



Theoretically Speaking,
These Learning Theories
Could Be the Key

POLL YOUR EXPERIENCE



What best describes your experience with Learning Theories?


- A. New to Instructional Design
- B. New to Learning Theories
- C. Taken Instructional Design courses
- D. Other: Tell us!



Cognitive Load Theory

Humans have a limited, short-term working memory, with unlimited long-term memory.

- John Sweller

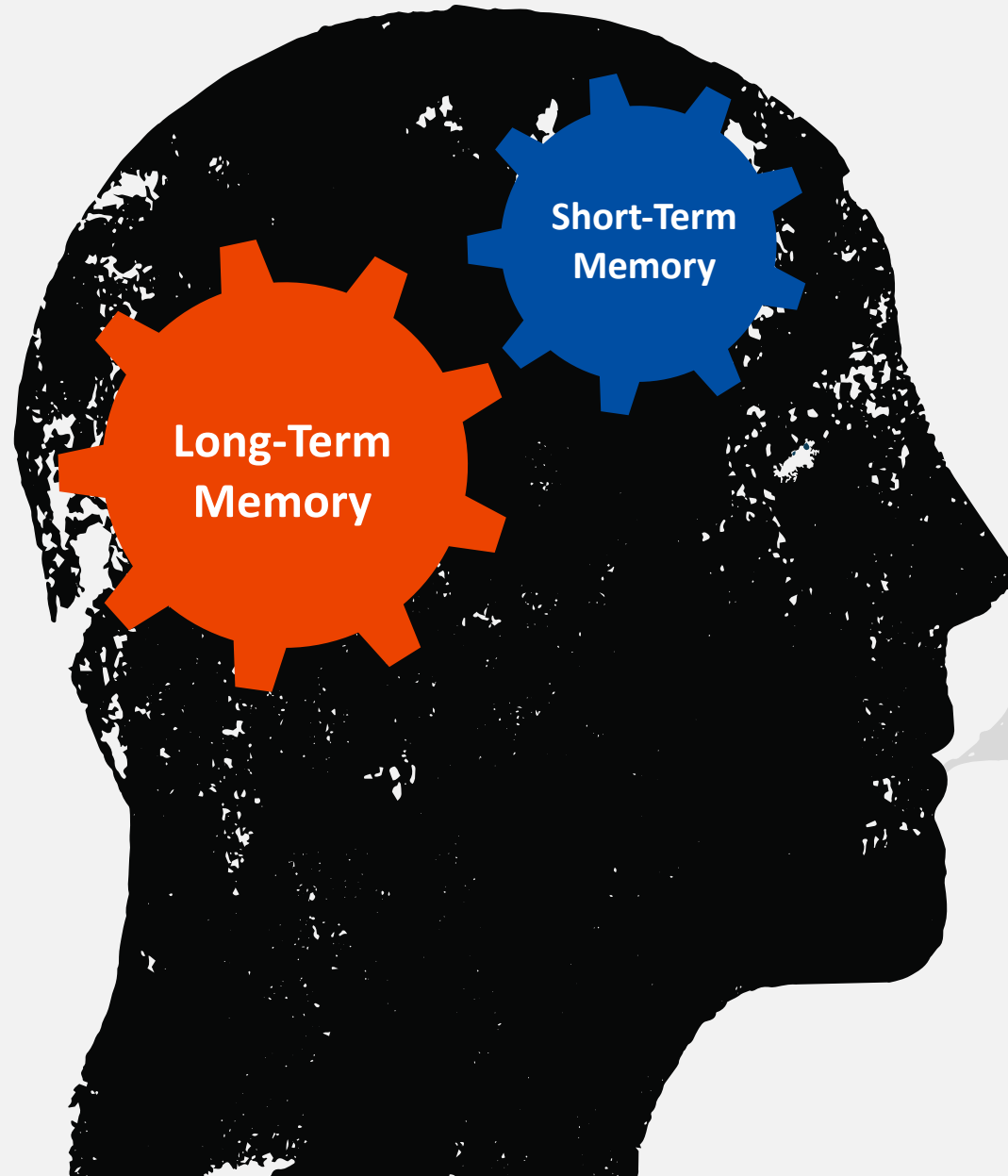


Cognitive Load Defined

Long-Term Memory

Theoretically, unlimited storage capacity

Holds large amounts of information for long periods of time



Working Memory

Extremely limited in capacity and duration

7 ± 2

Magic Number 7

Working memory can hold up to 7 +/- 2 items for retrieval

Three Forms of Cognitive Load



Intrinsic Load

Demand made of a learner by the intrinsic quality of the information



Extraneous Load

Results from demands imposed on learners by the instruction



Germane Load

Occurs as schemas are constructed

