



**Commlab India**  
Rapid eLearning Solutions



# Instructional Design 101

# Contents

Chapter 1: Basics of Learning

Chapter 2: Instructional Design Process for Effective Courses

Chapter 3: E-learning Standards

Chapter 4: Content Comprehension

Chapter 5: Learning Objectives

Chapter 6: Content Presentation

Chapter 7: ID Strategies

Chapter 8: Interactivities

Chapter 9: Assessments

Chapter 10: Performance Support



# Introduction

Earlier, the only methods used to impart training were the traditional classroom sessions led by a qualified instructor. eLearning has now come a long way in supplementing conventional training sessions. Instructional designers are tasked with developing eLearning courses that facilitate effective knowledge, in the absence of an instructor. Modern business demands have compounded the task as online courses have to rolled out @ speed of business.

To achieve learner engagement and arrest dropout rates is the main motto of instructional designers, and blingy Las Vegas-style courses are not always the answer. Courses grounded in the principles of instructional design and adult learning will meet these goals – even without the frills.

And, whether you are an experienced ID, a new entrant, or making your way to the world of L&D from a functional field, we invite you to go through the basics of ID covered in the eBook. It distills the basics, best practices, dos & don'ts, technical standards, and more.



# Basics of Learning

The [Merriam Webster dictionary](#) defines learning as the activity or process of gaining knowledge or skills by studying, practicing, being taught or experiencing something.

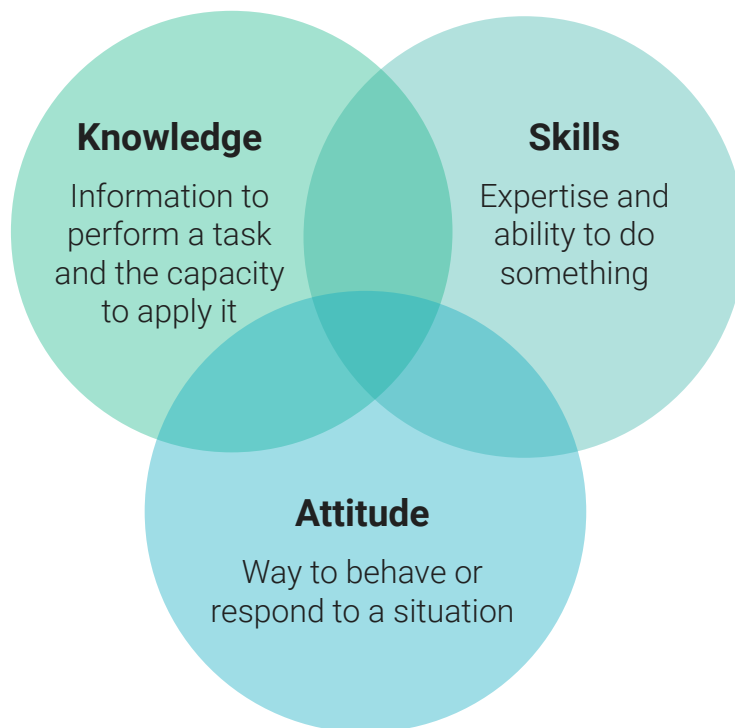
Learning can also be defined as a relatively permanent change in an individual's behavior arising from experience.

It is the act of acquiring new or modifying the existing knowledge, behavior, skills, values, or preferences and may involve synthesizing different types of information.

Source: [https://www.wikipremed.com/mcat\\_course\\_psychology.php?module=4&section=1](https://www.wikipremed.com/mcat_course_psychology.php?module=4&section=1)

## What DO we learn?

We learn:



## How does learning take place?

There are 5 elements of learning.



### **DRIVE**

Is a strong drive that makes the learner WANT TO LEARN  
Motivation is key to learning.



### **STIMULUS & CUES**

Acts as actual learning content that makes the learner learn  
Together they both facilitate learning.



### **RESPONSE**

Is required the learner in the presence of an effective stimulus



### **REINFORCEMENT**

Is required the learner in the presence of an effective stimulus



### **REWARDS**

Increases motivation & ensures learning beyond the learning event

## Principles of Adult Learning

The science and art of helping adults learn is termed andragogy. There are 6 adult learning principles that, if applied, help adults learn effectively.

