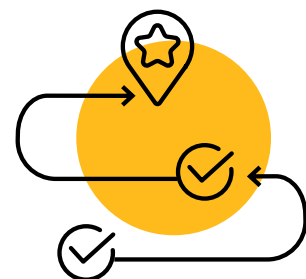




Learning Design Principles
Purposeful Design

Objective Design



Summary

What are Pearson's Learning Design Principles?



Our Learning Foundations describe the optimal conditions for learning and reflect the learner experience we hope our products will create. We do this by incorporating our Learning Design Principles.

Each of our Learning Design Principles goes into detail about a key principle, supporting product design and marketing by describing:

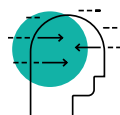
- the research that informs the principle
- why it matters in learning
- how we can apply it in practice

Our portfolio of Learning Design Principles will continue to grow over time.



Welcoming Experience

- Motivation & Mindset
- Social & Collaborative Learning



Minds in Mind

- Developing Understanding
- Attention & Cognitive Load
- Active Learning, Memory & Practice
- Desirable Difficulty & Scaffolding
- Feedback for Learning



Learning Behavior

- Self-Regulated Learning & Metacognition



Purposeful Design

- Objective Design
- Assessment & Evidence-Centered Design
- Personalized Learning & Adaptive Systems
- Authentic Learning



Learn Anywhere

- English Performance Standards
- Digital & Virtual Learning

Objective Design

Our learners need to understand what they'll know and be able to do as a result of their learning experience.

We need to be able to show that our products are soundly built, using objectives to guide a design process that ensures the integrity of the learning experience.

Objectives articulate what success should look like after a learning experience, describing what the learner will know or be able to do. Objective design is the practice of articulating a comprehensive and accurate set of objectives for a learning experience.

The term “objectives” isn’t what matters. It’s the idea that matters. A learning experience could call them “knowledge components” or any term that supports learners and reflects the intended outcome of the experience.

Why it matters

Objectives are the backbone of any effective learning experience. They are the learning goals we aim to achieve and guide the design of both assessment and instruction.

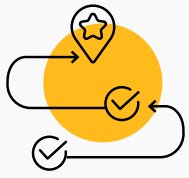
A learner experience designed around objectives solves many challenges:

- **Validity & credibility:** when learners engage with assessment and content aligned to well-designed objectives, learners, instructors, and institutions trust us
- **Roadmap for effective design:** objectives are the starting point for designing assessments and instruction that achieve learning goals, and for making sure we spend our development resources wisely
- **Efficient & aligned design:** we make the learner experience more efficient by making sure all instructional goals and objectives are properly taught and assessed, and there is no extraneous content
- **Measurable impact:** objectives help us understand learners’ progress, report on impact, and improve our learning experiences

Impact

When we successfully incorporate this principle into learning experiences, we can have an impact on these learner outcomes:

- learners understand learning goals and what “good” looks like, because objectives clearly describe learning targets and performance expectations
- learners persist in their learning, because they can get frequent feedback on their progress against their learning goals
- learners meet their goals and master objectives because instruction and content are aligned to objectives



Objective Design

The big ideas

1

When we **create the objectives first**, they form a foundation for designing the learning experience. Instruction and assessment aligned to the objectives support learners to achieve their learning goals.

I understand where my learning will take me.

I know precisely what I'm going to learn and how much progress I've made.

2

Well-designed objectives are **clear and measurable**, and taken together they reflect what learners should know or be able to do by the end of the learning experience. Aligning objectives to an external framework can increase reliability, validity, and applicability of the learning experience.

3

Two-level objective hierarchies are essential to learning experiences that equip learners to achieve **complex learning goals**.

I know where to focus my studies and what I need to do to be ready for high stakes assessments.

5

Objectives can help a learner decide if a learning experience is relevant and valuable for them, increasing transparency and motivation and learning. They can improve trust by **informing learners up front** what will be required and what support will be available.

I know what my learning will cover and what I will achieve at the end of it.

4

Because they are learning goals, objectives **drive assessment and instruction design**. This helps learners progress towards the objectives and allows us to make inferences about the performance of learners and learning experiences.

I'm confident my learning has been designed to help me achieve my goals.

Supporting backward design

Creating objectives first forms a foundation for designing the learning experience. Instruction and assessment aligned to the objectives support learners to achieve these learning goals.

What it feels like for learners

I understand where my learning will take me.

Traditional design starts with the content to be covered, the textbook to be used, or the test to be passed. Backward design turns this around, starting with goals or learning objectives instead of topics to be covered. Backward design leads to more effective learning experiences.

