

Using challenging concepts to learn promotes understanding of new material

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It's a question that confronts parents and teachers everywhere- what is the best method of teaching kids new skills? Is it better for children to learn gradually, starting with easy examples and slowly progressing to more challenging problems? Or is it more effective to just dive-in head first with difficult problems, and then move on to easier examples? Although conventional wisdom suggests that the best way to learn a difficult skill is to progress from easier problems to more difficult ones, research examining this issue has resulted in mixed outcomes.

University of California, Santa Barbara psychologists Brian J. Spiering and F. Gregory Ashby wanted to pinpoint the best strategies for learning new information. In their study, a group of volunteers were taught a new task in which they had to categorize items. The volunteers were trained to complete the task by one of three methods—starting with easy problems, starting with harder problems then moving on to easier examples or being shown examples in random order.

The results, published in *Psychological Science*, a journal of the Association for Psychological Science, showed that the effects of the different training methods depended on the type of categories that the participants were learning. When the categories could be easily described (i.e. was the line horizontal or vertical?), all three of the training procedures were equally effective. However, when the categories could not be described easily, starting with the harder problems then moving to easier ones produced the best results. The volunteers in the easy-to-hard group were able to come up with simple

rules and category descriptions which worked for the easy problems, but were not applicable to more complicated problems.

As a result, these participants ended up doing poorly on the task because they were unable to think abstractly to solve the problem. On the other hand, the participants who began with harder problems very quickly stopped trying to come up ways to describe the categories and thought about the problems in a more abstract way; this strategy helped them to perform well throughout the task.

These findings have important implications for teachers and educators and suggest that materials should be presented to students in a specific order, depending on what is being taught.

Source: Association for Psychological Science

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