S. No.	Adult Learning Principles	How to Apply
1	Adults <b>need to know why</b> they should learn something.	<ul style="list-style-type: none"><li>● Provide learning objectives that tell them <b>why</b> they “need to know”</li><li>● Inform them of the benefits of learning</li></ul>
2	Adults have a deep need to be <b>self-directing</b> .	Give them the freedom to <b>navigate freely</b> through the course without any restrictions. Involve them in the learning process
3	Adults have a greater <b>volume and quality of experience</b> than youth.	Help them apply their experience and knowledge to new learning
4	Adults become ready to learn when they <b>experience a need</b> to be able to do more something effectively.	Inform them how the course will help them perform more effectively
5	Adults enter a learning experience with a <b>problem-centered</b> orientation.	Design courses that’ll help them solve tasks/problems or improve skills
6	Adults are motivated to learn by both <b>extrinsic and intrinsic motivators</b> .	Motivate them through scores, points, badges, or certificates

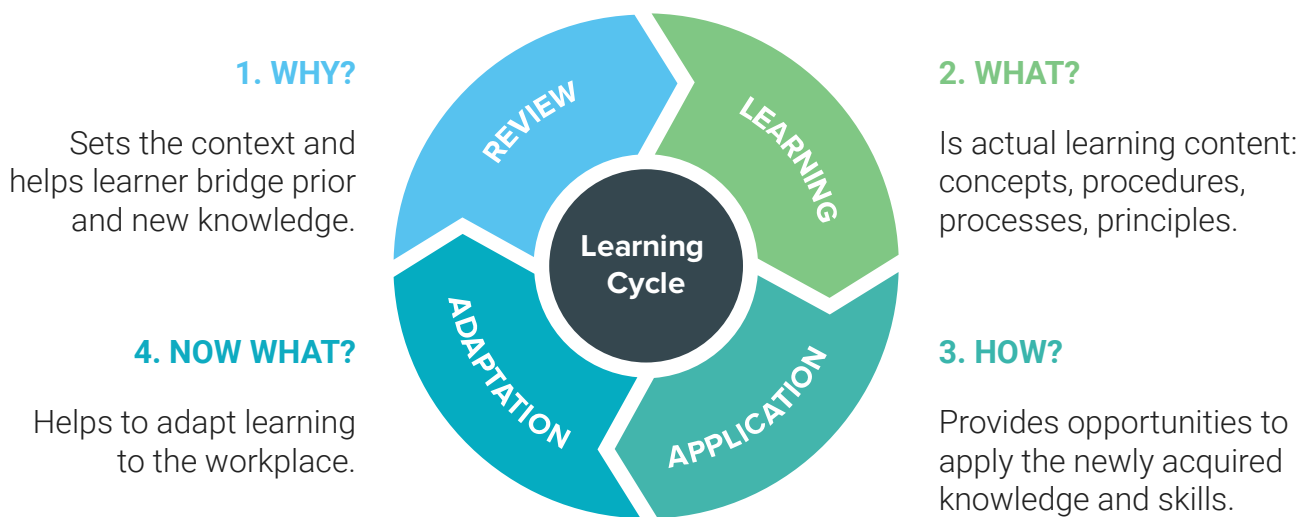
## Learning Styles

Adults have different learning styles or preferences – visual, auditory or kinesthetic – that should be considered when designing an e-Learning course.

Auditory	Visual	Kinesthetic
<ul style="list-style-type: none"><li>● One-on-one Conversations</li><li>● Podcasts</li><li>● Group Discussions</li><li>● Videos</li><li>● Oral Presentations</li></ul>	<ul style="list-style-type: none"><li>● Graphs</li><li>● Illustrations</li><li>● PowerPoints</li><li>● Pictures</li><li>● Videos</li><li>● Articles</li></ul>	<ul style="list-style-type: none"><li>● Hands-on Activity</li><li>● Walking Meetings</li><li>● Role-playing Note-taking</li></ul>

## Learning Cycle

For learning to be effective, it should include these 4 phases: Review, Learning, Application, and Adaptation.