A man with glasses and a beard, wearing a dark blue suit jacket over a light blue shirt, is smiling and looking towards a woman whose back is to the camera. They are sitting at a table with a laptop and a white mug. The background is a blurred office environment with windows. The image is framed by a dark red and purple geometric border.

Event
Schema

What rules of
professionalism
would you follow?

A photograph of a woman and a man sitting at a table in a restaurant. The woman, on the left, is smiling and holding a fork with a cherry tomato. The man, on the right, is looking at her. In the background, another man is seated at a table. The image is overlaid with a dark purple gradient on the right side and two white circular callouts on the left.

Social Schema

How would you behave at a dinner with a colleague?

The Impact of Schemas on the Learning Process

Schemas...

Influence attention

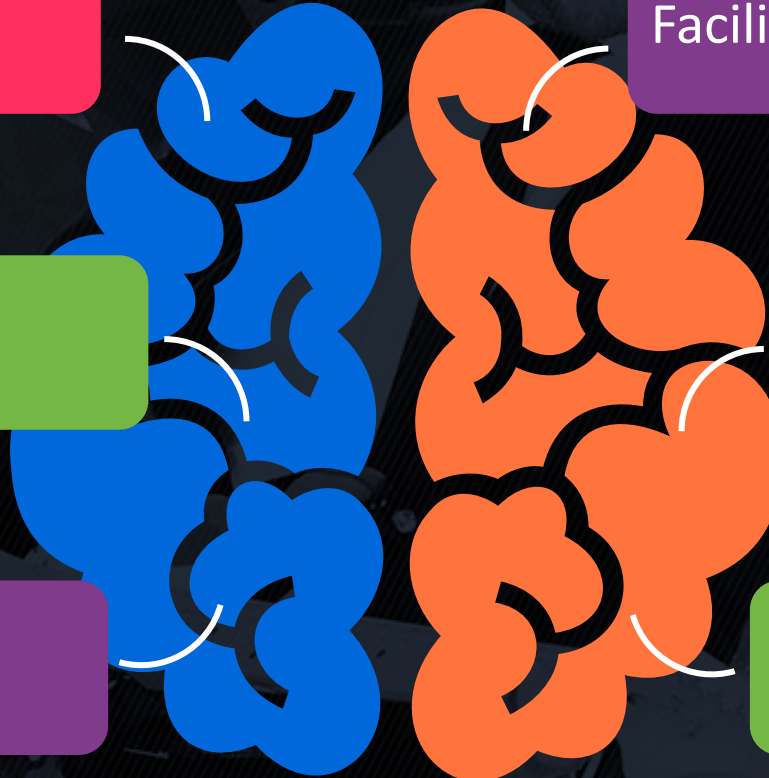
Facilitate quick thinking

Impact how quickly people learn

Change interpretation of information

Simplify the world

Manage cognitive load



WHAT DO YOU THINK?



