

# Learning as *developing* competency.



Designing agentic learning experiences that cultivate competency, connectedness, and critical consciousness.

A REDESIGN CONCEPT PAPER



# Introduction.



Think of a time in your life when you were working hard to get good at something. As a learner, what did you need to help you on your way?

Over the last several years, we've posed this question to hundreds of adult learners. Whether in a state house in Boise, Idaho, a boardroom in Singapore, or a classroom in Columbia, South Carolina, people share remarkably similar ideas about the types of supports and experiences that have been most valuable to their learning.

Like [Adilyn](#)—who became a skilled dubstepper at 12 years of age—many adult learners describe a few key ingredients to getting really good at something: strong models or modeling, lots of practice, a great coach or mentor, quality resources, and a personally relevant and important goal. Quality feedback is another key ingredient consistently mentioned, as well as the value of learning in community with others.

How do we design learning experiences that create the conditions for getting really good at something?



## FROM “LESSON” TO “LEARNING EXPERIENCE”

The phrase “learning experience design,” an alternative to “lesson plan,” is derived from a central principle of human-centered design: center the needs, hopes, context, and experience of the user.

Similar to the inquiry-based professional development methodology, Japanese Lesson Study, the focus shifts from, “What am I going to teach?” in a lesson plan, to, “What will my students’ responses be?”

Another important distinction between lesson plans and learning experiences is the factor of time: While lesson plans are typically designed to fit a fixed time allocation (e.g., a 45-minute period), learning experiences vary in length, depending on purpose and outcomes. Because learning is not a function of time, time remains flexible.

Imagine a learner who is trying to develop competency in documentary filmmaking. Learning to choose a topic for a documentary film might take an hour, or several days. Learning to edit film might take several days, or even weeks, depending on the learner.

Both can be described as learning experiences designed to support the development of specific skills in service of a particular outcome.

A teacher working with 60-minute periods would have to figure out how these learning experiences fit into this time constraint, and might have to create “lessons” describing these 60-minute periods for a supervisor.

# Learning experience design.

## THE STRUCTURE OF A LEARNING EXPERIENCE

In a learner-centered community, learning experiences are designed to cultivate competency, connectedness, and critical consciousness. Learning experiences can take many forms, but we offer a three-part structure (with recommended time proportions) that reflects the cognitive processes involved in expanding schema and consolidating new learning:

- *Make Meaning (20%):* The what, why, and how of the new material (i.e., skills and strategies; concepts and/or topics)
- *Investigate (60%):* Opportunities for practice and “transfer,” collaboration, feedback, and meaningful choice-making
- *Synthesize and Reflect (20%):* Cognitive prompting to integrate or “synthesize” new learning (evidence) with existing schema; metacognitive prompting to reflect on one’s learning process (insight) in order to increase one’s capacity as an agentic learner

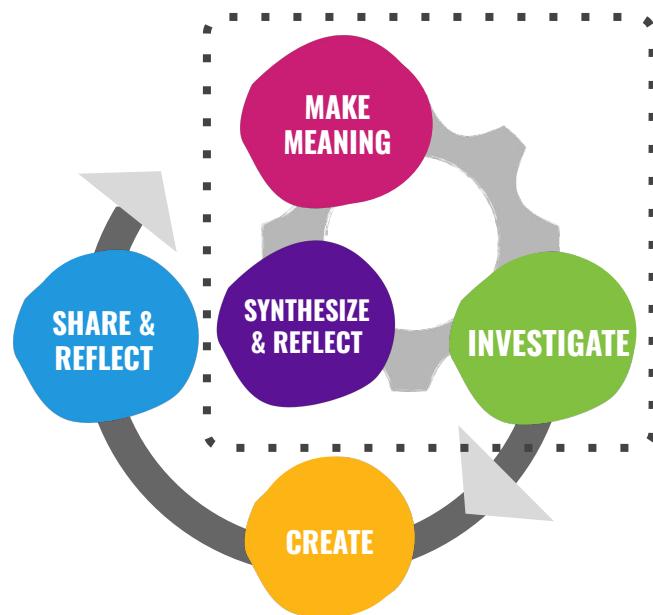
The structure of a learning experience is grounded in several key research-based learning design models and methods, including: Cognitive Apprenticeship, Backward Design, Workshop Model, Bloom’s Revised Taxonomy, Learning Targets, Gradual Release of Responsibility, Culturally Responsive Teaching, and Culturally Sustaining Pedagogy. It also draws on key concepts from educational theory, such as: efficacy, belonging, constructivism, schema theory, scaffolding, metacognition, high-order thinking, habits of mind, and cognitive and metacognitive learning strategies.