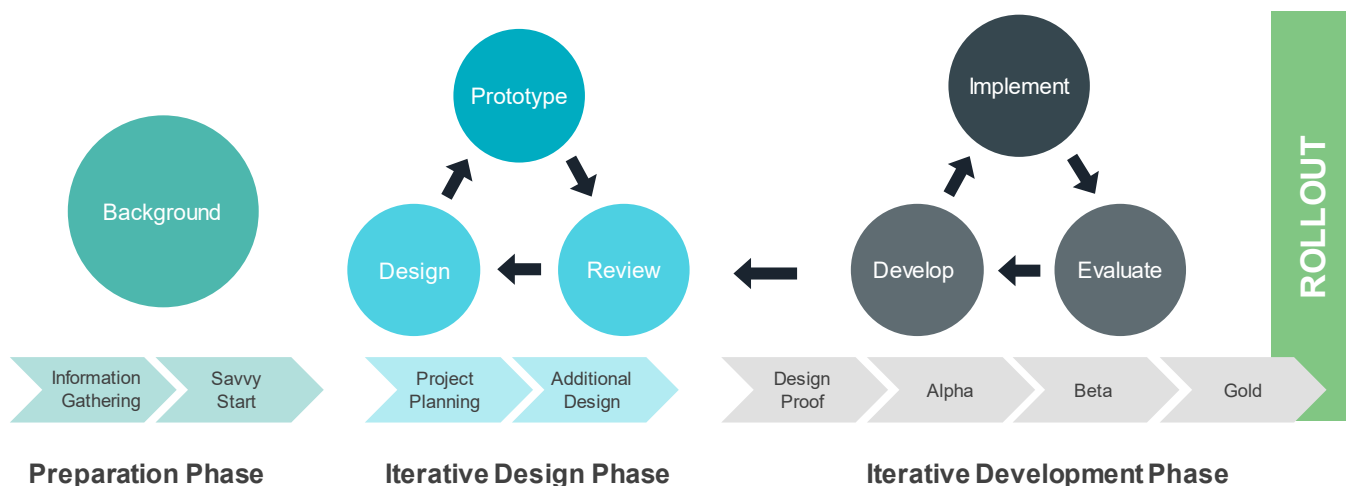


# Instructional Design Process for Effective Courses

The Successive Approximation Model (SAM) helps overcome the challenges in eLearning development. It is iterative, collaborative, and effective.

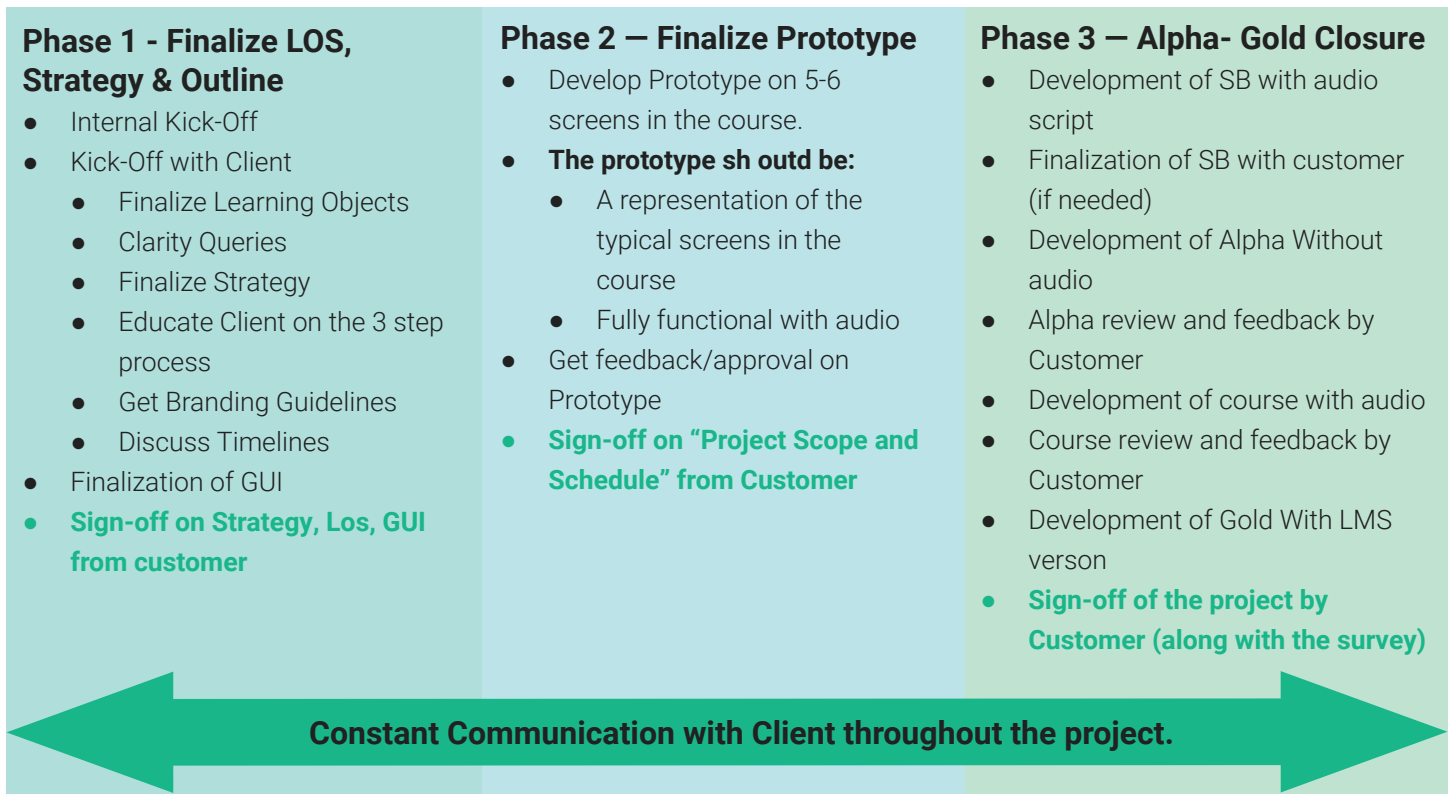
The SAM has three phases – preparation, iterative design, and iterative development.