*Can Instructional Designs
change schemas?*

- A. Yes
- B. No

Managing Cognitive Load



MINIMIZE
Extraneous Load

Avoid using elements that distract the learners and that overcomplicates the learning process



MANAGE
Intrinsic Load

Balance out the load in a way that helps learners manage the complexity of the process



MAXIMIZE
Germane Load

Design the experience using the right mix of techniques and tools

Reducing Cognitive Load in eLearning

Break content into smaller segments

Place words close to relevant graphics

Remove non-essential content

Present information via multiple channels

Segmenting Example

CODE OF BUSINESS CONDUCT CHALLENGE

- Respect
- Ethics
- Honesty
- Integrity

INSTRUCTIONS

Instead of completing training on topics you may know well, this course will assess your current knowledge level in each of these topics to determine which topics you need to review.

[Go To Course](#) [Continue](#)

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◀ PREV

Segmenting Example

Question 2

Which of the following are NOT considered protected characteristics?

- A** Race, color, religion, marital status, disability
- B** Medical condition, age, pregnancy status, sexual orientation
- C** Education, employment history, working skills, hobbies and interests



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Segmenting Example

CODE OF BUSINESS CONDUCT CHALLENGE

Pre-Assessment Results

Here are your results:

Discrimination and Harassment	✓ Financial Authority Policy
Conflicts of Interest	Seeking Guidance/Reporting Violations
Conducting Business Legally and Ethically	

Based on the pre-assessment results, the topics with checkmarks are those you have tested out of. The remaining topics are those that will be covered in this course.

Click the Continue button to get started.

[Continue](#)



Respect

Ethics

Honesty

Integrity

Speaker icon, Chat icon, Play icon, Progress bar, Refresh icon

Corresponding Graphic Example

try it

Josh is a new Chick-fil-A One App user and would like to place his first mobile order. Can you help him add these items to his cart?

