

Overconfident, incompetent and unaware: An engineering challenge

Results of research on how aware people are of their strengths and weaknesses may surprise you. The fact is, it's hard to evaluate our own performance accurately and objectively.

by Norman R. Ball, PhD

“She thinks she's really funny. Nobody else thinks so, but we don't want to hurt her feelings.” “He's a great communicator. Just ask him. Of course, we don't understand a word he says, he never listens to anyone else and his memos—well, don't get me started.”

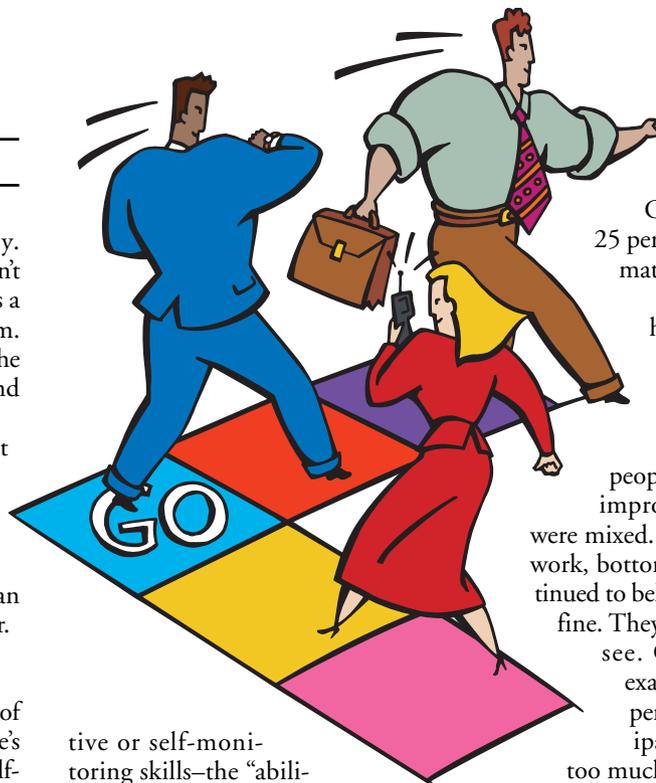
Sounds familiar, doesn't it? Recent research by two Cornell University psychologists, Justin Kruger, PhD, and David Dunning, PhD, suggests that many people have trouble assessing their own strengths and weaknesses. You can build on this insight to help your career.

Unskilled and unaware

In the article “Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments” Kruger and Dunning recognize that, in many cases, our limitations are obvious, and we get the picture on our own. They write: “We doubt many of our readers would dare...enter into a friendly wager on the golf course with Tiger Woods.”¹ But when we don't recognize our own weaknesses, we stand to do untold damage to our careers and our egos.

Keep in mind that in the context of this research, the words “incompetent” or “unskilled” mean low-ranking, not completely incapable. Mark Twain, who saw the problem a long time ago, said: “We are all incompetent, just in different subjects.”

During the late 1990s, Kruger and Dunning tested people for metacogni-



tive or self-monitoring skills—the “ability to know how well one is performing, when one is likely to be accurate in judgement, and when one is likely to be in error.”² The research was carried out in four separate studies at Cornell University in the Department of Psychology. A total of 334 undergraduates from various departments participated.

Kruger and Dunning asked participants to rank themselves and found that those scoring in the bottom quartile (25 per cent) on tests of humour, grammar and logic grossly overestimated their test performance and ability. How far off were they? Way, way off. “Although test scores put them in the 12th percentile, they esti-

mated themselves to be in the 62nd.”³

Conversely, those in the top 25 per cent consistently underestimated their skills.

The researchers wanted to help people do a better job of judging, or calibrating, their own skills and achievements. They wondered if looking at work done by people at other skill levels would improve calibration. The results were mixed. Even after looking at better work, bottom-quartile participants continued to believe they had performed just fine. They had eyes, but they couldn't see. On the other hand, after examining the work of poorer performers, top-quartile participants saw they had assumed too much competence on the part of others—the “false-consensus effect”—and, as a result, revised their opinion of their own skills to a higher, more realistic self-assessment.

Kruger and Dunning concluded that the low-ranking, or “incompetent individuals lack the metacognitive [or self-monitoring] skills that enable them to tell how poorly they are performing and, as a result, they come to hold inflated views of their performance and ability.”⁴ But that still didn't help the poor performers escape the self-assessment trap.

Then Kruger and Dunning tried *manipulating* people's competence, by improving people's skills in the areas they couldn't self-assess accurately. The

researchers predicted, and confirmed, that “the incompetent can gain insight about their shortcomings, but this comes (paradoxically) by making them more competent, thus providing the metacognitive [self-assessment] skills to be able to realize that they have performed poorly.”⁵ To get better at self-assessing a skill you must improve the skill. It’s a Catch-22 situation. Or is it?

How can we apply these research findings to professional practice? In a recent interview, Justin Kruger told me that the most important practical implication is realizing that “confidence in your own abilities in various areas might come from genuine skill or your own failure to recognize lack of skill. You need to find out which [one applies to you], and for this you need converging evidence from other sources” besides your own self-assessment. But don’t others tell us about ourselves?

Barriers to accurate feedback

We get feedback from friends and colleagues, we get performance assessments at work. But Kruger counters that “there is good evidence that people aren’t interested in accurate feedback; they prefer the favourable” and “are good at discounting negative feedback.” Performance assessments are often aimed more at “maintaining harmonious relationships and keeping people motivated,” than helping us see ourselves more clearly. Today we hear a lot of talk about management as coaching, but Kruger says that in “communications between coaches and athletes, the goal is peak performance, not honesty.”

