



Clear, Purposeful Structure

Organize content from simple to complex and break information into bite-sized chunks to reduce cognitive load and help learners process ideas step-by-step.



Active, Engaging Learning Content

Design interactive content with multimedia elements and meaningful activities that require learners to think, respond, and apply knowledge rather than passively reading.



Continuous Practice and Feedback

Build in regular practice with varied question types and immediate feedback to strengthen memory, help learners spot gaps, and deepen understanding.



Simple, Intuitive User Experience

Create clean navigation and seamless interfaces that reduce cognitive load, letting learners focus their mental energy on learning rather than figuring out how things work.

1. Clear, Purposeful Structure

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- 1.1.1 Small segments
- 1.1.2 Self-contained segments
- 1.1.3 Logical sequencing
- 1.1.4 Hierarchical page layouts
- 1.1.5 Structural cues

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- 1.2.2 Integrated format
- 1.2.3 Program continuity

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4.3 Media Control & Time

- 4.3.1 Controlling the pace of videos
- 4.3.2 Time estimates

1.1.1

Small segments

Break learning content into small, manageable segments that allow learners to process information step-by-step (the segmenting principle).^{4,5,9}

1.1.2

Self-contained segments

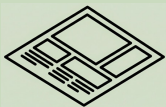
Design learning units and modules to be self-contained. Ensure that each segment can stand alone meaningfully, with minimal dependencies on other content.²⁰

1.1.3

Logical sequencing

Organize information in a clear hierarchical framework, presenting ideas in a logical progression that builds on itself. Start with basic concepts before moving to advanced ones.^{4,5,6,10}

1.1.4

Hierarchical page layouts

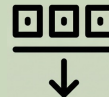
Place important information in prominent positions in page layouts. Clearly indicate content hierarchy through heading styles and sizes. Use white space around content.⁴

1.1.5

Structural cues

Include cues to highlight content organization and structure (the signaling principle). Use headings, introductions, and clear labels to signal what learners should focus on and why.^{4,5,9}

1.2.1

Standardized features

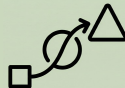
Develop consistent color palettes, fonts, and layout styles. Standardize features so learners can learn conventions and follow industry conventions.^{4,5,10,14,20}

1.2.2

Integrated format

Present related instructional content, assessments, practice, and resources in an integrated format within a single channel to reduce cognitive load from toggling between screens (the contiguity principle).⁹

1.2.3

Program continuity

Ensure continuity in concept and skill development across learning stages in a program.⁵

1.3.1

Clear, measurable learning objectives

Make learning objectives visible to learners, clearly stated, and measurable.^{1,10,20}

1.3.2

Openers and closers



Begin each unit with an opener that orients learners and connects to previous topics. Conclude with a summary that reinforces key points and helps learners consolidate understanding.^{5,20}

1.3.3

Lesson alignment



Align instructional strategies, content, practice, and assessments with learning objectives. Ensure they work together to support learners in achieving desired outcomes effectively.^{4,5,20}

1.3.4

Expectation setting



Specify how successful course completion will be recognized. Ensure learners understand expectations.^{4,8}

1.3.5

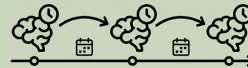
Course introductions



Provide a comprehensive course overview that includes a brief description, organizational structure, and course policies. Clearly communicate any prerequisite knowledge or competencies required.^{4,5,10}

1.4.1

Spaced exposure over time



Design learning that exposes learners to key concepts multiple times over an extended period. Introduce ideas, then strategically revisit them after several weeks or months have passed.¹³

1.4.2

Learner control



Allow learners to decide what content to access, in what order, and at what pace. Provide shortcuts for experienced users.^{1,4,10,20}

2.1.1

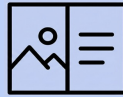
Streamlined content



Present learning content that is succinct, uncluttered, and focused on supporting learning objectives (the coherence principle). Write text blocks in a compact, minimalist style.^{9,20}

2.1.2

Visual content



Present content using both visual and verbal mediums, rather than just text alone (the multimedia principle). Ensure included graphics are relevant and purposeful.^{5,9,13,20}