Josh's order

- Grilled Chicken Club
- Medium Waffle Fries
- Medium Diet Coke

Select here to help Josh add these items to his cart

Submit >



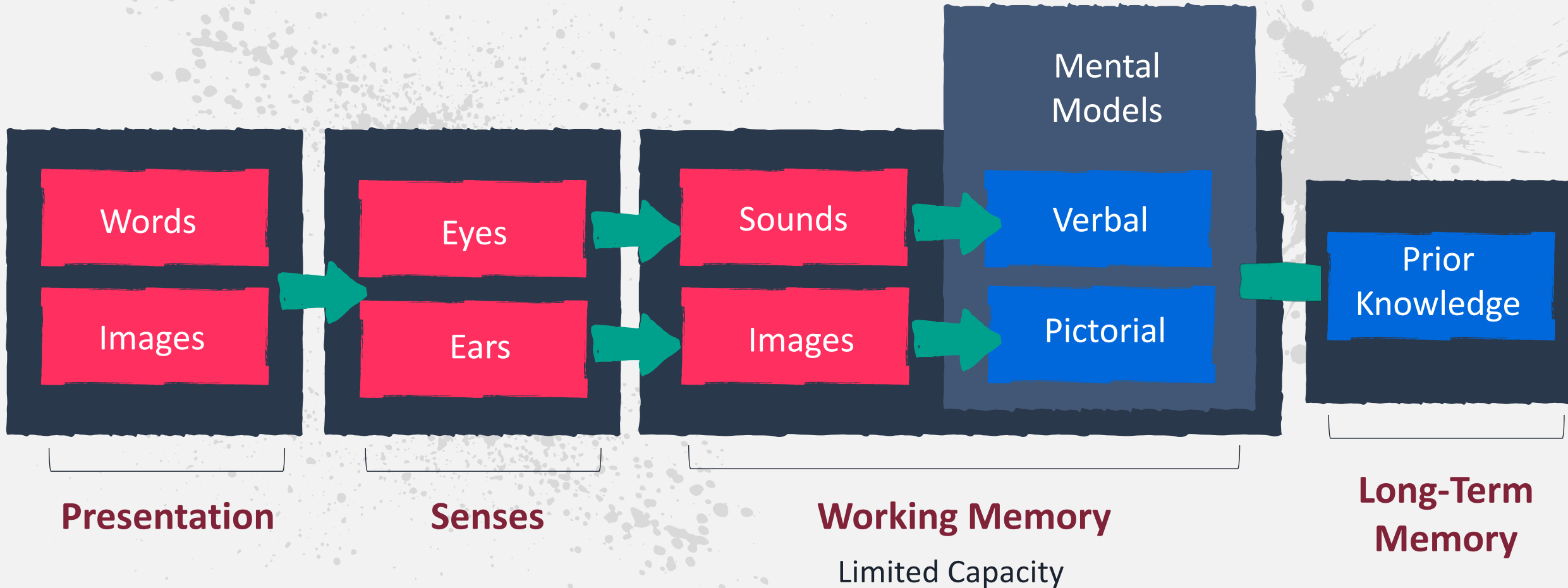
Cognitive Theory of Multimedia Learning

People learn more deeply from pictures and words than by words alone.

- Richard Mayer

Multimedia Learning Goal

Goal: Use instructional media in a way that allows learners to build mental representations from the words and pictures



Multimedia Learning Principles

People learn more deeply when...

COHERENCE

Extraneous material is eliminated

SIGNALING

Cues are used to highlight main ideas and organization

SPATIAL CONTIGUITY

Corresponding printed words and graphics are placed close together

TEMPORAL CONTIGUITY

Corresponding narration and graphics are played simultaneously

REDUNDANCY

Animation and narration are used (when on-screen text is not read word-for-word)