## AUTHENTIC TASKS: THE CONTEXT FOR DEVELOPING COMPETENCY

Typically, a learning experience is not a stand-alone experience. **Learning experiences build toward a larger purpose or outcome established by the learner.** As introduced in the concept paper, *Learning as Creating*, learning involves a meaningful, investigative journey that often (though need not always) culminates in authentic work products. One critical part of this learning journey is developing competency. **We define competencies as important, transferable, agency-building skills and strategies that enable learners to get really good at things.**

It is within discrete learning experiences—which fit within the Learning Cycle as the “inner cog,”—that purposeful skill and strategy development is supported for all learners.

## THE LEARNING CYCLE LEARNING EXPERIENCE DESIGN



# A competency framework for learner-centered communities.

**Which competencies—skills and strategies—in particular, are most important for young people to develop?** At reDesign, we believe answering this question involves balancing the values and vision of individuals, families, and communities with all that is known about how to best prepare young people to navigate a complex, rapidly changing world and lead healthy and fulfilling lives.

In the spirit of advancing learning models that reject industrial, “standardized” education and that prioritize meaningful, joyful, and equitable learning for all, reDesign has developed a free and open source *learner-centered communities (LCC) competency framework*. The competency framework (See page 5) builds upon a decade

of competency framework design work, and a robust research base that undergirds agency-building learning design. It is intended as a starting point for those who might wish to adapt it for their own contexts.

The competency framework includes:

1. **A set of nine competencies**, each with its own composite skills, that reflect the values of learner-centered communities
2. **Skill continuums** structured as pre-K to professional developmental learning progressions
3. **A set of agentic learning strategies** that serve as the linchpin to equitably supporting all learners in developing competency

## WHAT IS THE DIFFERENCE BETWEEN STANDARDS AND COMPETENCIES?

Standards	Competencies
Teacher-facing	Student-facing (e.g., I can...)
Describe learning outcomes in terms of <b>discipline-specific skills and knowledge</b>	Describe learning outcomes in terms of <b>transferable skills and strategies</b> ; may include both academic (e.g., Lead Inquiry) and SEL-related outcomes (e.g., Navigating Conflict)
Constructed as <b>grade-based performance levels</b> , designed backwards from college/career expectations	Constructed as <b>developmental performance levels</b> detached from grade levels, designed to articulate a vertically aligned pre-K to professional skill trajectory
Learning evaluated using <b>categorical rating system</b> (proficiency scales by grade level)	Progress is assessed using a <b>continuous rating system</b> (single, stable learning progression enabling longitudinal growth measures)
Used by teachers to: plan curriculum, define objectives, design assessments, and evaluate student learning	Used by teachers to: plan curriculum, define learning targets, design assessments, provide student feedback, rate student work, measure short and long-term growth
Typically not used by students	Used by students to: self-assess, set goals, monitor, measure and reflect on progress, make decisions about learning needs, and celebrate visible evidence of growth

# reDesign's Learner-centered Competency Framework

The Learner-centered competency framework is designed to support all learners in developing important competencies for lifelong learning, participating in community, and contributing to a more equitable and just world.

## COMPETENCY: **MEANINGFUL LEARNING**

### **READ THE WORLD**

- Contextualize sources
- Engage and critique ideas
- Evaluate use of techniques and technology
- Learn from the past

### **INQUIRE & REASON**

- Frame a research question
- Hypothesize and experiment
- Collect original data
- Analyze and interpret data
- Use and develop models
- Solve problems

### **LEARN**

#### **INTERDEPENDENTLY**

- Develop a purpose and plan
- Monitor progress and adjust
- Reflect on learning and collaboration
- Engage in discussion

## CONNECTEDNESS:

### **IN COMMUNITY**

### **SUSTAIN WELLNESS**

- Nurture my identity
- Engage and disrupt internalized oppression
- Build affirming life practices
- Advocate for myself and others

### **NAVIGATE CONFLICT**

- Recognize and process my feelings
- Recognize and respond to the feelings of others
- Apply strategies to work toward resolution

### **BUILD COMMUNITY**

- Cultivate belonging
- Build relational networks
- Nurture and sustain relationships

## CRITICAL CONSCIOUSNESS:

### **TO BETTER THE WORLD**

### **EXPRESS IDEAS**

- Find inspiration and ideas
- Determine purpose and audience
- Choose & develop my message
- Develop craft
- Prepare the medium
- Finalize, practice and/or prepare

### **DESIGN SOLUTIONS**

- Define and explore a problem
- Generate and select ideas for prototyping
- Test and iterate

### **CREATE A MORE JUST**

#### **WORLD**

- Examine enduring problems
- Take action to improve my community and the world

# A closer look at learning strategies.



## STRATEGIES, IN REAL LIFE

On the playground: "Ms. Jacobs is gathering up the balls and jump ropes. It must be getting close to the end of recess." Strategy: *Infer*.

