

# Over-thinking and motor skills: When teachers can't do

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(PhysOrg.com) -- Hoping to sink a perfect putt? Don't talk about it, just do it. Psychology research shows over-thinking may be one reason those who teach often can't do the task as well as they'd like.

Skilled athletes often maintain that thinking too much about executing a skill disrupts their performance, so University of Michigan psychology researcher Kristin Flegal and Michael Anderson, a psychology professor at the University of St. Andrews in Scotland, tested that intuition.

Researchers asked 80 golfers to learn a unique putt, then to spend several minutes either verbally describing what they'd learned or working on an unrelated task for the same amount of time. Afterwards, they were asked to perform the putt again. The research is detailed in the journal *Psychonomic Bulletin & Review*.

After spending only several minutes describing their putting, higher-skilled golfers needed twice as many attempts to sink their putts, compared to equally experienced golfers who did not put their memories into words. In contrast, lower skilled golfers were, if anything, helped by several minutes of verbalizing about what they learned.

"It's so elementary that if you practice something you should get better at it but we found when people had to explain what they just did, they actually got worse," Flegal said. "The problem is a mismatch between the kind of memories that we can verbalize and the more non-verbal kind of memories for skills."

Research being conducted by scientists in Italy measuring gymnastics skills demonstrates similar findings, she said.

Flegal and Anderson believe the performance loss is related to an effect called verbal overshadowing, where trying to describe a difficult-to-verbalize experience (such as the appearance of a face, or the taste of a wine, and perhaps the performance of a well-learned skill) distracts the brain by putting the focus on language and thus interfering with access to non-verbal aspects of a memory.

Verbal overshadowing has previously been found to affect memories for how things look or taste. Past research found witnesses had a harder time accurately recognizing a face after being asked to describe it from memory. But this new research extends the phenomenon to motor skills, including sports.

Flegal said the overshadowing effect doesn't appear to adversely affect novice golfers who have not yet developed sufficient skills to forget, and it probably wouldn't impact the most expert golfers like Tiger Woods, but would definitely hinder those in the mid-range of ability.

Procedural memory controls motor skills and describing what you have done seems to disrupt procedural memories, she said, advising golfers to avoid talking about and over-analyzing their swing in between putts. This may be especially hard for golf instructors, however, who need to talk about what they do all the time, flipping an old adage on its head: Those who teach, can't do.

Provided by University of Michigan

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