MODALITY

From graphics and narration than from graphics and onscreen text

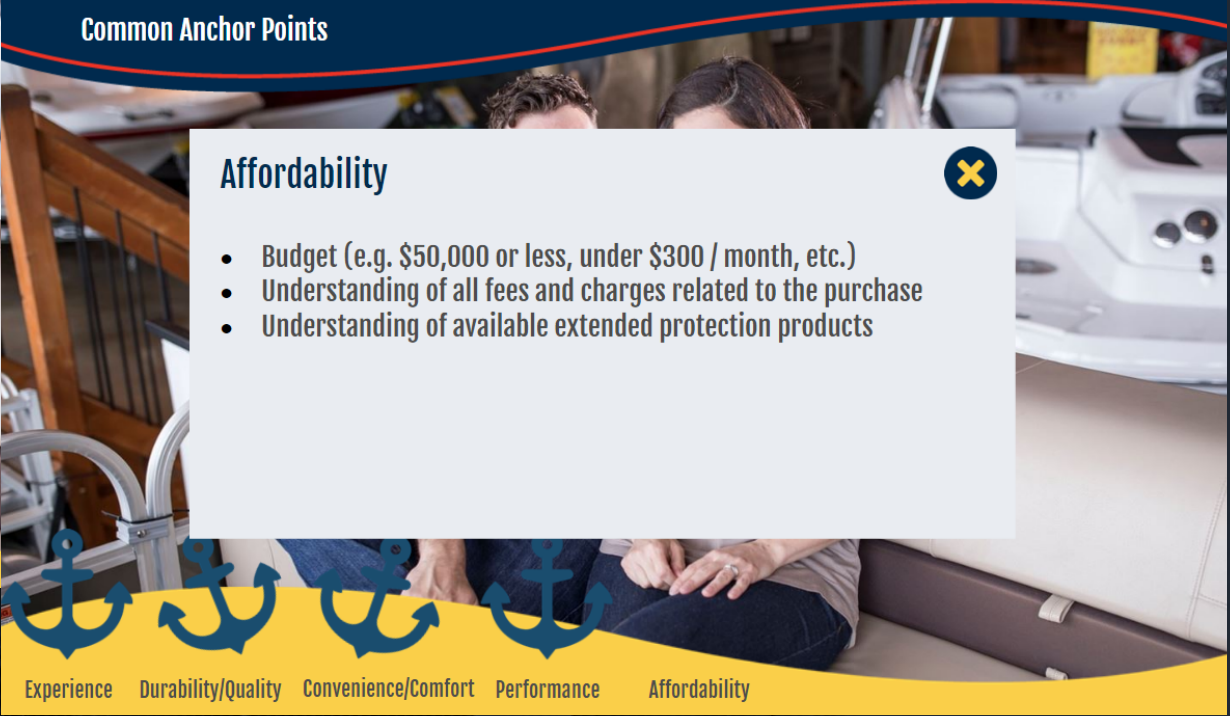
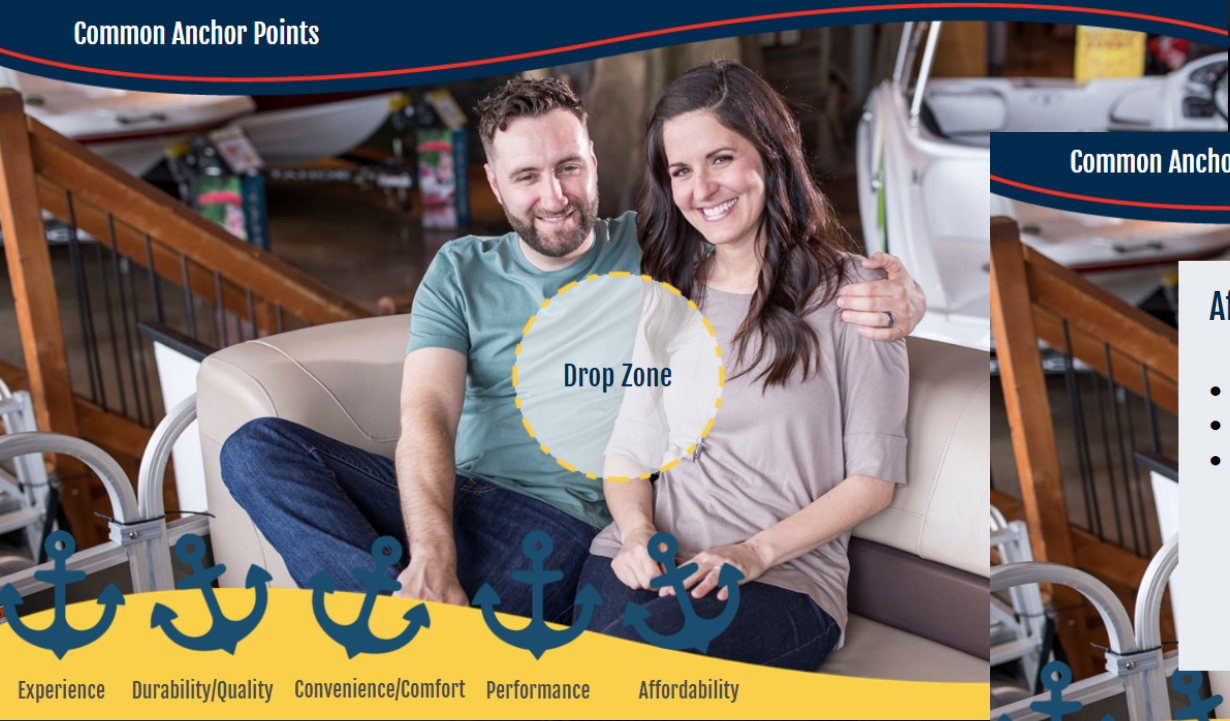
PRE-TRAINING

From a narrated animation when they have had training on the main concepts

SEGMENTING

When a narrated animation is presented in chunks (instead of a continuous unit)

Worked Example



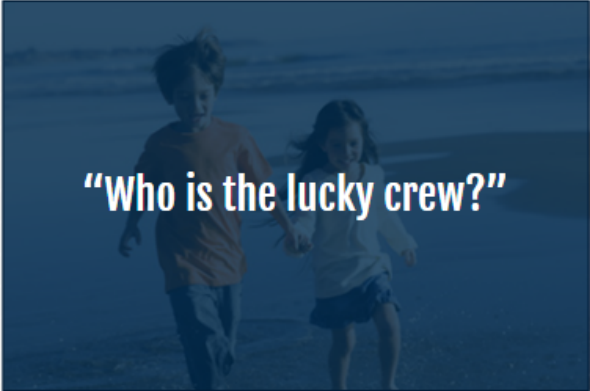
Design Strategy

Provide detailed explanations that emphasize the concepts behind each step of the process