In the middle of the basketball game: "Our zone defense isn't working. We need to switch it up and go one-on-one." Strategy: *Adjust*.

At the grocery store: "If I use the cost per ounce information, I can figure out the best deal."

Strategy: *Determine importance*.

We use learning strategies in everyday life to evaluate situations, make decisions, and solve problems. **A learning strategy is a key cognitive process used both to learn new information and skills, and to apply existing knowledge and skills in varied contexts.**

While skill development is becoming increasingly prioritized in K-12 education, the strategies that make skill development possible often go unmentioned, remaining invisible to learners.

**While skills are the "what" of getting good at things, strategies are the critical "how."** A learner might be asked over and over again to find the main idea of a text. She might clearly understand what she is being asked. She may read the text multiple times. However, she will only find success once she is able to apply the cognitive strategy, *Determining Importance*, to the task. Strategy unlocks skill application.

So which learning strategies are most important to learn? What can we learn from the research?

## AGENTIC LEARNING STRATEGIES

In 2020, reDesign team members conducted a scan of over thirty models of metacognition,

cognition, and executive function across and within a range of disciplines. More than 400 component parts were generated from the models, describing what experts say human beings do when they learn, think, or solve problems. After extensive categorizing and cross-referencing, it became clear that, while the language varied by framework, the underlying processes were, by and large, common.

For example, while one framework used "ask," another "investigate," and the third "pose" problems, all three were essentially talking about the cognitive strategy of *Question*. Similarly, *overview*, *preview*, *set purpose*, *set goal*, *prioritize*, *initiate*, *choose and use tools*, *strategize* became, for our purposes, *Plan*.

**By synthesizing the collected frameworks, we were able to identify a set of thirteen agentic learning strategies that undergird the critical cognitive and metacognitive processes of learning, thinking, and problem solving across disciplines.**

We call them *agentic* because they are the key to building one's capacity to transfer existing skills and knowledge to new contexts.

They give us agency. They can help us learn anything.



# Agentic learning strategies

## *A synthesis of the literature*

### **PLAN**

I can establish goals or intentions, appraise tasks and resources available, and develop plans for achieving them.

### **MONITOR**

I can notice when things are working or not, and when things make sense or don't.

### **ADJUST**

I can modify my plans, shift approaches, and employ different strategies when necessary to continue progress toward my aim.

### **CONNECT**

I can create and recognize links within and among prior experience, knowledge, perspectives, and tasks.

### **VISUALIZE & IMAGINE**

I can create sensory images and other models and adopt perspectives outside of and beyond my own point of view.

### **GATHER & ORGANIZE**

I can collect, sort, and manage information and manage tasks.

### **RECOGNIZE PATTERNS & RELATIONSHIPS**

I can detect similarity and dissimilarity, as well as other interdependencies, correlations, and interconnections.

### **QUESTION**

I can pose questions of myself, my experiences, tasks, content, and context.

### **PREDICT & HYPOTHESIZE**

I can use what I know to anticipate an outcome, formulate cause and effect, sequence, or other relationships, or create an explanation.

### **DETERMINE IMPORTANCE**

I can prioritize tasks and information, and distinguish between relevant and irrelevant information.

### **INFER**

I can use my experiences and understanding of concepts, ideas and phenomena to develop interpretations, draw conclusions, and make judgments, even when presented with incomplete information.

### **SYNTHESIZE**

I can construct new knowledge, complete tasks, explain phenomena, and create new artifacts using prior experience.

### **ENCODE**

I can move information from short term to long term memory, encoding for later retrieval with fluency and automaticity.



# A closer look at the continuums.

## A NEW ARCHITECTURE

A competency framework offers a fundamentally different architecture for learning than the current standards-based system. In the latter, learners are evaluated, assigned grades, and sorted each year based on their performance relative to a grade-level standard, even though grade-level standards lack grounding in empirical evidence on how people learn. There is no accounting of the disproportionate and cumulative impacts of inequities in the education system on Black, brown, indigenous, LGBTQ+, and other youth minoritized by the system. With each year, these inequities compound.

In a competency-based learning system, the emphasis is on learning and growth in community, rather than evaluation. Learners are met where they are on a learning continuum that is organized, not by grade levels, but by developmental milestones spanning pre-K to professional level. Competencies attend to the whole child. Learning level descriptors are specific, observable, and written to support learners as active participants in their learning:



locating where they are on the continuum, working toward tangible goals, and seeing visible evidence of their growth—which is key to developing self-efficacy (Bandura, 1997). Each level builds on the previous, and toward the next..

The learning continuums are also held lightly: while they draw from available research, they remain a hypothesis to be empirically tested and refined.