2.1.3

Minimal decorative graphics



Limit purely decorative images, especially on mobile devices, focusing on graphics that are relevant and purposeful.^{9,20}

2.1.4

Closely placed text and graphics



Position related text and graphics, such as a photo and its corresponding caption, in close proximity on the page or screen (the contiguity principle).⁹

2.1.5

Scannable text



Optimize lesson text for scannability by using short paragraphs, lists, headings, images, and multimedia to visually break up passages.⁹

2.1.6

Progressive disclosures



Layer content, initially showing only essential information. Allow users to access additional details upon request, using techniques like accordions.¹²

2.1.7

Direct access



Provide in-page links or accordions to allow users to skip irrelevant sections and jump directly to content of interest. This approach benefits users searching for specific information.²

2.1.8

Legibility and audibility



Use clear, easy-to-read fonts and ensure any audio is audible.^{4,20}

2.2.1

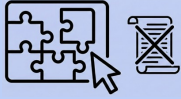
Multimedia-rich content



Incorporate videos, animations, interactives, and audio to capitalize on learners' positive perceptions of multimedia and its inherent appeal.^{4,10}

2.2.2

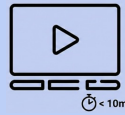
Activity-based content



Incorporate activities and interactive multimedia that actively engage learners through meaningful interactions. Prioritize active participation and "doing" over passive consumption of long text sections.⁴

2.2.3

Short videos



Keep videos under 10 minutes, adjusting length based on content complexity. Break up videos exceeding five minutes into shorter segments (the segmenting principle).^{4,9}

2.2.4

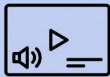
Video narration



Use audio narration to explain related visuals in videos instead of relying on on-screen text (the modality principle).^{4,9,13}

2.2.5

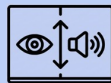
On-screen text in videos



Use on-screen text sparingly in videos to emphasize key points without verbatim repetition of audio narration (the redundancy principle).⁹

2.2.6

Audio-visual synchronization



Present corresponding audio and visuals simultaneously in videos rather than sequentially (the temporal contiguity principle).^{4,9,13}

2.3.1

Social presence



Employ a friendly, conversational style in text and narration, using language that feels authentic and relatable (the personalization principle).^{4,9}

2.3.2

Explaining features



Clarify how specific features, tools, or components support learning objectives. Provide information that helps learners understand the benefits of using these elements.⁹

2.3.3

Activating prior knowledge



Begin lessons with questions, scenarios, or relatable situations that leverage learners' prior knowledge and experiences (the prior knowledge principle).^{6,8,13}

2.3.4

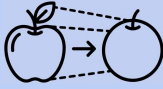
Storytelling



Use storytelling elements like characters, conflict, and narrative arcs to tap into learners' natural affinity for stories.^{4,6}

2.3.5

Concreteness fading



Begin lessons with specific examples and gradually introduce abstract representations, connecting them to the concrete examples by highlighting relevant features.¹³

2.3.6

Appropriate leveling



Ensure content difficulty aligns with curriculum requirements and learners' knowledge and abilities. Aim for an intermediate difficulty that is neither too simple nor too challenging.^{5,8,10,20}

2.3.7

Interest and relevance



Use examples and illustrations that are interesting and relevant to learners.^{5,8,10,20}

2.3.8

Key terms



Highlight and define key words, concepts, and glossary terms aligned with curriculum aims and objectives.^{5,19}

2.3.8

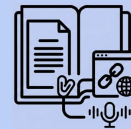
Varied examples and perspectives



Offer multiple varied examples, contexts, and perspectives, pointing out similarities and differences.^{5,8}

2.4.1

Additional resources



Allow learners to access supplementary resources like pronunciation guides and related content links.^{5,20}

2.4.2

Currency and accuracy



Ensure content is current, accurate, and properly sourced, with no inaccuracies.^{4,5,6,10,20}

2.4.3

Inclusivity



Ensure content is free from bias, stereotyping, and discrimination.⁵

2.4.4

Conveying credibility



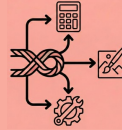
Clearly communicate the source and reliability of information presented. Include indicators of credibility such as author credentials, publication dates, and references to reputable sources to build trust with learners.⁹