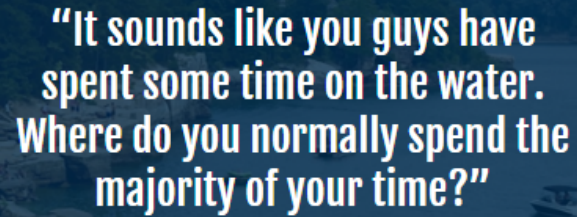
Worked Example

Asking Good Open-Ended Questions

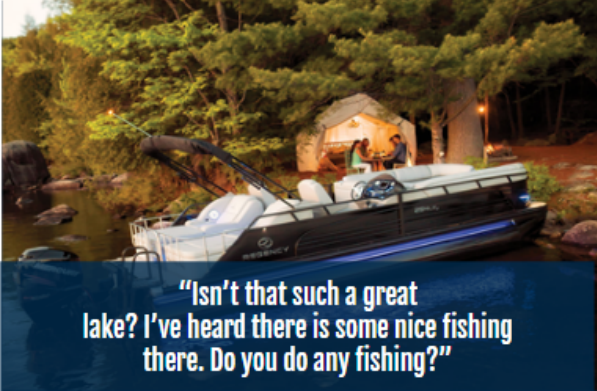
Select each tab to explore more.



“Who is the lucky crew?”



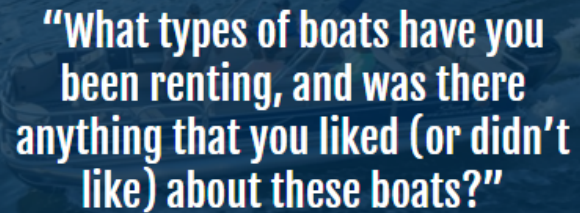
“It sounds like you guys have spent some time on the water. Where do you normally spend the majority of your time?”



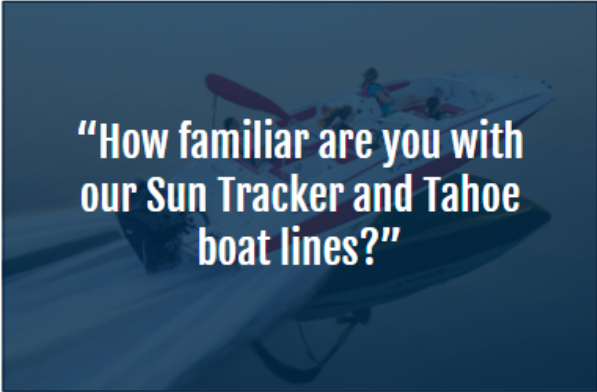
“Isn’t that such a great lake? I’ve heard there is some nice fishing there. Do you do any fishing?”



“Can you tell me more about your kids’ activities?”



“What types of boats have you been renting, and was there anything that you liked (or didn’t like) about these boats?”



“How familiar are you with our Sun Tracker and Tahoe boat lines?”

