Self-Explanation in Training

A Summary of Workforce Research Evidence Relevant to the Child Welfare Field

What is self-explanation?

Self-explanation is "a process by which learners generate inferences about causal connections or conceptual relationships" (Bisra et al., 2018). It involves pausing to think more deeply about instructional content, to better connect it with prior knowledge or to check for understanding. Self-explanations can be prompted (through specific instructions or questions) or unprompted (done spontaneously by a learner). Prompts can include instructions to explain, open-ended questions, or closed-ended questions such as multiple choice (Bisra et al., 2018). There is no one type of self-explanation. Examples include providing rationale for a decision or belief and explaining a concept, process, or prediction (Bisra et al., 2018).

Prompts can be tailored specifically to the content or be more generic, and therefore applicable to a variety of content. Examples of more generic prompts include:

▷ "Could you explain how this works? Could you explain why this works?" (de Koning et al., 2010)
▷ "Explain what the sentence means to you. That is, what new information does the sentence provide for you? And how does it relate to what you already know?" (O'Reilly et al., 1998)
▷ "Explain how you solved the problem" (Rittle-Johnson, 2004)
▷ "Why should you _____?" (Berthold & Renkl, 2009)
▷ "What does the error message mean? Why does the error cause problems?" (Kwon et al., 2011)
▷ "Explain to yourself how the terms _____ are used. Consider both their relation to each other as well as to _____." (Crippen & Earl, 2007)
▷ "As you read the text the second time, you should try to explain to yourself the meaning and relevance of each sentence or paragraph to the overall purpose of the text. Ask yourself questions like: What new information does this paragraph add? How does it relate to previous paragraphs? Does it provide important insights into the major theme of the text? Does the paragraph raise new questions in your mind? So, try your best to think about these issues and ask yourself these kinds of questions about the text as you read it for the second time." (Griffen et al., 2008)

Why is self-explanation valuable?

Self-explanation is valuable because it has a moderate and positive effect on learning outcomes. When learners are asked to provide some form of self-explanation after an initial instructional task, it results in improved learning beyond that attained with just the initial instructional task alone (Bisra et al., 2018). Even when learners receive (versus generate) additional explanation, the results are not as good as when self-explanation is used (Bisra et al., 2018). Though there is great variability in the use of self-explanations, many of those differences turn out to be mostly inconsequential. These include the timing of the prompt (before, during, or after an instructional activity), the specificity of the prompt (tailored to the specific content or more general), format of the prompt (e.g., instructions vs. various types of questions), type of self-explanation elicited (e.g., explanations, justifications), type of instructional task (e.g., solving problems, reading text, studying worked examples), type of knowledge (conceptual vs. procedural), and instructional medium (print, digital, video; Bisra et al., 2018).

QIC-WD Takeaways

► Self-explanations have a moderate and positive effect on learning outcomes.
► As a supplement to an initial instructional task, self-explanations are more effective than instructor-provided explanations.
► Many variations of self-explanations can be effective.
► It is recommended that prompts for self-explanations be included in child welfare training.

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