- 1. Preparation Phase:** Information gathering
- 2. Iterative Design Phase:** Project planning and prototype development. Goes to the development phase after client sign-off
- 3. Iterative Development Phase:** Developing the course, and releasing the alpha, beta, and gold versions of the course





Here are the steps that need to be followed in each phase:



## How does the SAM help Overcome Challenges?



# E-learning Standards

Among the various e-learning standards, interface and production quality standards are most relevant to instructional designers.

**1. Interface Standards** help the learner know “where they are now” and “where they have been” and navigate to any desired location with the help of navigation or course menu. Let us see the standards in detail.

**Orientation** refers to display features indicating the learner’s current location within the course content (‘where the learner is now’)

- Course Map/Menu
- Navigation Frame

**Tracking Features** should accurately document course sections, units, modules, etc., that have been started or completed by the learner (‘where the learner has been’).

- Checkmarks
- Progress bar
- Screen counter (slide numbers)

**Required Navigational Functions** include start, exit, forward, backward, and main menu. Links are provided as hypertext, which the learner can follow by clicking.

An important **Optional Navigational Device** is bookmarking that allows the learner to mark locations within the courseware.

**2. Production Quality Standards** ensure the quality of the courseware’s text, graphics, and visual presentation.

**Text and Graphics** should be legible and clear. Text and graphics should be clearly defined on the 1024 x 768 resolution computer screen.

It is recommended to use a dark font on a white or light background.

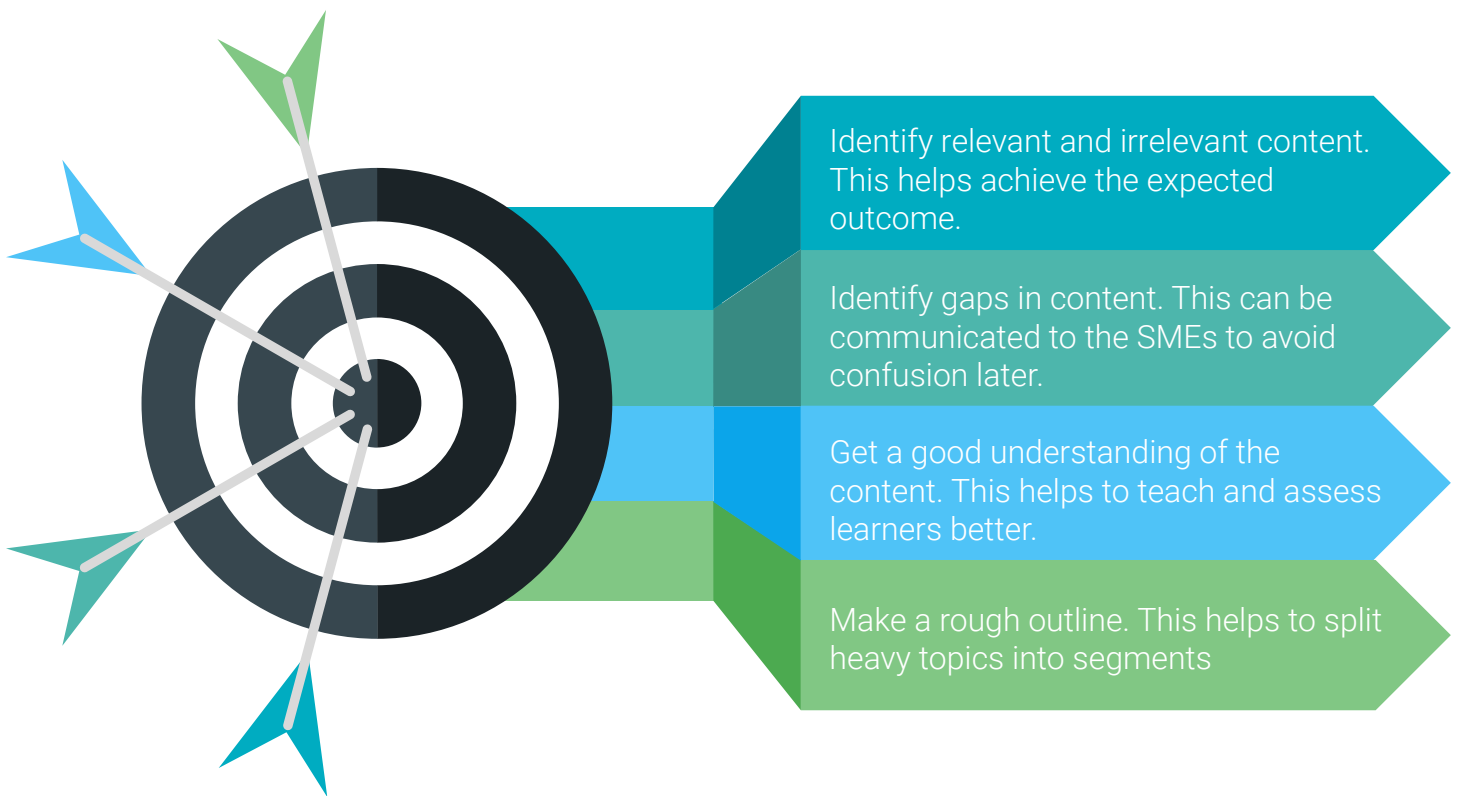
Backgrounds, callouts, graphics, text, text-labels, headings, sub-headings, and style should be consistent throughout the course.