Worked Example

Test Your Knowledge
Drag and drop the Anchor Points to their corresponding categories.



i

- Fast Top End Speed, Maneuverable in Deep & Shallow Waters
- Leisure, Watersports
- Plans to spend \$50,000 or less

Lakes, Fishing Competition

Good Warranty Coverage

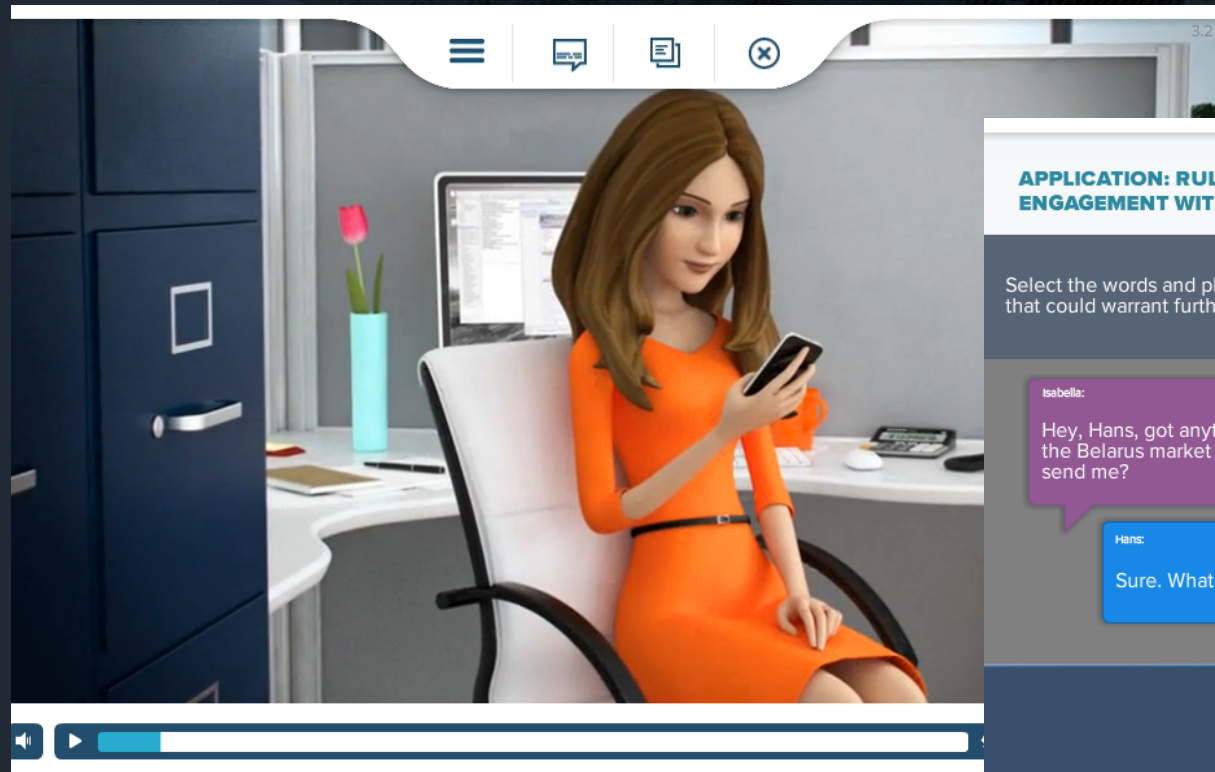
Storage, Deck Space, Room for Electronics

Performance

Affordability



Scaffolding



APPLICATION: RULES OF ENGAGEMENT WITH COMPETITORS 3.3

Start by asking an expert.

Select the words and phrases in the text messages that could warrant further investigation. **Text Tracker**
0/4

ASK AN EXPERT

Isabella: Hey, Hans, got anything on the Belarus market you can send me?

Hans: Sure. What do you need?

Isabella: Sales prospects, market size, competitors' pricing, discounts, etc.

Hans: Will do. Got anything for me in Ukraine?

Isabella: Yep. Want to meet for a drink to swap info?

Hans: Good idea. Usual place on Thursday after work?




(Note: The interface includes a bottom navigation bar with a play button, a progress bar, a refresh icon, and left/right arrow icons.)

Design Strategy

Assist the learner until they can perform the task independently

Collaborative Learning

Create Your Action Plan What can you do to hold yourself and your team accountable?