Too much awareness of our personal shortcoming could make us depressed, or cause too much strife in the workplace. Neither situation enhances productivity. Therefore, from a team or corporate point of view, an accurate assessment could be counterproductive. However, from a personal point of view, an accurate assessment of your skills could be the key to the awareness and self-improvement you need to move ahead in your career.

It’s almost as if we were programmed not to learn from experience. British chemical engineer Trevor Kletz found this repeatedly in his work on safety in chemical plants. Kletz says that companies don’t have memories or an effective way of passing on knowledge gained by hard experience. When companies don’t use what they learn about workplace safety from

accident investigations, that knowledge is soon lost; it lives only in reports that no one reads.⁶

We don’t learn from experience nearly as much as we think we do. As David Dunning explained in a recent interview: “Experience in and of itself is not necessarily a good teacher. It is inefficient.” But there are ways to enhance the benefits of experience.

Getting more from experience

High education standards for membership in professional licensing bodies such as PEO reassure the public that people who enter the profession meet a certain minimum standard. But—except for the rare cases in which professional incompetence results in disciplinary hearings—continuing competence and ongoing professional education are still very much a decide-for-yourself matter. In some associations, you get to decide if you’re going to engage in professional development at all; in others, you must do some professional development work, but you get to decide how and when. What does a psychologist who is an expert in self-assessment and learning think about this approach to continuing education?

Dunning notes that “to let people recognize their own deficiencies and then go out and take courses on their own won’t work well, because they won’t be good at knowing their own weaknesses and strengths.” He draws an inescapable conclusion: “The organization you work for, or that licenses your profession, should specify the set of skills you need to be up on. You must take courses in essential skill areas.”

All engineers know there is a gap between theory and practice. However, the trend toward narrowing the gap has started and, in the next decade, we will undoubtedly see many self-regulating professions take a more active, rigorous role in spelling out and enforcing requirements for continuing competence and lifelong professional learning. But you can get a head-start on your colleagues. You can start right now.

Separating the technical from the non-technical

Many professional engineers face a dilemma. It takes years of hard work, largely in technical subjects, to earn the basic educational qualifications. But after you’ve

been on the job a few years, you are usually promoted because of your non-technical skills. This is also true of other professions. As Dunning says: “You can’t overestimate the importance of these [soft skills]. MBA grads keep saying to me, ‘I wish I’d paid more attention to them at school.’” I hear the same thing from engineering grads.

So the first step toward applying the findings of Kruger and Dunning is to distinguish between your technical and non-technical skills and approach them appropriately. It is usually harder to judge your non-technical skills, but statistically speaking, they are more likely to be the weaker part of your skills profile. And because they are subtler, and harder to test, Dunning suggests that you need to pay formal attention to developing these skills, by taking courses, finding a mentor, or asking for guidance. He stresses that good continuing professional education goes beyond correcting known deficiencies. It should “expose you to standards of skills you didn’t know existed, or let you see how you could help or intervene in ways you didn’t see before,” he says. Good continuing education should surprise you.

Getting started

You might start by showing this article to your employer, a colleague, a friend or your spouse. Ask them to tell you honestly which skills you need to develop. See what they say when they know you’re serious about improving your skills and when you give them time to think.

Or you might start with the findings from research literature on the characteristics commonly associated with various professions and educational backgrounds.⁷ That literature will tell you that, on average, engineers are likely to be strong at mathematical reasoning, but poor at communications (writing, reading and listening); slow to pick up on social cues or non-verbal communications; and likely to prefer an authoritarian style of decision making.

Finding courses that meet your needs

Let’s say you’ve decided to take a writing course. How do you pick one? You could take one of those \$99.95 one-day, one-size-fits-all writing courses that covers about 30 or 40 common writing errors. These generic prepackaged courses assume you need a standard body of knowledge and present it. They also leave the hard

part to you: You have to figure out what you need to change in your writing and how to do it. And the people who need help the most can't do it. That's the whole point of Kruger and Dunning's research.

There is another way. I've learned a lot from a professional writer, editor and corporate trainer who delivers custom-made courses limited to no more than 15 or 20 people per class. Several weeks before the course, everyone who is registered must submit a 20-page sample of his or her workplace writing, including correspondence and reports. The trainer reads everything carefully to find out what the particular group needs. Based on this assessment, she prepares a custom-made course that focuses on the weaknesses of the participants. On the day of the course, you have a chance to improve the samples you submitted. This is real-life teaching; it's based on what you do. You start to apply what you've learned *before* you get back to the office.

You can adapt the same individualized approach to all learning experiences. Dunning suggests you read or take courses actively and imaginatively. I call it being

intellectually aggressive. Ask yourself: "How could this work in my situation, with my colleagues? What can I take from this that will be immediately helpful?" This is what turns ordinary experience into a learning experience.

Let's keep the dialogue going

What's your story? Research has shown us that, one way or another, we all have blind spots. We all suffer from undetected continuing incompetence. As Kruger says: It is "self-sustaining: people perform poorly, don't know it, and therefore won't invest in self-improvement." Somehow we have to break the cycle. How do we do it? What works best for you? Let's hear about it. Let's talk about it. u

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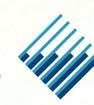


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