The screenshot shows an eLearning slide with a dark header containing the text "Do You Know?". The background of the slide is a photograph of three business professionals in an office setting. A woman in the foreground is smiling and looking towards the camera. Two men are visible behind her, one looking at a laptop. In the top right corner, there is a logo for "CommLab India Rapid eLearning Solutions" and a "Menu" link. A dark callout box with an orange border contains three questions in white text: "Why is Emotional Intelligence important to build effective teams?", "What are the core components of Emotional Intelligence?", and "What are the strategies for improving Emotional Intelligence?". At the bottom of the slide, there is a video player interface with a play button, a progress bar, and navigation buttons labeled "< PREV" and "NEXT >". The text "02 of 16" is visible in the bottom right corner of the slide area.

# Content Comprehension

As an instructional designer, it is your job to make sense of the given content. This is the first step of instructional design and key for successful eLearning development. It is an on-going process of simultaneously extracting and constructing meaning through interaction and involvement with the written language.

Source: <https://www.jstor.org/stable/10.7249/mr1465oeri>



## 7 Steps for Content Comprehension

1. Gather inputs
2. Survey the content
3. Set broad learning objectives
4. Use the active reading method
5. Research unknown terms
6. Summarize the content
7. Prepare an outline of the content

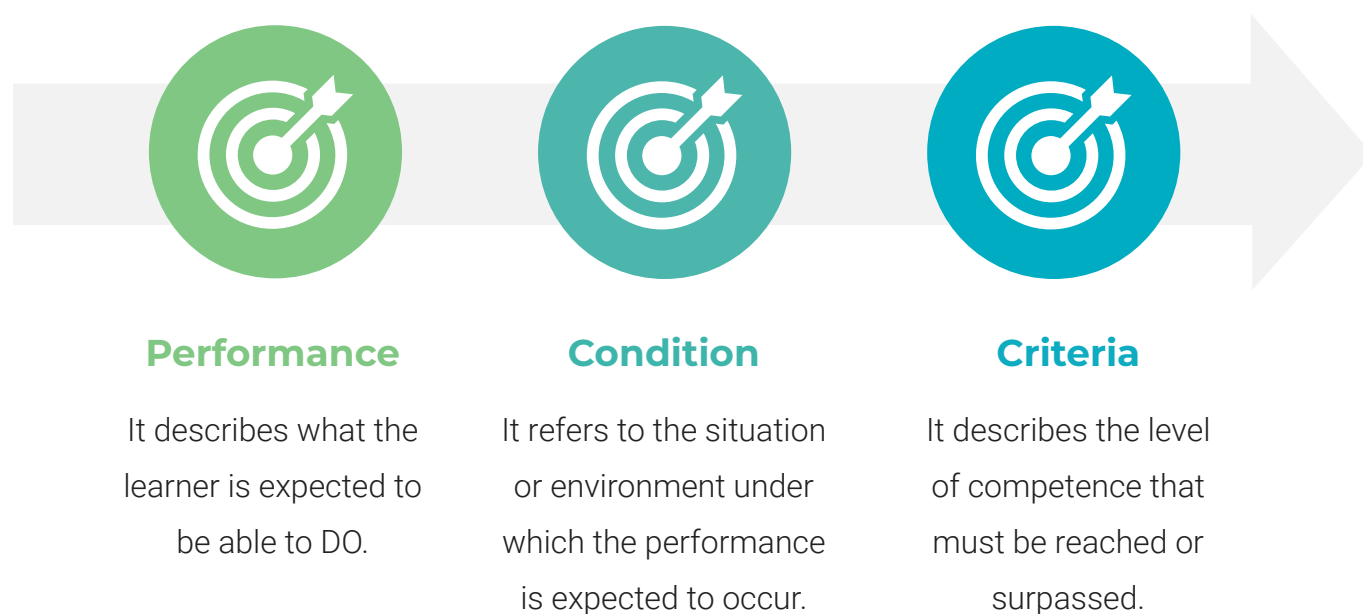
# Learning Objectives

We need to first identify the learning objectives before designing an eLearning course, as they form the basis for deciding the content, instructional method, evaluation, the course duration and cost.

