How Reflecting on Previous Recall Affects the Efficacy of Later Restudy Periods

Practicing active retrieval during learning by alternating between reading and recalling material (study, recall, restudy, recall, etc.) is an effective strategy for promoting meaningful learning. We examined whether it would be effective to enhance restudy periods by highlighting information that students had missed in previous recall attempts. To accomplish this, we used a computer-based scoring algorithm, called QuickScore (Grimaldi & Karpicke, 2012), to score students' recall responses on the fly. Students studied educational texts during study periods and freely recalled them during recall periods. Then, during restudy periods, one of three things happened: (1) students read a text in which parts they had not recalled were highlighted by the computer, (2) students thought back to their previous recall period and self-highlighted ideas they thought they had missed, or (3) students read the text with no highlighting (a standard condition used in most experiments). On a final recall test one week later, students in the computer-highlighted and self-highlighted conditions recalled fewer ideas than students who simply read the text. This suggests that highlighting missed concepts from past test episodes during study periods may disrupt encoding.