- Backward design has been shown to improve learning
- Backward design has been found to improve instructors' preparation and excitement
- Backward design allows learning experiences to reach all levels of student ability, creating a richer, more inclusive experience



See these Learning Design Principles:
Assessment &
Evidence-Centered Design

What it means for designing learning experiences

- Start with defining what learners should know and be able to do by the end of the learning experience
- Then create objective-aligned formative and summative assessments
 - Each learning and enabling objective should be assessed, and each assessment should match the cognitive process level of the objectives
- Finally, create objective-aligned content to help learners successfully complete the assessment
- Content should match the cognitive process level of the aligned objectives

Creating strong objectives

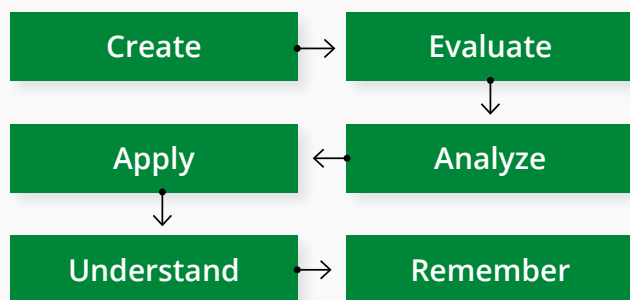
Well-designed objectives are clear and measurable, and taken together they reflect what learners should know or be able to do by the end of the learning experience.

What it feels like for learners

I know precisely what I'm going to learn and how much progress I've made.

Strong objectives:

- explicitly specify observable knowledge, skills, or attributes a learner will achieve as part of the learning experience, based on relevant sets of standards or external frameworks
- reflect the specified measurability attributes while explicitly stating the learning goals
- reflect the appropriate level of the learning



Cognitive process levels

What strong objectives look like:

clear statements

discrete

achievable

aligned to the right cognitive process level

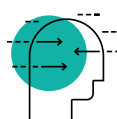
observable

measurable

derived from existing frameworks if possible

There is no “right” number of objectives. Aim for enough objectives to articulate what it means to be successful in that specific unit, course, or module.

Taken collectively, strong objectives should describe success for the entire learning experience, comprehensively articulating what a learner should know and be able to do at the end of the experience.



See this Learning Design Principle:

Active Learning, Memory & Practice

What it means for designing learning experiences

- Consider relevant external frameworks that objectives might align to
- Make sure objectives are clear, discrete, aligned, achievable, observable, and measurable
- Make sure objectives are clear statements that learners will understand
- Make sure objectives collectively describe:
 - success
 - what a learner should know and be able to do at the end of the experience
- For existing content:
 - identify and remove extraneous objectives, content or assessments
 - make sure assessments are aligned to an objective and content

Two-level objective hierarchies

Two-level objective hierarchies are essential to learning experiences that equip learners to achieve complex learning goals. **Enabling objectives** give learners the foundational knowledge they need to succeed at more complex **learning objectives**.

Learning objectives are broad, course-level goal statements describing what learners will know, think or be able to do by the end of the learning experience.

Enabling objectives are granular, lesson-level goal statements describing the foundational knowledge learners need to succeed with the related learning objective. They tend to be less cognitively complex than learning objectives.

What it feels like for learners

I know where to focus my studies and what I need to do to achieve my learning goals.

- **Two-level objective hierarchies help learners build understanding**
Having two levels of objectives — foundational and complex — helps make sure assessment and instruction are properly sequenced and scaffolded. When learners are taught foundational enabling

skills step-by-step first, they achieve greater understanding of the more complex holistic task.

- **Two-level objective hierarchies support personalized learning**

A two-level objective hierarchy isolates foundational enabling skills, allowing us to measure learners' progress and diagnose specific misunderstandings. This enables a personalized approach to instruction. For example, if a learner achieves enabling objective 1, but not 2, an instructor can use that information to target support for that learner.



See these Learning Design Principles:
Assessment &
Evidence-Centered Design

What it means for designing learning experiences

- Design objectives to follow a two-level hierarchy
- Design enabling objectives at a lower cognitive process level than the learning objective level
- Make sure enabling objectives outline the foundational knowledge, skills, and abilities needed to achieve the learning objectives
- Support each learning objective with two or more enabling objectives

Guiding assessment and instruction

Because they are learning goals, objectives should drive assessment and instruction design. This helps learners progress towards the objectives and allows us to make inferences about the performance of learners and learning experiences.

What it feels like for learners

I'm confident my learning has been designed to help me achieve my goals.

Aligning objectives, assessments, and instructional content at both levels of objectives is essential for learning, the design of learning, and the measurement of learning. Multiple sources show that instructional alignment has a significant, measurable positive impact on learning. Instructional alignment is part of backward design.

- It allows us to make accurate inferences about what a learner knows and is able to do
- It offers clear insight into learning design, which can improve trust and transparency

- It can support learning, relevance, credibility, marketability, metadata, and curation strategy
- It ensures we are spending development budgets wisely

What it means for designing learning experiences

- First, write objectives to accurately define success
- Then, use objectives to drive assessment design
- Finally, use objectives to drive instruction development, to ensure assessment success
- Explicitly link and tag assessment and instruction elements to objectives — both within and across learning experiences, at both the learning objective and enabling objective level



See these Learning Design Principles:
Assessment &
Evidence-Centered Design

Setting expectations for learners

Objectives can help a learner decide if a learning experience is relevant and valuable for them, increasing transparency and motivation and learning. They can improve trust by informing learners up front what will be required and what support will be available.