 <p>How will you hold yourself accountable?</p> <p>type your text here</p>	 <p>How will you hold others accountable?</p> <p>type your text here</p>	 <p>What action will you take today?</p> <p>type your text here</p>
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Enter →

Design Strategy

Divide cognitive processes across several individuals (through group problem-solving or discussion activities)

Cognitive Aids



5 Key Pillars

DRIVING THE EXPERIENCE

1 Industry

Specialization without customization. That's progress.

Industry specialization is part of Infor's heritage and in our DNA. We are passionately committed to understanding our customers' industries better than anyone else and delivering complete software solutions with the capabilities they need built in, not bolted on.

This deep industry knowledge allows us to make connections that others do not see, applying lessons learned from one industry to others and giving our customers broader access to innovation and ideas as a result.



 18 of the top 20 aerospace companies	 20 of the top 20 automotive suppliers	 More than 2,000 chemical manufacturing companies	 20 of the top 20 industrial distributors	 6 of the top 10 global luxury brands
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 14 of the top 15	 21 of the 25 largest	 6 of the 10 largest	 More than 5,500	 21 of the top 30
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Distributed Solar

Definition

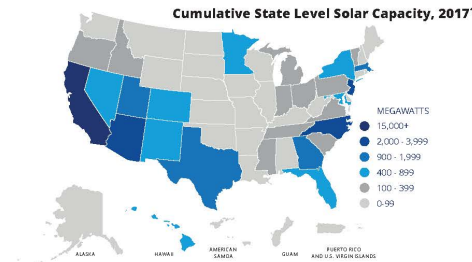
Solar Photovoltaic (PV) systems can be very large (utility-scale systems are usually >20 MW) and sited on the transmission system, or can be small enough to fit on a home. Solar PV systems defined as "distributed" are usually customer-sited and can be connected on either side of the meter. As of 2017, approximately 1.25 million PV systems have been installed behind the meter on the U.S. electric grid. They include inverters to convert DC power to AC power in order to allow for parallel operation with the electric grid, but can automatically disconnect from the grid during an outage to allow line workers to make repairs safely.

Information Videos from Energy.Gov

- Energy 101: Solar PV
- What is the Duck Curve? Learn about the duck curve and how solar can help balance hourly energy loads.

Fast Facts

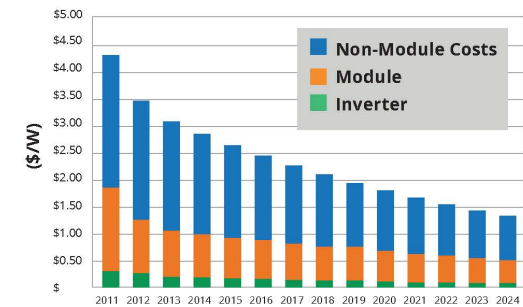
- Current capacity: 42 GWac of utility-interconnect solar
- 18% (7.4 GW) of total U.S. solar capacity was added in 2017



- Total contribution: In 2017, renewable energy (including wind and solar) exceeded 10% of total US electricity generation
- Solar contributes, on average, 1.3% of all electricity generated in the the United States on an annual basis.²
- The cost of distributed solar has dropped 67% since 2010 and is projected to decline by 3.1% per year in the next 10 years.³

Distributed Solar PV Installed System Prices (Non-Weighted Average) by Component⁴

World Markets: 2011-2024



1 Source: Navigant
2 Source: [U.S. Energy Information Administration](#)
3 Source: Navigant
4 Source: Navigant

Other Related Theories

SOCIAL LEARNING THEORY

“People learn from one another by observing, imitating, and modeling.”

- Albert Bandura

SITUATED COGNITION

“Knowledge is embedded in the activity, context, and culture in which they are learned.”

- Brown, Collins, & Duguid

NOVICE TO EXPERT THEORY

“People develop skills over time from a combination of a strong educational foundation and personal experiences.”

- Patricia Benner

COGNITIVE BEHAVIORAL THEORY

“Individuals tend to form self concepts that affect the behavior they display.”

- Aaron Beck

REQUEST A JAM SESSION

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