3.1.1

Varied practice

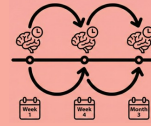
Offer practice with different instances, contexts, and scenarios for the same skills.^{4,8}

3.1.2

Interleaving practice

Mix related skills and concepts in practice sessions instead of focusing on one at a time.⁹

3.1.3

Spaced practice

Provide practice that cycles back to the same skills or concepts multiple times over an extended period.¹³

3.1.4

Effortful practice

Use practice questions that require learners to actively recall information, such as fill-in-the-blank or short-answer formats.^{5,13}

3.1.5

Authentic practice

Create practice reflecting real-world contexts and challenges relevant to learners' future professions.^{8,20}

3.1.6

Low-stakes practice

Provide ungraded practice allowing learners to learn from mistakes without grade consequences.⁹

3.1.7

Practicing prior skills

Have students practice key prior skills before introducing new topics, using pre-questions to prepare them for upcoming content.^{8,9,13}

3.2.1

Targeted feedback

Offer specific, goal-oriented feedback focused on actions learners can take to improve performance.^{4,10,14,17,20}

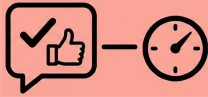
3.2.2

Encouraging feedback

Provide feedback in an encouraging manner and tone, celebrating progress and invoking positive emotions.^{4,6,17}

3.2.3

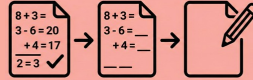
Immediate feedback



Give feedback immediately after learners submit questions or assignments.⁸

3.2.4

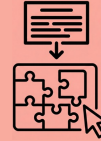
Worked examples



Offer worked examples, gradually transitioning to partial examples and independent problem-solving (the worked examples principle).^{9,13}

3.2.5

Clear instructions



Provide clear instructions, rubrics, and detailed expectations for learning activities and assessments.^{4,5}

3.3.1

Self-assessing progress



Assist learners in accurately assessing their learning progress and using this information to plan study time efficiently.^{4,5,13}

3.3.2

Generating explanations



Prompt learners to generate explanations that demonstrate higher-order thinking. Ask questions that probe causes, consequences, and evidence such as "why," "how," and "what-if?"^{3,4,13,20}

3.3.3

Reflection



Prompt learners to assess their own learning and reflect on what and how they have learned.^{5,20}

3.3.4

Social learning



Provide opportunities for learning through interaction and collaboration, such as discussions, group projects, and teamwork.^{1,4,10,20}

4.1.1

Intuitive navigation

Design navigation systems that are intuitive and minimize wasted efforts.^{4,5,19,20}

4.1.2

Progress and location indicators

Include a map or progress indicator showing the learner's location within the lesson to aid motivation, time management, and the desire for completeness.^{4,10,16,20}

4.1.3

Differentiate static vs. interactive content

Enable learners to easily recognize interactive elements within content to avoid confusion about what is clickable.¹¹

4.1.4

A "closed" learning system

Present the learning system as a self-contained, closed environment. Clearly label external links or relegate them to a reference section.^{4,19}

4.1.5

Resume where you left off

Allow learners to easily find their place when returning to the learning system after time away.^{11,19,20}

4.2.1

Simple and advanced search

Provide simple and advanced search options for learners to find specific details within lessons.¹⁹

4.2.2

Note-taking and highlighting

Incorporate tools for learners to take notes, highlight, and annotate lessons.^{5,19,20}

4.2.3

Viewability on different screen sizes

Optimize viewability across different screen sizes and devices, leveraging the benefits of portability and instant availability. Use reflowable text and allow zooming for graphics.⁵

4.2.4

Customizing display based on preferences

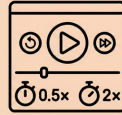
Enable learners to customize text display, including font styles, sizes, and background colors, based on individual preferences.¹⁹

4.2.5

Minimalist design

Prioritize clarity and simplicity in the learning system's UX/UI.^{1,11,14}

4.3.1

Controlling the pace of videos

Include video player controls that allow learners to play, replay, speed up, slow down, or skip videos at their own pace.⁹

4.3.2

Time estimates

Provide lesson time estimates and clear time stamps on video or audio resources.⁹

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