## SUSTAIN WELLNESS.

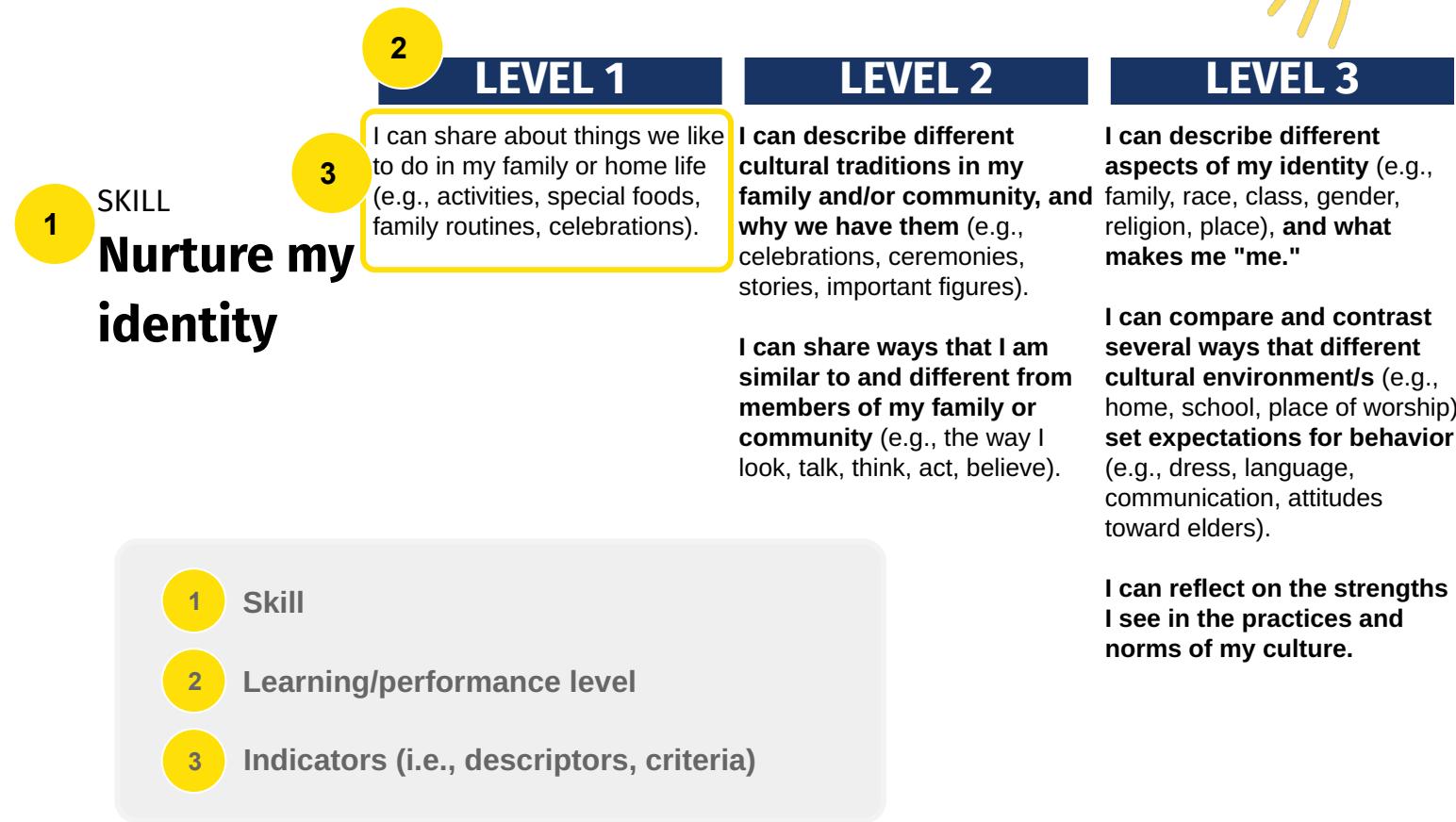
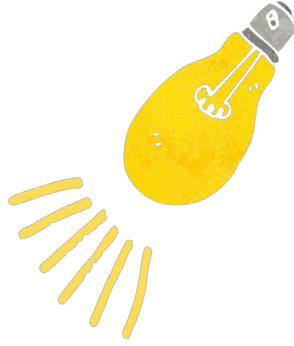
### SKILL

### Nurture my identity



LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
I can share about things we like to do in my family or home life (e.g., activities, special foods, family routines, celebrations).	I can talk about different cultural traditions in my family and/or community, and why we have them (e.g., celebrations, ceremonies, stories, important figures).	I can describe different aspects of my identity (e.g., family, race, class, gender, religion, place), and what makes me "me."	I can articulate multiple aspects of my social identity, their relative importance to me, and specific ways in which they have shaped my life experience.	I can articulate multiple aspects of my social and cultural identities, their relative importance to me, and specific ways in which they have shaped my life experience.	I can articulate multiple aspects of my social and cultural identities, how they are expressed in my life, and how different aspects of my identity intersect and have evolved over time and with pivotal life experiences or decisions.

