

# It takes more than practice to excel, psychologist reports

July 29 2014, by Susan Griffith

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Case Western Reserve University's new assistant professor of psychology Brooke N. Macnamara, PhD, and colleagues have overturned a 20-year-old theory that people who excel in their fields are those who practiced the most.

Their findings are in this month's online issue of *Psychological Science*.

"Don't get me wrong. Practice is important," said Macnamara, "It's just not as important as many have thought. What does count for the skills is still unknown."

Macnamara, who was a doctoral student at Princeton University at the time she conducted the study's research, teamed with David Z. Hambrick, PhD, from Michigan State University, and Frederick L. Oswald, PhD, from Rice University. Each has studied how people acquire skills and become experts at what they do.

The idea that practice is the leading factor in achievement came from studies by K. Anders Ericsson, a Swedish psychologist.

In 1993, Ericsson and colleagues proposed the idea that differences in amounts of accumulated practice were the main reason why people differed in their expertise. They arrived at that conclusion by asking violin students to estimate their lifetime practice. They found that the average amount of practice estimated by the "best" students was about 10,000 hours, which was higher than the averages of less-skilled

students.

Author Malcolm Gladwell further advanced that idea in *Outlier: The Story of Success* (Little Brown and Company 2008) by proposing the 10,000-hour rule—the notion that with 10,000 hours of practice one becomes an expert.

But Macnamara and her colleagues found that practice explained 12 percent in mastering skills in various fields, from music, sports and games to education and professions. The importance of practice in various areas was: 26 percent for games, 21 percent for music, 18 percent for sports, 4 percent for education and less than 1 percent for other professions.

Their conclusion was based on a comprehensive review of 9,331 research papers about practice relating to acquiring skills. They focused specifically on 88 papers that collected and recorded data about practice times.

The data from interviews and questionnaires about the amount of time spent practicing supported the researchers' original assumption that something other than practice time was involved in mastering a skill.

Macnamara and colleagues also found that when amount of practice was estimated by logged hours in a journal over time—presumably a more accurate measure than when one tried to estimate lifetime practice from memory—that practice made up an even smaller percentage in acquiring the skill than the study's average.

Her next step is to find out what factors contribute to being an expert on an instrument, playing field, in the classroom or at work. She hopes to investigate such factors as basic abilities, age when starting to learn the skill, confidence, positive or negative feedback, self-motivation and the

ability to take risks.

A great practice musician could freeze up in front of an audience, she said. Yet someone less skilled but with more confidence could shine.

So practice isn't the whole story, she said.

Provided by Case Western Reserve University

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