

CE Supplemental Resources for Sponsors

Background Information

One goal of continuing education programs is to provide psychologists with evidence-based knowledge and skills to meet real-world professional challenges.

The science of learning and instruction helps inform the design and delivery of continuing education programs that promote meaningful learning. Meaningful learning occurs when learners can apply material taught during a CE program to their professional environments. Learning is an active process in which learners actively filter, select, organize, and integrate information based on their existing knowledge (Mayer, 2009).

Most learning in continuing education programs involve multimedia learning involves words and pictures (Mayer, 2010). Verbal learning includes not only printed text in a power point presentation, book, or web-based presentation, but also the presenters' spoken words. Pictorial learning can involve, videos, animation, charts, tables, drawings, diagrams, or photographs.

What does this mean for CE presenters?

Your first step is to clearly conceptualize exactly what you would like your audience to learn. As part of your CE program design and delivery, you are asked to develop specific learning objectives that directly state what is to be learned. This is an important step in designing your program (Please see the tips on designing effective learning objectives), and you should attempt to design these learning objectives before you develop your actual program content. Learning objectives are tied to your assessment of learning, and allow you to understand the audience's acquisition of facts, concepts, procedures, strategies, and beliefs (Mayer, 2010). These areas of acquisition are all important in the professional tasks we face as psychologists. In addition, presenting new information that links to the prior knowledge of learners and leads to increasing knowledge also reduces cognitive load (De Jong, 2010). For CE purposes, the sponsors can accomplish this by assessing the level of their CE program (i.e. beginning, intermediate, advanced) and linking their program information to knowledge and skills that build on a doctoral education in psychology.

Mayer, Fennell, Farmer, and Campbell (2004) cite evidence that there are two important ways to promote meaningful learning: 1) design activities that reduce cognitive load, and 2) increase learner interest.

Cognitive Load Theory (CLT) helps inform the design of effective learning programs in such a way as to not overload the brain's capacity for processing information.

It is helpful to avoid unnecessary activities or non-essential information that may be entertaining to the audience, but does not contribute to the actual information or skill that is the focus of your CE program. We can overload a learner's working memory by including non-essential information or activities. Overloading learners prevents them

from acquiring the essential professional content in your CE program. Although this is an important focus in any program design, it is especially true if you are using a multimedia presentation (De Jong, 2010; Sorden, 2005).

When using a multimedia instructional format, try to include a visually appealing presentation that is focused on the concepts to be learned versus working too hard to entertain the audience. If working memory is overloaded by too many “bells and whistles”, learners may miss the information or skill that is the focus of your CE program. Mayer (2009) stated that effective “instructional design depends on techniques for reducing extraneous processing, managing essential processing, and fostering generative processing” (p. 57).

Tips in Applying the Science of Learning to Design Multimedia CE Presentations (Mayer, 2010)

To Reduce Extraneous Processing in Learners

1. Eliminate any unnecessary, extraneous, material
2. Highlight the material you feel is essential in the program
3. Place written content in close proximity to the related graphic content

To Manage Essential Processing

1. Break the overall CE program into manageable, learner-controlled segments
2. Present written words in spoken form whenever possible
3. Provide introductory information regarding names and characteristics of key program concepts

To Facilitate Generative Processing

1. Present both words and pictures versus words alone whenever possible
2. Present verbal content in conversational style
3. In distance-education, use a human voice versus a mechanized voice

Excerpts from the 25 Principles of Learning (Graesser, Halpern, & Hakel, 2008) as Related to CE Program Development

Contiguity Effects. Ideas that need to be associated should be presented contiguously in space and time.

Dual Code and Multimedia Effects. Materials presented in verbal, visual, and multimedia form richer representations than a single medium.

Generation Effect. Learning is enhanced when learners produce answers compared to having them recognize answers.

Organization Effects. Outlining, integrating, and synthesizing information produces better learning than rereading materials or other more passive strategies.

Coherence Effect. Materials and multimedia should explicitly link related ideas and minimize distracting irrelevant material.

Stories and Example Cases. Stories and example cases tend to be remembered better than didactic facts and abstract principles.

Multiple Examples. An understanding of an abstract concept improves with multiple varied examples.

