

What should be the role of computer games in education?

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Table 2. Five Promising Features for What Works With Educational Computer Games.

Feature	Description	Effect size
Personalization	Put words in conversational style rather than formal style	1.5
Modality	Put words in spoken form rather than printed form	1.4
Self-explanation	Add prompts to explain at key points in the game	0.8
Coaching	Add advice or explanations at key points in the game	0.8
Pretraining	Add pregame activities that describe key components	0.7

Game advocates are calling for a sweeping transformation of conventional education to replace traditional curricula with game-based instruction. But what do researchers have to say about this idea and what is the role of policymakers? A new study out today discourages an educational revolution based on gaming and encourages adding promising features to games in schools including heightened use of explanative feedback in games and relevant pregame activities. Credit: Richard E. Mayer

Game advocates are calling for a sweeping transformation of conventional education to replace traditional curricula with game-based instruction. But what do researchers have to say about this idea and what is the role of policymakers? A new study out today discourages an educational revolution based on gaming and encourages adding promising features to games in schools including heightened use of explanative feedback in games and relevant pregame activities. This article is part of a new issue of *Policy Insights from the Behavioral and*

Brain Sciences (PIBBS), a Federation of Associations in Behavioral & Brain Sciences (FABBS) journal.

Researcher Richard E. Mayer surveyed research on game features that improve learning. He found five game features that substantially improve student performance including:

- Putting words in conversational style rather than formal style
- Putting words in spoken form rather than printed form
- Adding prompts to explain key points in the game
- Adding advice or explanations at key points in the game
- Adding pregame activities that describe key components of the game

Mayer also discussed the extent that gaming improves cognitive skills. He found two types of games that lead to substantial improvements in specific cognitive skills: first person shooter games and spatial puzzle games (such as Tetris). However, he did not find substantial evidence that any other games improve [cognitive skills](#) nor that any games improve reasoning or memory skills.

"Overall, cognitive consequences research does not support claims for broad transfer of game playing to performance on cognitive skill tests," Mayer wrote. "That is, no sufficient evidence supports the claim that playing computer games can improve one's mind in general."

However, Mayer did find that when teaching science, [game](#) can be more effective teaching tool than traditional media such as books and slideshow presentations.

Mayer discussed the implications of this research for [policymakers](#), claiming that there is a place for small games that focus on well-specified learning objectives, become more challenging as students

learn, and fit within existing educational programs to supplement, complement, and/or extend traditional instruction rather than replace it. He also cautioned against supporting video games simply because students like them as liking does not necessarily translate into learning.

"The major policy implication of this review of research on games for learning is that it is premature to call for a major overhaul of schools based on computer games: The research certainly does not warrant extensive replacement of current educational practices with practices based on computer games," Mayer concluded.

More information: "What should be the role of computer games in education?" in *Policy Insights from the Behavioral and Brain Sciences*.

Provided by SAGE

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