Applications of Cognitive Science to Enhancing Scholarly Communication

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Abstract: Learning from and building on the accomplishments of scholarly publications is often difficult. To address this challenge, this work leverages well-replicated cognitive science phenomena to promote people's understanding of research found in journal articles. It forms the conceptual groundwork for a digital platform through which users can author and learn from interactive multimedia documents that communicate research more effectively. One of the many recommendations is to reduce the split-attention effect by integrating text and graphics in figures. Doing so may help readers understand complex visuospatial representations. Encouraging active processing via comprehension questions and responsive simulations of experimental procedures embedded in articles may boost learning even more. To promote the creative extension of research, evidence-based brainstorming prompts that trigger analogical reasoning and episodic specificity induction should be adopted. If scholarly communication is centered on scientific principles like these, then the dissemination and dynamics of science may both advance.