The importance of children’s self-perception for later academic success

by Meeri Kim
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Research by psychologist Pamela Davis-Kean shows that self-concept of ability in math and reading when children are 8-11 years of age is linked to academic achievement in adolescence.

Self-concept of ability, which refers to students’ perception of their capability to successfully perform in school, is often proposed as a key factor for academic achievement. The general hypothesis is that young children who evaluate themselves positively on their academic abilities will perform better on achievement indicators (grades and tests) across time. Self-concept of ability is generally considered an indicator of academic motivation.

But University of Michigan psychologist Pamela Davis-Kean had lingering doubts. She had investigated students’ self-concept of ability over the past two decades, starting with her doctoral dissertation work in preschoolers. In subsequent studies, she found that children really started to think about their own abilities and comparing them to others’ as early as age 8 but mostly around 10 to 12 years old.

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“I remained skeptical about self-concept of ability being a strong predictor of achievement, but it kept predicting to later achievement despite having controlled for prior achievement,” said Davis-Kean.

To try and settle the issue, Davis-Kean and her colleagues decided to isolate self-concept of ability and tease out its association with later achievement with a new study published in September 2017 in Child Development. After analyzing three large-scale longitudinal datasets with children aged 11 to 15, the authors found that self-concept of ability in math and reading does in fact predict later achievement in each respective domain. To their surprise, this result was consistent across all levels of achievement and not only for the highest achievers.

Previous findings from empirical research investigating the link between self-concept of ability and achievement have produced mixed results. In addition, they often focused on a single subject (e.g. math) or averaged over students with different levels of achievement. Davis-Kean and her colleagues wanted to see whether the relation would hold for the lowest achievers – and in fact, it did.

“Even if you were in the bottom 10th percentile of achievement — in other words, if 90 percent of
the students did better than you – if you thought you were better at the subject, then you performed better in your comparable group,” Davis-Kean said. “There is something about the student’s belief system that seems to be promoting achievement.”

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Also, they controlled for a large number of factors including demographic variables (e.g. age, race/ethnicity, maternal education, family income), child characteristics (e.g. working memory, socio-emotional and behavior problems), and early achievement to isolate the links between self-concept of ability and academic achievement.

Self-concepts of ability were assessed through questionnaires that asked the children things like “How good at math/reading are you?” or “If you were to list all the students in your class from the worst to the best in math/reading, where would you put yourself?” The researchers then performed a statistical analysis to see how well these scores could predict math and reading exam scores taken two to five years later during adolescence.

“Now I can say that I’m much more convinced that whatever self-concept of ability is tapping, it seems to be a major player in understanding kids’ achievement,” said Davis-Kean. “I think teachers and parents should be aware that these self-perceptions may have long-term outcomes.”

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Her body of research on students’ self-concept suggests that middle childhood (8-11 years of age) may represent a critical time point when self-beliefs are being formed. Interventions during this period could therefore prove influential. For instance, programs that raise girls’ self-perceptions of math and science ability may help increase the number who later decide to pursue STEM-related careers.

Self-Concept Predicts Academic Achievement Across Levels of the Achievement Distribution: Domain Specificity for Math and Reading, by Maria Ines Susperreguy, Pamela E. Davis-Kean, Kathryn Duckworth, Meichu Chen. Child Development, September 2017

The study used data from the Avon Longitudinal Study of Parents and Children, the National Institute of Child Health and Human Development – Study of Early Child Care and Youth Development, and the Panel Study of Income Dynamics – Child Development Supplement.

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