptions" (Lovett et al., 2023, p. 24). Because prior knowledge can help or hinder learning depending on its accuracy and accessibility, it is critical to surface what students already believe about confusion before introducing new frameworks.

Brainstorming serves as a diagnostic assessment that reveals the nature of students' prior knowledge. As Lovett states, "assessing students' prior knowledge early in a course or at the start of a new unit or topic can provide important information to guide our instruction" (Lovett et al., 2023, p. 51). In this case, the brainstorming activity reveals whether students hold inaccurate beliefs (e.g., "only dumb people get confused") that will need to be addressed before procedural instruction can be effective. It also activates relevant accurate knowledge (e.g., "confusion feels uncomfortable in my body") that provides a foundation for introducing the Personal Confusion Signal Map and teaching students to recognize confusion signals as useful information rather than threats.

Evidence-based learning principle: Students' prior knowledge can help or hinder learning. "In fact, there is widespread agreement among researchers that students must connect new knowledge to previous knowledge in order to learn" (Lovett et al., 2023, p. 24). By explicitly surfacing students' existing experiences with confusion, this strategy ensures new learning about confusion management builds on rather than conflicts with students' lived experiences.

Strategy 2: Provide Worked Examples Through Modeling

Where applied: Event 4 (Present New Knowledge), Session 2, think-aloud modeling of confusion management protocol

Description: Facilitator authentically encounters a confusing task (reading dense text with unfamiliar vocabulary) and verbally demonstrates applying each step of the five-step protocol: pausing, identifying confusion type, selecting an appropriate strategy, implementing it, and reflecting on effectiveness.

Why this strategy was selected:

The confusion management protocol is a complex procedural skill requiring students to coordinate multiple cognitive processes simultaneously: monitoring their understanding, categorizing their confusion type, accessing strategy knowledge, making strategic decisions, and evaluating outcomes. For novice learners, attempting to perform all these steps independently imposes excessive cognitive load on working memory. Lovett describes how "worked examples can be particularly useful early in the learning process" because they "free up cognitive resources that students can devote to understanding the essential features of the problem and recognizing the deep structure of the solution strategy" (Lovett et al., 2023, p. 130).

By modeling the protocol through think-aloud, the facilitator demonstrates the invisible cognitive processes involved in managing confusion, reducing the cognitive burden on students who are encountering these steps for the first time. Students can observe the complete process without simultaneously having to perform it, allowing them to build an accurate mental model of how the protocol works before being asked to implement it themselves. This approach applies cognitive load theory's finding that "studying worked examples is more effective for novice learners than solving equivalent problems" because it reduces extraneous cognitive load and allows students to focus germane cognitive resources on understanding the structure and logic of the solution (Lovett et al., 2023, p. 130).

Additionally, modeling makes visible the expert processes that students cannot yet perform independently. As Lovett notes, "experts often experience a phenomenon we call expert blind spot… they have difficulty recognizing what novices do and do not know" (Lovett et al., 2023, p. 123). By deliberately slowing down and verbalizing each decision, the facilitator counteracts expert blind spot and shows students that even instructors experience confusion and work through it systematically rather than magically knowing the answer.

Evidence-based learning principle: To develop mastery, learners must acquire component skills, practice integrating them, and know when to apply what they have learned. "When students first begin to learn a complex skill, it can be very helpful to give them an opportunity to practice the skill's various components in isolation before they are required to integrate them" (Lovett et al., 2023, p. 128). Worked examples allow students to observe integrated performance before attempting it themselves, supporting the gradual development of procedural fluency.

Evidence-Based Instructional Strategies from Module 6

Strategy 1: Provide Activities That Require Students to Assess Their Own Strengths and Weaknesses

Where applied: Event 4 (Present New Knowledge) Session 1, Personal Confusion Signal Map activity

Description: After learning the three confusion types, students individually complete a structured self-assessment identifying how confusion manifests in their own thoughts, body, emotions, and behavior. Students circle personal signals (e.g., rereading same line, zoning out, tight chest, wanting to quit) and star their earliest warning sign. Facilitator explicitly connects this self-knowledge to the protocol's first step: "You can only pause if you notice you're confused. You just identified your personal early warning system."

