

Learning from Mistakes

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Academic performance is related to basic intelligence. However, children's performance in school is greatly influenced by their attitudes toward failure — and the way they view their own mistakes. If children interpret failing an exam as an indicator of innate inadequacy, they are likely to give up on school. On the other hand, if they conclude that it signals a need to study harder, they tend to do better the next time.

Psychologist Carol Dweck has spent 20 years exploring children's approaches to school work. A veteran researcher in motivation and personality, she has found that two explanations to school work by children — helplessness versus mastery — affect their later performance in school.

Children with a **helpless** perspective assume their inadequacy is a *fixed trait* — one that cannot be changed. Dweck believes that this pessimistic view can hurt their later academic performance. These children have a warped view of their capabilities. They believe that people are born smart or stupid, and there is no way to change this. They focus on grades — passing or failing. Any mistake or failure leads them to think they are stupid.

In contrast, other children follow a **mastery** viewpoint — people need to seek knowledge and challenges to become smart. They view failure or mistakes as indicating that they need to focus more on their learning and try harder. Failure is seen as part of a fluid learning process that expands their abilities. According to Dweck:

"Kids who think intelligence is fixed become consumed with worry about whether they'll be judged smart or not. Kids who think it's fluid don't worry so much and appreciate the long-term benefits of what they're actually learning."

Dweck's view originated in the 1970s, when she studied 130 fifth-graders in semirural schools near Urbana-Champaign, IL, with psychologist Carol Diener. The children were divided into helpless and mastery groups. They were asked to attempt a series of problems. (The problems could *not* be solved.) Both groups did equally well on the problems, but they reacted differently to their failure. In Diener's words:

"The helpless kids quickly gave up and decided they had failed, often blaming their own inability. Mastery kids focused on how to do better in the future."

Helpless kids have a very *pessimistic* outlook. They downplay their successes in solving problems and anticipate failure. With anticipated failure, some don't even try to succeed. In contrast, mastery children are more *optimistic*. They remember previous accomplishments and feel confident that they will be able to solve future problems.

In the 1980s, she discovered another feature. There is no real difference in the children's academic performance in elementary school. The differences start appearing in junior high school, when academic demands start to increase.

Often children who do very well in elementary school are more vulnerable in junior high. They may be used to easy successes and unaccustomed to failure. On the other hand, mastery students are able to face challenge and failure. Dweck states, *"If life were one big grade school, you probably wouldn't see these vulnerabilities emerging."*

In 1990, Dweck studied 226 seventh-graders attending challenging junior high schools in the Urbana-Champaign area. The students were classified according to mastery versus helpless viewpoints and high or low confidence levels. She compared the grades and achievement-test scores of these four groups.

They found that mastery-viewpoint students earned better grades than would be predicted. High achievers continued to do well, and low achievers improved significantly in the seventh grade. Even low-achievers with low confidence improved dramatically — some earned the highest grades.

With helpless-viewpoint students, the results were dramatically different. Low achievers with low confidence stayed that way. Many previously highly confident, high achievers became the lowest achievers in the seventh grade.

Among these "ex-star" students, girls are more likely to develop helpless viewpoints. Girls are more likely to mistakenly think that "those who have to work hard are stupid." During the easier elementary years, these girls receive lavish praise from parents and teachers. This leads to their confused belief that achievement comes without effort. Dweck believes that being naturally gifted helps, but motivation and *perception* of ability help children to realize their potential.

"Effort should be perceived as an ally, not a threat."

In 1986, with psychologist Ellen Leggett, Dweck surveyed 133 eighth-graders in Arlington, Mass., on their perception of hard work. Among the brighter students, girls were more likely than boys to believe that needing to put forth effort meant they were not smart.

This may be related to their treatment in elementary school. Since boys misbehave more, authority figures are more likely to make an effort to instill good work habits in them. In contrast to developing a good work ethic, girls are reinforced for their good behavior and "smartness." Also girls tend to blame their failure on their own inadequacy, while boys tend to blame their lack of effort.

These girls — although their self-confidence is reduced — may not have lower grades. Their grade levels are probably maintained by avoiding rigorous courses, like science and math (even psychology).

Leggett finds fault with society and school curricula for fostering the belief that intelligence is fixed. In her words:

"Children hear that Edison discovered electricity but they don't hear about his struggle to do it... (T)he process is just as important as the right answer... errors are a part of that process. Kids need to hear that the learning process is about exploring, taking risks, making mistakes and learning a lot along the way."