# Making the invisible visible.



## UNPACK, ALIGN, AND MODEL

In the excerpted skill continuum above for the competency, *Sustain Wellness*, the first learning level describes in specific, observable language how a learner might first begin to demonstrate the skill, *Nurture my identity*.

As you read the language of the Level 1 indicator, *I can share about things we like to do in my family or home life* (e.g., activities, special foods, family routines, celebrations), which agentic learning strategy or strategies (See page 7) do you think are most relevant and important to a learner's ability to demonstrate this learning level?

If you were to model your own thinking process for demonstrating this learning level, how would you approach it? How would you make the

strategies that undergird this skill visible to learners? These are some of the key questions that inform learning experience design.

Among the list of thirteen agentic strategies, we have identified three that may be particularly important for learners for achieving Level 1:

1. *Determine Importance*: I can choose things about my family or home life that are most relevant to the topic or purpose, and that reflect what I feel safe and comfortable sharing
2. *Gather and Organize*: I can gather and organize details or examples of things we like to do in my family or home life in order to share them with my peers, in line with my purpose
3. *Plan*: I can make a plan to help me prepare for my sharing time, such as by organizing any materials, and thinking in advance about what I want to say and how I want to say it

# Process guide: Learning experience design

## LAUNCHING YOUR DESIGN

How do the tenets of learner-centered communities, the competency and strategy frameworks, and the learning cycle all come together in a single learning experience? How do we design in a way that coherently integrates these important but complex elements?

What follows is an introductory process guide for learning experience design: one way, not the only way, to design for learning in a way that builds competency, nurtures connectedness, and cultivates critical consciousness.

## STEP 1: LOCATE. WHERE ARE WE?

The first step in designing a learning experience is locating it within the broader arc of your design. Ask: *Is the learning experience I am designing a stand-alone experience, part of a small series, or part of a full project or unit of study?* In all cases, learning experiences should work in service of a meaningful outcome for learners.

If the learning experience is part of broader learning arc, then determine where in the arc the learning experience is located. Ask: *What comes before, that I am building upon? What comes after, that I am building toward?*

When using reDesign's "formative tasks," a scaffolding methodology for performance task design (shown right), locate and "unpack" the specific formative task for which the learning experience is being designed. For example, *Is this learning experience designed to support learners as they Explore the Issue? Explore the task (if determined)? Generate Questions? Use the provided "I can" statements (page 11) to help locate your design.*

## SCAFFOLDING PERFORMANCE TASKS

### FORMATIVE TASKS

#### MAKE MEANING

**Explore the issue**

**Explore the task**

**Generate questions**

**Determine my purpose**

*Example  
formative  
tasks*

#### INVESTIGATE

**Research**

**Formulate a main idea**

**Determine my audience and format**

**Choose supporting details**

#### CREATE

**Outline and draft**

**Give and receive feedback**

**Revise and Edit**

#### SHARE & REFLECT

**Present, publish, or share**

**Reflect**

# SCAFFOLDING PERFORMANCE TASKS

## FORMATIVE TASK OUTCOMES

### MAKE MEANING

#### Explore the issue

Learners build background knowledge about the [concept or topic relevant to the inquiry frame] and make connections to their own lives, community, interests, ideas, or perspectives.

#### Explore the task

Learners analyze exemplars to identify the key characteristics and quality criteria of a [task type].

#### Generate questions

Learners explore their own interests and frame questions that will sustain their curiosity and guide them towards what they want to learn more about [inquiry frame or key concepts].

#### Determine my purpose

Learners establish a personal and/or collective “why” for pursuing further investigation that will help them set a clear and specific focus for their research (Investigate phase).

### INVESTIGATE

#### Research

Learners select and analyze sources that will help them critically examine key concepts or topics, personal or community connections, and a range of perspectives on the central issue, while systematically recording and organizing information.

#### Formulate a main idea

Learners establish a main idea or position relevant to [the issue], informed by their research.

#### Determine my audience and format

Learners determine their audience and choose a format for their work product in line with their purpose.

#### Choose supporting details

Learners gather and organize details to support their main idea or claim(s) with logical reasoning and relevant, accurate data and evidence, using credible sources.

### CREATE

#### Outline and draft

Learners outline and draft their work product, producing clear and coherent writing in which the development, organization, and style of the writing aligns with their purpose, audience, and chosen format.