Desirable Difficulties. Challenges make learning and retrieval effortful and thereby have positive effects on long-term retention.

Manageable Cognitive Load. The information presented to the learner should not overload working memory.

Explanation Effects. Students benefit more from constructing deep coherent explanations (mental models) of the material than memorizing shallow isolated facts.

Deep Questions. Students benefit more from asking and answering deep questions that elicit explanations (e.g., why, why not, how, what-if) than shallow questions (e.g., who, what, when, where).

Cognitive Disequilibrium. Deep reasoning and learning is stimulated by problems that create cognitive disequilibrium, such as obstacles to goals, contradictions, conflict, and anomalies.

Cognitive Flexibility. Cognitive flexibility improves with multiple viewpoints that link facts, skills, procedures, and deep conceptual principles.

Goldilocks Principle. Assignments should not be too hard or too easy, but at the right level of difficulty for the student's level of skill or prior knowledge.

Discovery Learning. Most students have trouble discovering important principles on their own, without careful guidance, scaffolding, or materials with well-crafted affordances.

Anchored Learning. Learning is deeper and students are more motivated when the materials and skills are anchored in real world problems that matter to the learner

Tips for Encouraging Program Speakers to Use Best Practices

We recognize that much of continuing education involves organizations incorporating experts in area of study or practice that provides up-to-date review of clinical or basic research to your organization. It can be challenging for organizations to maintain their quality of continuing education with this situation if the speaker is not aware of your expectations for the continuing education. Given this, we offer the following suggestions for consideration:

1. When inviting the speaker describe the format and expectations for the presentation in a way that includes issues of quality such as pedagogical style, presenting limitations of presented clinical skills or research, and including current research or clinical knowledge. This may require you to communicate appreciation of the expert's content knowledge balanced with the expectations for your organization.
2. A written memo of understanding (MOU) or contract is often helpful to communicate with speakers your needs for continuing education such as quality learning objectives, expected level of audience, learning environment and audience engagement. A MOU/contract might include some or all of the following information:
 - a. Length of presentation and number of CEs
 - b. Number of learning objectives with instructions on APA CEC requirements for the development of learning objectives
 - c. Level of audience (beginner, intermediate, advanced)
 - d. Credentials and speaker description/ images to be used in advertisements
 - e. Expectations of pedagogy to include engagement with the audience and suggestion for facilitating engagement for your setting
 - f. Explanation of conflict of interest expectations in presentation
 - g. Expectations on describing limitations of research or clinical training
 - h. How references or written sources will be communicated to the audience
 - i. Planned assessment of learners
 - j. Ethical obligations relevant to your organization
 - k. Logistical issues such as date, time, remuneration, transportation, etc.
3. Requesting a copy of the speaker's presentation materials prior to finalizing your agreement can help address anything that is missing or needs adjustment, such as learning objectives or stated limitations of the clinical training or research.

Tips for Enhancing the Transfer of Learning

1. Focus on presenting information that is practically relevant to your intended audience
 - a. The learner perceives the content as relevant and useful
2. Include case presentations, stories, and applied examples
 - a. Program content addresses practical problem solving
3. Encourage audience/participant interaction
 - a. Example: Incorporate small group exercises focused directly on application of material
 - b. Provide feedback from the presenter and other audience member
4. Provide an opportunity for learner reflection

Tips for Distance-Based CE Presentations

Encourage learners to self-explanations during learning by giving activities throughout the teaching that requires participants to stop and review, restate or apply what is being taught.

Present a map to learners showing where they are in your CE program.

Include examples of problems that are already solved during the initial learning of a skill.

Use technology that complements the content and structure of your CE program. More is not always better.

Try to incorporate ways to engage the learner, using strategies such as embedded questions with delayed answers, interacting regarding case studies, problem solving, discussions, etc.

Provide opportunities for active problem solving (Hanover Research Council, 2009)

Ideal distance-based learning stops ever 5-10 minutes to engage the learner in an interactive exercise. This might be a reflection question, application, case study or problem to solve. Synchronous learning might poll the audience or ask for posting on a chat board every 5-10 minutes. Asynchronous learning would engage with self-quizzes and answers throughout the learning material.

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