Good learning objectives provided at the beginning of the course fulfil the adult learning principle that adults need to know **why** they should learn something.

## Robert Mager's Learning Objectives

According to Dr. Robert F. Mager, an ideal learning objective has 3 components.



## Setting Learning Objectives

There are 3 simple steps to set learning objectives:

Step	Description	Example
1	<b>Creating a stem</b> is the first step to set learning objectives.	<ul style="list-style-type: none"><li>• After completing the lesson, you will be able to...</li><li>• After this unit, you will be able to...</li></ul>
2	<b>Adding a verb</b> to the learning objective specifies the measurable action.  The verb needs to be an action verb that is measurable in terms of eLearning. You can refer to the "Bloom's Taxonomy" for appropriate verbs.	<ul style="list-style-type: none"><li>• After completing the lesson, you will be able to <b>describe...</b></li><li>• After this unit, you will be able to <b>identify...</b></li></ul>
3	<b>Defining the outcome</b> of what the learner will achieve after completing the course.	<ul style="list-style-type: none"><li>• After completing the lesson, you will be able to describe <b>the 3 key markets of melting point systems.</b></li><li>• After this unit, you will be able to identify the <b>3 steps of project management.</b></li></ul>

## Tips to Frame Learning Objectives

1. Align the content and assessments with the learning objectives to ensure the objectives are achieved.
2. Know your learner.
  - What should the learners' current level of knowledge and skills?
  - Do they have any major misconceptions about the content or topic?
  - What is the language level and style of language that they prefer?
3. Avoid objectives that cannot be measured.
  - Be able to relate to others...
  - Be able to think critically...
4. Keep your learning objectives simple and brief.
  - Not simple: Be equipped to articulate value selling versus features selling and support the customer throughout the sales process
  - Simple: List 3 benefits of value selling to customers
5. Communicate the intent clearly.
  - Unclear: Internalize a growing awareness about our new Product Line
  - Clear: Name the products in our new Product Line
6. Specify the learner's performance after the training.
  - Not Specified: Gain confidence in dealing with customers over the phone and maximize your opportunities to improve your objection handling techniques
  - Specified: Handle customer objections using the LACE technique

# Content Presentation

## Content Chunking

Chunking is a method of splitting content into small pieces or chunks that ensures easier reading, understanding, and retention through:

- Crisp sentences
- Bulleted and numbered lists

Content chunking is needed when you have a lot of content that needs to be shown on a single screen to reduce the cognitive load on the learner.

Content in each screen needs to be divided into '**Need to know**' (essential to achieve the learning objectives) and '**Nice to know**' (more detailed explanations, examples, etc.).

## Benefits of Content Chunking

Chunking helps:

- Facilitate learning
- Convey information more efficiently
- Learners focus on the key points
- Present information consistently
- Organize content logically
- Emphasize 'need to know' topics
- Understand and retrieve information easily



Chunking is done at the course, unit, and screen level.

**Course Level Chunking** is done to determine hierarchy and divide a course into:

- Modules
- Lessons/Units
- Screens/Topics

**Screen Level Chunking** is done explaining 3-5 'learning points' per screen. A 'learning point or unit' is one chunk of learning that cannot be broken down further.

Screen level chunking usually contains:

- Bulleted lists
- Short sub-headings
- Tables
- Short sentences with one or two ideas per sentence
- Short paragraphs, even one-sentence paragraphs
- Easily readable text, with key phrases in bold font
- Images

## To Chunk or not to Chunk

Here are a few guidelines on when to chunk content.



### When to chunk content

If the course has adequate audio:

- Chunk more content
- Show small stand-alone sentences on the screen
- Give detailed descriptions in the audio
- Show chunked content using interactivities
- Explain the process in detail in the audio
- Chunk more content
- Let the visuals speak
- Not chunking in such cases leads to redundancy



### When not to chunk content

When the course is not audio dominant:

- Give more explanation on-screen
- Use audio to highlight important points when explaining facts and principles:
- Chunk content as little as possible without changing the meaning when the course has more text/less visuals and no audio:
- Show the entire content onscreen

# ID Strategies

An Instructional Strategy is a high-level approach of how a subject/topic will be taught.

Clear learning objectives and design goals are the pre-requisite to any instructional strategy, including the instructional strategy and the audio/visual strategy.