#### Give and receive feedback

Learners give and receive specific, affirming, actionable feedback, using criteria.

#### Revise and Edit

Learners revise and edit their work product, integrating feedback and using criteria.

### SHARE & REFLECT

#### Present, publish, or share

Learners present, publish, or share their work with others.

#### Reflect

Learners celebrate and reflect on their overall learning and creation process.

# Process guide: Learning experience design

## STEP 2: DEFINE PURPOSE AND OUTCOMES.

The second step is to define a clear purpose and outcome(s) for the learning experience. As the designer, ask: *Why is this learning experience important, helpful, and meaningful to learners? What will they have demonstrated or achieved that authentically connects to their broader purpose?* A learning target provides learners with:

### PURPOSE:

1. **Learning target:** An “I can” statement that describes what learners will be able to do as a result of the learning experience, and why it matters.

In the example below, the learning target for *Explore the task* states a clear purpose for the formative task (i.e., identify key characteristics and quality criteria), and also quantifies success when helpful (i.e., analyze two exemplars).

## MAKE MEANING STAGE

### Explore the issue

### Explore the task

I can **analyze at least 2 exemplars to identify the key characteristics and quality criteria of a photo essay.**



#### KEY SKILLS (THE “WHAT”)

- ★ Analyze a text/source
- ★ Determine the key qualities of the task type or genre



#### KEY STRATEGIES (THE “HOW”)

- ★ Connecting
- ★ Determining Importance

### OUTCOMES:

1. **A list of specific skill(s)** that are essential to achieving the learning target. When applicable, these should connect to a relevant competency (See page 5), and should specify a particular performance level
2. **A list of specific strategies** that work hand-in-hand with the identified skills. Select a best-fit strategy from the Agentic Learning Strategies (See page 6) by asking, *Which strategy best describes the “how” of implementing the selected skill(s)?*
3. **One or more key concepts**, if applicable, that point to the disciplinary content that will serve as the context for the learning
4. **Advancement criteria** that support learners in self-assessing their readiness to advance (unless the learning target makes this self-evident)

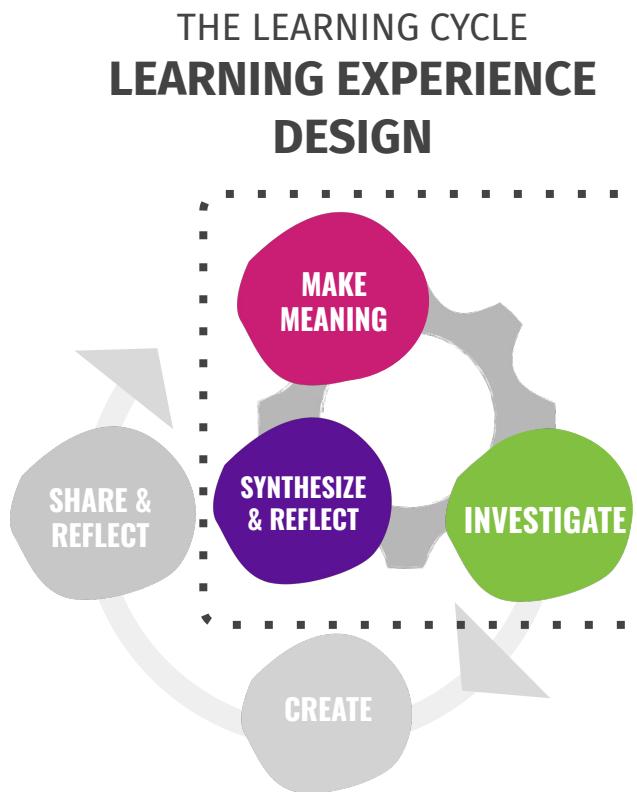
If you plan to use reDesign’s competency framework and agentic learning strategies, this step represents an important moment to pause, engage in a close reading, and “unpack” the language of the specific learning level for which you are designing, as shown in [this example](#).

Note that not every learning experience will necessarily connect to a specific skill from the LCC competency framework. However, key skills and strategies should still be identified to ensure transparency for learners.

# Process guide: Learning experience design

## STEP 3: DESIGN THE PATHWAYS.

The final step in learning experience design is establishing a coherent arc of activities that supports each of the three stages (Make Meaning, Investigate, and Synthesize & Reflect), that tightly aligns to the learning target, and is attuned to the identities, needs, interests, and goals of learners.



In learner-centered experience design, flexibility, transparency, and responsiveness are key:

- Some learners may be able to achieve the formative task without a facilitated learning experience. [Templates](#) are ideally ready for work submission, and next-up learning materials are ready just-in-time.

