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How Struggle Leads to Learning

Andrew Meltzoff and Rebecca Williamson // Oct. 31, 2011 // 11:30 AM

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Imitation is one of the best ways to foster early learning. For preschoolers, copying what others do is a go-to strategy for learning tasks like how to answer the phone, peck at a keyboard and tie their shoes. But we're finding that teaching by example is not automatic. Children are picky when it comes to imitation, and they can be swayed by social context and the usefulness of the example. We think that this is important because it could suggest strategies for boosting learning in kids who aren't as attentive to the examples of others.

Prior experience with a particular task influences children's willingness to learn, as shown by one of our latest studies. We found that if kids had trouble – or watched an adult have trouble – completing a task, then the kids were more likely to pay attention to an effort-saving strategy demonstrated to them.

Children become ready to learn from others when they experience trouble solving a problem. The experience can come from their own hands-on encounter or simply from observing the difficulties of others. This "opens them" up for learning.

In the study, published in *Cognitive Development*, we had three-year-olds open a drawer that contained a toy. In some cases, the drawer was rigged so that it was hard to open, but all kids in this group were eventually able to open the drawer and reach the toy.

Then, we had all the kids watch as an experimenter demonstrated a technique for opening the drawer: The experimenter pressed a small switch on the side of the drawer and then easily slid it open.

Next, we asked all the children to try opening the drawer again - and this is the crucial part of the experiment:

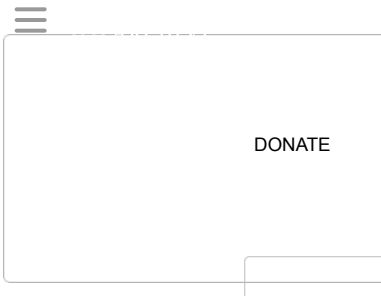
- Would children who initially struggled to open the drawer try the experimenter's trick?
 - Would the children who had not struggled to open the drawer not bother with the extra step?
- Sure enough, children who had struggled with the drawer were almost twice as likely to open it on their second try. And, when we had some kids simply observe someone else struggle to open the drawer before being given the chance to open it themselves, the children used the switch.

This means that toddlers can track what is an effective strategy and they're using that information to decide whether or not to use that strategy. We think that to make children open to instructions and ready to pay attention, it may be helpful for them to have a hard time with the task first. Then, maybe they'll be more likely to be open to learning.

Children also learn from others' mistakes. They learn when people struggle with a task. So, parents need not worry, even their imperfect examples can provide valuable lessons to their children.

Children are picky imitators and choose when and why to copy adults. If they have trouble solving a task or they see somebody else struggle with solving it, they become more open to learning new techniques and imitating an adult with a novel technique. There are "desirable difficulties" kids can experience in learning - difficulties that make them ready to learn and more open to absorbing adult pedagogy.

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