These are guided by various elements such as the learning devices, presentation patterns, assessments, media elements, compliance to standards, and other functional specifications.

## Components of an ID Strategy

The various components of an ID strategy include:

### Content

Involves activities such as chunking content into manageable units, segregating into need-to-know and nice-to-know resources, and presenting it in a logical flow.

### Media

Includes media elements are animations audio, and video elements. Animations can be used to explain a concept, idea, or process better and audio or video elements can be used to enhance the learning experience.

### Visual

Includes the Graphic User Interface (GUI), Graphics and Pictures. They represents the various elements and the physical environment a learner encounters in a course.

### Assessments

Includes formative or/and summative and help inculcate analytical thinking and creative problem-solving skills.

### Technical

Includes functional specifications of what you can do and cannot do in the course, with respect to the LMS considerations, standard compliance, and authoring tools that are used.

## Types of Strategies

Here are a few instructional strategies that are being used effectively in the online learning environment.

- 1. Storytelling (Theme):** Storytelling can turn boring data into captivating information, making it easy for learners to remember the subject matter. It connects learners to the subject, transfers information in a unique way and enables learners to get emotionally involved with the subject.
- 2. Guided Learning (Avatars):** Characters represented by real or vector images act as guides for the learner throughout the course, taking on the role of a virtual instructor, in the absence of a physical one.
- 3. Case Studies:** Case studies help learners relate to the subject and understand how it is related to real-world situations.
- 4. Scenario-based Learning:** The scenario-based approach works well to teach learners the tasks they need to perform in their jobs.
- 5. LEAD (Learning through Exploration and Discovery):** The LEAD strategy enables learners to gain mastery over the core concepts in the course through interactivities.
- 6. Watch-Try-Do Simulations:** This approach demonstrates the process, and then invites the learner to try and perform the required operations with some guidance and finally, allows them to do the process all by themselves. It provides a smooth transition from watching, to trying and finally, executing the operation.

The choice of strategy depends on your target audience, the subject matter, learning environment, and constraints such as time, money, and resources. Strategies may also be combined to ensure better learning for your audiences.

# Interactivities

Interactivities are used to:

- Engage learners
- Enhance the learning environment
- Address kinesthetic learners (who learn better when they do something)

## Types of Interactivities

There are two types of interactivities – simple on-click and thinking interactivities.

### On-click Interactivities

An on-click interactivity is where the learner is taught the concept through layers, the content of each layer appearing on click.

Here are some of the different types of on-click interactivities used in courses.

S. No	On Clicks	Used to
1	<b>Click on Images.</b>	Explain related points through the use of images
2	<b>Click on Tabs</b>	Explain elements related to the same category
3	<b>Click on Numbers</b>	Explain the steps in a procedure or a specific number of elements in a concept
4	<b>Click on Dots</b>	Explain a process or a concept, not necessarily in sequence

5	<b>Hotspots</b>	Name and describe the elements of an image
6	<b>Slide Show (Media Tour)</b>	Explain a process or concept in order OR when images are used with minimal text (media tour)
7	<b>Accordion</b>	Answer commonly asked questions
8	<b>Flip Cards</b>	Display information about key terms/phrases related to a concept with bite-sized information nuggets
9	<b>Flip Book</b>	Display a series of information in a book format
10	<b>Timeline</b>	Show evolution
11	<b>Video</b>	Demonstrate real-time videos of how something works or testimonies of happy employees/customers, etc.

It is important to ensure a variety in the interactivities in the course. At the same time, they need to be relevant to the course content and not included just for the sake of having them.

## Thinking Interactivities

A 'Thinking' interactivity is where the learner is given an opportunity to think and learn through activities. The learner is asked to answer a question on content that has not been taught.

The feedback to the question provides the teaching point and is followed up in the next screens.

# Assessments

An assessment is a measurement of the learners' achievement of the learning outcomes and is used to evaluate the learner and reinforce learning. They also serve to organize a course by providing a transition between major sections.

The performance of the target group in assessments enables training managers to measure the training outcomes, allowing them to make suitable adjustments in the future.

## Types of Assessments

Two types of assessments are generally used in eLearning courses:

Formative Assessments	Summative Assessments
<p>They refer to the measurement of learning achievements during learning. They form an essential component of learning as they reinforce learning.</p>	<p>They refer to the measurement of learning achievements at the end of the learning. They act as an indicator of the learner's final achievement in the course.</p>
<p>They come after every enabling objective and are diagnostic in nature.</p>	<p>They are used at the end of the course and are evaluative in nature.</p>
<p>They are used throughout the course to support learning by providing immediate feedback and determine how to remedy learning deficiencies.</p>	<p>They measure the extent of the learner's achievement of the goals in the course. They are used to grade learners and associated with "Pass and Fail".</p>

Question types that can be used:

- Single select MCQs (multiple-choice questions)
- Multiple select MCQs
- Match the following
- Drag and Drop
- Drop Down
- Fill in the blanks
- True or False
- Gamified assessments

Only single-select MCQs are recommended in summative assessments, for easier scoring.