What it feels like for learners

I know what my learning will cover and what I will achieve at the end of it.

Having clearly articulated, accurate objectives better engages learners, improves performance, increases student gains, and promotes deep learning.

When assessments (formative and summative) and instruction (including images, videos, graphs, case studies, etc.) are aligned to objectives, learners can see the relevance of all content.

Consider presenting specific objectives at the beginning of each lesson. This can establish relevance for learners and set expectations appropriately. One study found that when objectives are presented first, learners devote more processing power to learning material, spend more time reading, and show greater recall.

What it means for designing learning experiences

- Visually represent relevant objectives at the start of a unit before learners commit to the learning experience
- Consider a dashboard for learners to reflect and track their progress, organized by objective
- Place the relevant subsets of objectives before formative assessment elements to aid knowledge compilation, solidify learning, and remind learners of relevance

Example

In this performance dashboard mock-up, learners and instructors **analyze performance** based on assessment items **aligned** with both the learning and enabling objectives (here called objectives and sub-objectives).

Student Quiz Performance Summary									
Objective				Sub-objectives					
Analyze how religious beliefs were reflected in the funerary art and architecture of Ancient Egypt.				Explain how beliefs related to ka influenced the funerary art and architecture of Ancient Egypt.		Question	1	2	3
						Your Answer	✓	✓	✓
						Correct Answer	D	A	C
Question	Your Answer	Correct Answer	25%	Describe the significance of the components of Djoser's Funerary Complex.		Question	5	6	7
13	B	A				Your Answer	c	✓	✓
14	A	B				Correct Answer	A	C	B
15	A	C		Explain the significance of the Book of the Dead.		Question	9	10	11
16	✓	D				Your Answer	b	d	✓
				Correct Answer	A	A	B		

Making it inclusive

We aim to design a great learning experience *for everyone*. These considerations will help you get closer to designing a truly inclusive experience.

Accessibility

Accommodations provided to allow learners with specific needs to participate in a learning experience

- Make sure that objectives are presented in an accessible way (consider text alternatives, color contrast checks, etc.)
- When crafting objectives, allow for flexibility in order to meet students where they are, while still encouraging development and growth

Availability and access

Barriers — often external and systemic — that affect whether the tools and resources needed for learning are available to learners

- Plan for multi-level objective hierarchies (e.g., learning objectives and enabling objectives) to account for differences in experience and prior knowledge
- Identify what additional support is needed to help learners with different experience levels (e.g., with technology and/or the subject matter) achieve the objectives

Identity

The combination of dimensions that define who learners are to themselves and others

- Encourage content teams to include subject matter experts and content design experts from diverse backgrounds, to make sure objectives are crafted in an inclusive, relevant, and meaningful way for learners of different identities

Culture

Shared patterns of behaviors and interactions, cognitive constructs, and affective understanding that learners acquire through socialization

- Consider whose lens has determined what learners should be able to know and do
- Use these considerations to inform engagement with experts within specific communities and cultures, to account for different learning goals
- Identify the variety of literacies and languages that are needed to meet the objectives of a learning experience and build in additional support to enable members of various cultures with different levels of literacy to experience success

In partnership with  **CAST**

CAST is a nonprofit education research and development organization that created the Universal Design for Learning framework and UDL Guidelines, now used the world over to make learning more inclusive.

Authors



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Sara has over 24 years of experience in instructional design, instructor-led and online education, learning design, and information architecture. She holds a Bachelor of Science from Indiana University in Secondary Education and English and a Masters in both Organizational Development and Instructional Design from Roosevelt University. Sara holds certificates in E-learning and Facilitating Organizational Change and her work experience includes the education, telecommunications, food services and agricultural industries.



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Erin is the former Founding Director of Williamsburg Academy's Middle School, an accredited, online, project-based middle school and USDLA's Platinum Award recipient. She is a cofounder of Leadership Education Uganda, an educational non-profit. She has over 15 years' experience in course creation, innovation and iteration. Erin received her M.Ed. in Special Studies from Harvard's Graduate School of Education, where she focused on cognitive neuroscience, school leadership and project-based learning. She also holds an M.A.Ed. in Educational Methodology from George Wythe University.



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Amy Wood, most recently the Director of Learning Research & Design at Pearson, has been designing learning experiences and evolving practices for doing so since 2010. Amy holds a master's degree in Instructional Design from Lehigh University and a Bachelor's degree in Education from McGill University, and has completed coursework in Stanford University's Innovation and Entrepreneurship program. She's keen to build more strategic and participatory learning design practices, in order to create more optimal products and experiences for learners.

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