- Different learners may need different resources or activities to help them achieve the learning target. The learning experience should integrate choice-making.
- At any moment in time, there may be multiple learner groups working toward different learning targets. A flexible learning environment that supports multiple learning modalities simultaneously is essential.

### PART 1: MAKE MEANING

In the Make Meaning stage, introduce the what, why, and how of the new learning in a way that prepares them for collaborative practice. One key decision to make? The most appropriate method for explicit skill and strategy instruction. They range from highly self-directed (inquiry) to highly scaffolded (metacognitive modeling).

### KEY METHODS FOR EXPLICIT SKILL & STRATEGY INSTRUCTION

#### METACOGNITIVE MODELING

“Think aloud” while demonstrating the skill and strategy in an authentic context.

#### DEMONSTRATION

Show and explain how to apply the skill and/or strategy in a relevant context.

#### EXPLANATION

Describe how to apply the skill and strategy in a relevant context.

#### INQUIRY

Pose a provocation. Coach learners as they engage with a problem, example, or model. Make the skill and strategy explicit by/before the debrief.

# Process guide: Learning experience design

Keep in mind that there may be parts of your introductory “Make Meaning” content that could be helpful to record in advance, such as [this example video](#) that introduces one of the key learning strategies and helps answer the question, “So what?” (shown below).

[Intro to: Gather and Organize Strategy > \(1:52\)](#)



## PART 2: INVESTIGATE

The Investigate stage brings together all three aspects of learner-centered communities: competency, connectedness, and critical consciousness. Learners have authentic opportunities to practice the skills and strategies of the competency while engaging critically with meaningful content, and maximizing opportunities for meaningful collaboration (e.g., discussion, giving and receiving feedback, co-creation). At 60% of learning time, this is also when facilitators engage with individuals and small groups for conferences and check-ins to provide individualized supports. This is the heart of the workshop model.

The key decision to make here? The selection of aligned learning activities that tightly align to the learning target, and the provision of meaningful choice-making opportunities. Though beyond the scope of this concept paper,

learning activities should emphasize high-order thinking, create direct opportunities to practice and demonstrate the skill and strategies that were introduced in the Make Meaning stage, and provide any necessary scaffolding.

## PART 3: SYNTHESIZE AND REFLECT

The Synthesize and Reflect stage is similar to the debrief of the workshop model. It involves two key prompts, both opportunities for making learners’ thinking visible and informing next steps. The first is a cognitive prompt: posing a question that asks learners to demonstrate evidence of their new insight or understanding of the content. The simplest form of a synthesis prompt is, “*Before I thought...now I think...*”

The second prompt is metacognitive: it asks learners to reflect on their learning process, what worked well and didn’t with regard to using the learning strategies, and to generate insights that may be useful for future decision-making regarding effective learning practices. Reflection prompts build metacognitive awareness and, over time, increase one’s capacity as an agentic learner.

Synthesis and reflection prompts follow the developmental arc of the project or unit of study. In this [personal narrative project outline](#), note how the complexity of the sample synthesis and reflection prompts increases as learners move through the stages of the Learning Cycle.

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For more guidance on designing agentic, competency-building learning experiences, please visit: [www.redesignu.org](http://www.redesignu.org).

# References

## AGENTIC LEARNING STRATEGIES

Sources for frameworks, standards, or other taxonomies for learning, such as habits of mind or practices. When authors had more than one version of a framework that we examined, we've only listed here the most recent publication.

Alvermann, D. E., Swafford, J., & Montero, M. K. (2004). *Content area literacy instruction for the elementary grades*. Pearson.

American Association for the Advancement of Science. (2009). *Benchmarks for science literacy*. Oxford University Press.

Botella, M., Zenasni, F., & Lubart, T. (2011). A dynamic and ecological approach to the artistic creative process of arts students: An empirical contribution. *Empirical studies of the arts*, 29(1), 17-38.

Collaborative for Academic, Social, and Emotional Learning. (2020). CASEL'S SEL Framework: What Are the Core Competence Areas and Where Are They Promoted? Chicago, IL: Author.

Costa, A. L., & Kallick, B. (Eds.). (2008). *Learning and leading with habits of mind: 16 essential characteristics for success*. ASCD.

Dean, C. B., & Hubbell, E. R. (2012). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Ascd.

Hattie, J., Donoghue, G. Learning strategies: a synthesis and conceptual model. *npj Science Learn* 1, 16013 (2016).

Hetland, L., Winner, E., Veenema, S., & Sheridan, K. M. (2015). *Studio thinking 2: The real benefits of visual arts education*. Teachers College Press.

IDEO U. (2021) Design Thinking. Online.

Keene, E. O., & Zimmermann, S. (1997). *Mosaic of thought: Teaching comprehension in a reader's workshop*. Heinemann.