## Other Question Types

In addition to the check your understanding questions (formative assessments) and the final quiz (summative assessments), various other types of questions may be used in a course. These include:



**Do You Know Questions** are used at the start of the course to set the stage for the learning, and to stimulate the learner to think about a subject



**Can you Recall Questions** are used in curriculum-based courses to recall key points from a previous module



**Pretests** used at the beginning of the topic to check the learner's knowledge of that topic. The course navigation depends on the learner's response to the pretest.



**Scenario-based Questions** help learners experience the consequences of different decisions.



## How to Create Assessments

Assessments need to be perfectly aligned with the learning objectives. The course should have at least 1 question to test the knowledge for each objective.

A well-constructed question includes:

### Question Stem

- The question stem should map to the learning objectives.
- Questions should be created based on the importance of the topic.

### Option

- Options should include the answer and plausible distractors.
- Clues that reveal the correct answer should be avoided.

### Distractors

- Distractors are the options provided along with the correct answer.
- They should belong to the same family, should be consistent and standardized.
- 'None of the above' or 'All of the above' should not be used as distractors.

## Best Practices for Writing Good Questions

1. Check for understanding, NOT for memorizing.
  - Avoid asking questions whose answers merely repeat information the learner has just read.
  - Create performance-oriented questions.
2. Get the reading level right.
  - Make sure the wording is appropriate to the reading level of the target group.
  - Questions must test the knowledge of the subject rather than their reading ability.

3. Avoid negative words.
  - Questions should be on selecting the correct option rather than incorrect ones.
  - Questions that ask the learner to identify which is NOT the correct answer are confusing and difficult to understand.
4. Make sure that the question and feedback fit on one screen.
5. Content-question or question-content?
  - Content-question: Content is taught first and then a question is asked about the content (The 'show and test' method).
  - Question-content: A question on the topic that is not yet taught is asked first, and then the content is provided in feedback or on following screens (The 'have a go' method).

## How to Give Feedback

Feedback has been described as “the most powerful single moderator that enhances achievement” (Hattie 1999).

Source: <https://teaching.unsw.edu.au/assessment-feedback>

The objectives of feedback are to:

- Guide learners on the steps to take for improvement
- Get them to think and act on their assessment
- Help them evaluate and regulate their learning

Feedback should be such that learners learn from it. It is a good practice to tell learners why they are correct or incorrect. Feedback reinforces learning and instills confidence in learners.

Feedback needs to be constructive, timely, and meaningful, encouraging learners to think critically about their work and reflect on what they need to do to improve it.

Source: [http://cei.ust.hk/files/public/giving\\_assessment\\_feedback.pdf](http://cei.ust.hk/files/public/giving_assessment_feedback.pdf)

Assessments are added in courses not only to evaluate learners' understanding of the concept but also to make eLearning engaging and effective. Research shows that learning is dramatically improved when a learner is asked to respond to questions or problems which require him to recall, analyze, or synthesize new information.

# Performance Support

Performance support tools help learners by providing solutions at their moment of need. They can be given in the form of infographics, bite-sized videos, GIFs, flowcharts, e-books, and PDF documents at the learners' desks, to enrich their work by right-in-time intervention.

## When to Use Performance Support

Performance support tool are required when:

- The consequences of errors are costly
- The task is performed infrequently
- Performance depends on a large body of information
- There is a high turnover
- The task involves many steps
- Limited resources are dedicated to training

# Conclusion

There you have it, the essentials to design learner-centric eLearning courses. It is very important to follow a well-defined instructional design process and eLearning standards to enhance the quality of the digital course.

The choice of the appropriate instructional design strategy goes a long way into the creation of a top-notch online course. Proper visualization and the use of interactivities plays a key role in the making of a highly engaging digital course.

Well-designed courses go a long way in helping employees improve performance, leading to the achievement of your business goals. Indeed, effective instructional design is the heart of a good eLearning course!

# ABOUT US

CommLab India is the most sought-after global leaders for rapid eLearning solutions. The company has 100 International customers in 30+ countries.

With our formidable authoring tools expertise and decades of experience in corporate training and instructional design, we offer rapid eLearning solutions for speed, scale and value with any authoring tool:

1. ILT material conversion into instructionally sound, visually appealing, engaging eLearning curriculums and other digital learning formats.
2. Legacy Course Conversions from Flash or any other authoring tool to HTML5, even if you do not have source files.
3. eLearning Translation of English eLearning courses into 35 international languages – both text and audio.



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