Teaching Students Specific Skills

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Preparing for a keynote at a polytechnic institute got me thinking about those readers who teach students how to *do* something, not something abstract like thinking, but how to execute some observable skill, such as starting an IV, writing code, or wiring a circuit. Teaching skills, much like teaching in general, shares certain similarities that are relevant across a variety of degree programs. It's good to review these and use them to take stock of how we can better help students learn specific skills.

A novice learns from an expert – Often, the novice is tremendously impressed by the skill of the expert who accomplishes a complicated task easily and efficiently. It looks effortless, and seeing flawless execution can be very motivational. The novice aspires to do what the expert has accomplished. And because it is done so well, it's easy for the novice to conclude that learning it won't be all that difficult.

An expert teaches a novice – Skill instruction relies on demonstrations. And let's be honest: there's a bit of showmanship involved and some enjoyment derived when students are impressed by what we can do. To the expert, it feels easy, natural. He or she knows exactly what to do and when to do it. What the expert may have forgotten is how it felt when he or she was learning the skill—the clumsiness, the awkward execution, the tension, and the fear of failure. Once a skill is mastered, the time, effort, and repeated attempts fade from memory. "It's easy! You can do it," the expert reassures the novice.

Learning most skills isn't easy – It's not as easy as the expert makes it look, and it's not as easy as the learner thinks it might be. And if the expert claims that it's easy and the novice's first attempts are failures or faulty executions, then the novice starts to wonder. "Why can't I do this? It looks easy, and the expert says it's easy, but now I can't do it. What does that say about me? Am I stupid?"

Mistakes are an inherent part of learning new skills – Making mistakes does not automatically equate with a lack of ability, but students continue to believe that ability matters more than effort. If the skill isn't easily acquired, they begin to rationalize that they probably can't learn it so why keep trying. Mistakes are how we learn, but our egos seem to take a bigger hit when we fail to learn a specific, demonstrable skill. There's no way to fudge—the novice, the expert, and everyone else see the mistakes. Novices need to understand that learning from error is more powerful and enduring than executing something flawlessly on the first attempt. The good news is that corrected failures are also more visible and, therefore, easier to celebrate. Get that needle in the vein, develop a web page, or watch that circuit light up and we see the success instantly.

Skill performance depends on practice – It looks easy because it's been done a thousand times. Learning to do anything well requires hard work for the vast majority of learners. Look at high-performing athletes, musicians, or artists. Their lives center around practice, and even when they are excellent, the practice continues. What we've learned about "deliberate practice" documents that working on the less effective aspects of skill performance is what most improves performance. Novices typically underestimate the time and commitment excellent execution requires. Experts can help them correct those assumptions.

A good relationship with the expert makes learning skills easier – The awe and healthy respect novices feel for experts must be part of the relationship. There may even be hints of fear, but they're balanced by the recognition that the expert wants the novice to master the skill and is there to help. Experts care about the novices and the skills. They have high expectations for both.

Skills develop better with honest feedback – Expert feedback must address what isn't being executed well. The focus should be on the skill, not the person. "Here's the problem, and here's what needs to happen to fix the problem." Expert feedback supports and encourages. "Keep trying." "Be patient." "Practice will improve your performance." And when the skill starts looking better, there's acknowledgment of progress. When it's executed well, there's praise, but nothing over the top. Mastering skills means there are always things that can be done better.