Kryza K. (2014) Practical Strategies for Developing Executive Functioning Skills for ALL Learners in the Differentiated Classroom. In: Goldstein S., Naglieri J. (eds) *Handbook of Executive Functioning*. Springer, New York, NY.

Mark, J., Cuoco, A., Goldenberg, E. P., & Sword, S. (2009). Developing mathematical habits of mind in the middle grades. *Mathematics Teaching in the Middle School*, 1(5), 505-509.

Meier, D. (2003). So what does it take to build a school for democracy?. *Phi Delta Kappan*, 85(1), 15-21.

Meltzer, L. (2010). *Promoting executive function in the classroom*. Guilford Press.

Mokhtari, K., Dimitrov, D. M., & Reichard, C. A. (2018). Revising the Metacognitive Awareness of Reading Strategies Inventory (MARSI) and testing for factorial invariance.

# References

## AGENTIC LEARNING STRATEGIES (cont'd)

National Council for the Social Studies. (2013). Social studies for the next generation: Purposes, practices, and implications of the college, career, and civic life (C3) framework for social studies state standards (Vol. 113). Washington, DC: Author

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common Core State Standards for Mathematics. Washington, DC: Authors.

National Reading Panel (US), National Institute of Child Health, & Human Development (US). (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups. National Institute of Child Health and Human Development, National Institutes of Health.

NGSS Lead States. (2013). Next Generation Science Standards: For states, by states. Washington, DC: The National Academies Press. Online.

Owocki, G. (2003) Comprehension: Strategic Instruction for K-3 Children. Heinemann.

Oxford, R. L. (1990). Language Learning Strategies: What Every Teacher Should Know. Newbury House Publisher.

Pressley, M., & Afflerbach, P. (1995). Verbal protocols of reading: The nature of constructively responsive reading.

Sadler-Smith, E. (2015). Wallas' four-stage model of the creative process: More than meets the eye?. *Creativity Research Journal*, 27(4), 342-352.

Windschitl, M., Thompson, J., & Braaten, M. (2008). Beyond the scientific method: Model-based inquiry as a new paradigm of preference for school science investigations. *Science education*, 92(5), 941-967.

## LEARNING CYCLE AND LEARNING EXPERIENCE DESIGN

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bransford, J., National Research Council (U.S.), & National Research Council (U.S.). (2000). *How people learn: Brain, mind, experience, and school*. Washington, D.C: National Academy Press.

Brown, J.S., Collins, A., and Duguid, P (1989). "Situated Cognition and the Culture of Learning." *Educational Researcher*, 18(1), 32-42.

Bybee, R., Taylor, J. et al. (2006). The BSCS 5E instructional model: Origins and effectiveness. Colorado Springs, CO: BSCS.

# References

## LEARNING CYCLE AND LEARNING EXPERIENCE DESIGN (cont'd)

Collins, A., Brown, J., and Holum, A (1991). "Cognitive Apprenticeship: Making Thinking Visible." *American Educator*, 6(11), 38-46.

Collins, A., and Stevens, A.L. (1983). "A Cognitive Theory of Interactive Teaching." In C.M. Reigeluth (Ed.), *Instructional Design Theories and Models: An Overview*. Hillsdale, NJ: Erlbaum.

Dewey, J. (1938). *Experience and education*. New York: Macmillan.

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, New York [etc.]: D.C. Heath and company.

Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (pp. 205-242). Newark, DE: International Reading Association.

Fisher, D., & Frey, N. (2008). *Better learning through structured teaching: A framework for the gradual release of responsibility*. Alexandria, VA: ASCD.

Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice*. New York: Teachers College.

Kapur, M. (2008). Productive failure. *Cognition and Instruction*, 26(3), 379-424.

King, B., Newmann, F., and Carmichael, D. (2009). "Authentic Intellectual Work: Common Standards for Teaching Social Studies." *Social Education*, 73(1), 43-49.

Palincsar, A.S. (1986). "Metacognitive Strategy Instruction." *Exceptional Children*, 53, 118-125.

Palincsar, A.S. (1987). "Reciprocal Teaching." *Instructor*, XCVI No. 2, 5-60.

Pearson, P. D., & Gallagher, G. (1983). The gradual release of responsibility model of instruction. *Contemporary Educational Psychology*, 8, 112-123.

Piaget, J. (1952). *The origins of intelligence in children*. New York: W. W. Norton.

Vygotsky, L. S. (1978). *Mind in society*. (M. Cole, Trans.). Cambridge, MA: Harvard University Press.

Winne, P. H., & Perry, N. E. (2000). Measuring self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 531-566). San Diego, CA, US: Academic Press.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring and problem solving. *Journal of Child Psychology and Psychiatry*, 17, 89-100.



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