Why this strategy was selected:

Effective self-regulated learning requires metacognitive knowledge of self—understanding one's own cognitive and emotional patterns. As Lovett explains, "metacognition refers to 'the process of reflecting on and directing one's own thinking'" and includes knowledge of person variables, or how learning processes operate for oneself individually (Lovett et al., 2023, p. 189). Students cannot regulate what they cannot detect. If students do not recognize their personal confusion signals, they will miss the critical moment to pause and apply the protocol, instead moving directly from confusion to disengagement.

Research shows that students tend to be inaccurate in assessing what helps them best learn and often lack accurate awareness of their internal states (Lovett et al., 2023). The Personal Confusion Signal Map addresses this gap by providing explicit structure for self-assessment. Rather than asking students to generate signals from scratch—which would impose excessive cognitive load and likely result in vague or socially desirable responses—the activity provides concrete examples while allowing students to add their own. This scaffolding ensures students can successfully complete metacognitive self-assessment despite being novices at this skill.

By making personal confusion patterns explicit and visible, this activity builds the foundation for all subsequent self-regulation. Students who can identify "my earliest warning sign is that I start rereading the same sentence" gain the ability to catch confusion early, when intervention is most effective. This addresses the principle that "to become self-directed learners, students must learn to assess the demands of the task, evaluate their own knowledge and skills, plan their approach, monitor their progress, and adjust their strategies as needed" (Lovett et al., 2023, p. 189). Self-assessment of personal patterns is the prerequisite to monitoring and adjustment.

Evidence-based learning principle: To become self-directed learners, learners must learn to assess the demands of the task, evaluate their own knowledge and skills, and plan their approach, monitor progress, and adjust their strategies as needed. Students need to engage in a variety of processes to monitor and control their learning and this begins with accurate self-knowledge (Lovett et al., 2023).

Strategy 2: Have Students Do Guided Self-Assessments

Where applied: Event 6 (Provide Practice Opportunities) Session 3, Confidence Calibration and Strategy Effectiveness Tracker during Strategy Matching Lab

Description: Before selecting a strategy for each scenario, students individually rate their confidence that they know a good approach (1-5 scale). After discussing with a partner, students revisit their confidence rating and note whether they would change it and why. Additionally, after completing each scenario, pairs evaluate their selected strategy using three categories: ✅ likely to help, ⚠ might help, ❌ probably won't help. At the end of practice, students review their tracker to identify patterns in which types of confusion they felt most confident about and which strategies they rated as most effective.

Why this strategy was selected:

Research consistently shows that students—especially those with weaker skills—are poor judges of their own knowledge and abilities. "When nursing students were asked about their proficiency in performing several basic procedures, the majority of them overestimated their abilities relative to their actual performance" (Lovett et al., 2023, p. 193). This metacognitive misjudgment has serious consequences: students who inaccurately assess their skills "might seriously underestimate the time it will take to effectively complete the given assignment, or just as unfortunately, they may fail to seek the additional help and resources they need" (Lovett et al., 2023, p. 193).

The Confidence Calibration strategy directly addresses this problem by requiring students to make explicit metacognitive judgments before and after collaboration. By comparing their initial confidence with their post-discussion confidence, students begin to calibrate their self-assessment accuracy. This is not a natural skill—it must be taught and practiced. As Lovett notes, "students may need to (1) learn how to assess the task, (2) practice incorporating this step into their planning before it will become a habit, and (3) receive feedback on the accuracy of their task assessment before they begin working on a given task" (Lovett et al., 2023, p. 192). The guided structure ensures students receive this practice with immediate feedback from peer discussion.

The Strategy Effectiveness Tracker extends self-assessment beyond confidence to include evaluation of outcomes, which is essential for the self-reflection phase of Zimmerman's cyclical model. Students who track effectiveness across multiple scenarios build conditional knowledge—understanding not just what strategies exist but which strategies work best for which types of confusion. This pattern recognition transforms isolated practice into rule-building that supports future independent strategy selection.

Critically, these self-assessments are guided rather than open-ended. Students use provided scales (1-5, three symbols) and structured reflection prompts rather than generating evaluations from scratch. This scaffolding is appropriate for novice self-regulators who lack experience making accurate metacognitive judgments. Over time, as students' self-assessment skills improve, such scaffolds can be gradually removed.

Evidence-based learning principle: To become self-directed learners, learners must learn to assess the demands of the task, evaluate their own knowledge and skills, and plan their approach, monitor progress, and adjust their strategies as needed. "Students who can accurately assess their abilities and learning strategies more realistically… might have engaged more appropriate approaches that, in turn, could have produced better outcomes" (Lovett et al., 2023, p. 193).