

# Dissecting Motivation: The Will-Skill-Thrill Profile

By Phyllis Baudoin Griffard

During the interview seminar for my current position, an eminent biologist and respected administrator posed a question to me that I took as a clue about the departmental mindset. “What if we could just do a really, really good job teaching physics and chemistry; wouldn’t this improve student success in biology?”

I’m still surprised at my answer, which seemed to come streaming forth from my inner ecologist (my background is actually biochemistry). But I stand by it, and am now really glad I said it: “That just begs the question of who is beholden to whom.”

By that I meant that although there is undoubtedly a physical and chemical basis to life and Earth science, each has emergent properties that are peculiar to it that cannot be predicted knowing only the chemistry and physics of the processes. Of course the best explanations of nature acknowledge them all, and no explanation of the natural world can violate any of them. The sciences are beholden to each other. There is no linear chain of command of prerequisites, but rather a circle of interdependence. Thus it is not necessary to have full command of one before being able to participate in another. In an ideal world, the disciplines of science, whether in academic research or in the learner, develop lockstep in a recursive process.

This essay is not about reductionist views of science. It is about reductionist views of intrinsic motivation that may be impeding our effectiveness as

science educators. In the same interview visit, questions about motivation came up enough to indicate a serious concern on the part of my predecessor and future colleagues, as though insufficient *will* were the sole culprit for student underachievement. It is my opinion that intrinsic motivation has many dimensions, with *will* being just one of them. So I responded that few things are more motivating than success or “getting it” and suggested that there is a *thrill* component that, along with *will* and *skill*, induces motivation. If you could get into a student’s head and dissect the networks that contribute to her unique motivation quotient, sheer determination would be only one subscore.

The more stoic scientists among us acknowledge the *will* and *skill* components more readily than *thrill*. However, educators who see inspiration as an important part of their jobs realize that *thrill* can serve as a placeholder as *will* and *skill* catch up. *Thrill* can even be a useful monitor of when that is happening. It has come as a surprise to many freshmen that they each have an internal meter that tells them with a cocktail of endogenous pharmaceuticals that they’ve had a meaningful insight. Every time these students work to understand or naturally see something that makes sense, they get a “eureka rush” that is the visceral, perhaps adaptive payoff for the investment of cognitive effort made possible by *will* and/or *skill*. But unlike street drugs, there is no shortcut to this rush. There is no faking it.

You only get it when you really “get it.” It’s even contagious; we educators get a thrill from witnessing it in “teaching moments.”

As with many multifactorial traits, one’s motivation quotient can be thought of as a profile composed of W, S, and T subscores. It is the rare student who comes to us with high subscores for all three. Although go-getters seem to have a large natural or nurtured endowment of brute force *will*, we’ve all known some of these go-getters who, in spite of their best efforts, are short of the raw intellect of the *skill* component. Likewise, we’ve all taught unpolished gems who lack drive and instead cruise on their generous allotment of processing power. But without sufficient *will*, these diamonds-in-the-rough might never shine. As with *will* and *skill*, the sensitivity of an individual’s *thrill* meter contributes another subscore to his or her motivation quotient. A given student’s T-meter might be calibrated to respond with a hair-trigger to simple wonders, while others with the sluggish version only get the buzz after a more difficult but grander insight. Regardless of how tightly calibrated one’s T-meter is, awareness of it and the visceral reward it metes out is enough to amplify its effect. Once a student is aware of the visceral reward of meaningful understanding, she is likely to rely on *thrill* as an internal check that her *skill* and *will* have been adequate to the task. The three serve each other.

If explicit attention is paid to motivation during instruction, develop-

ment of W, S, and T can be mutually reinforcing. As with the sciences, they are not in a linear chain of command in which one is a prerequisite for the others. Without recognizing these components and our students' unique WST profiles, we may be oversimplifying underachievement and blaming the student for a weak will.

Our job as educators is to cultivate learning environments that accommodate learners with diverse motivation profiles. Our cheering and encouragement help those with a low W. Scaffolded pedagogical tools help develop strategies for those with a weaker S but strong W. And a breadth of topics for the syllabus or stimulating readings should tickle the T of diverse intellects. Offering a variety of rich

examples increases the likelihood that each student's *thrill* button will get pushed regularly enough to fortify *will* and *skill*.

Teaching is not talking. Teaching is creating an environment where learning happens. *Effective* teaching is creating an environment where maximum learning happens for every student. This requires acknowledging the complexities of intrinsic motivation and our students' unique WST profiles. *Skill* and *thrill* are not always beholden to *will*. They respond to and interact with each other. We will be most effective when we design our courses to acknowledge and develop these components in tandem rather than expecting *will* alone to be sufficient.

*Note:* A case could be made that a master component of motivation is "chill," or the ability to regulate the anxiety manifestation of *will*, the arrogant tendencies of *skill* and the manic aspect of *thrill*.

I acknowledge Dr. Brian Coppola's attention to *thrill* as a component of motivation in education reform.

### Reference

Coppola, B. 1998. The -ills of educational reform. *The Chemical Educator* 3 (1): 1-10.

---

**Phyllis Baudoin Griffard** (pbg2002@qatar-med.cornell.edu) is a senior lecturer in the Premedical Education Program at Weill Cornell Medical College in Qatar.

---

# Need Funding?



The Vernier/NSTA Technology Awards acknowledge the creative use of data-collection technology using a computer, graphing calculator, or other handheld in the science classroom. The judges are looking for an innovative idea you have implemented or plan to implement in your classroom.

### Awards:

A total of seven \$3,000 awards will be presented:

- ◆ One award at the elementary level (grades K-5)
- ◆ Two awards at the middle level (grades 6-8)
- ◆ Three awards at the high school level (grades 9-12)
- ◆ One award at the college level

### Recognition:

The award-winning teachers will receive an expense-paid trip to the NSTA National Convention (expenses not to exceed \$1,000), a check for \$1,000, and \$1,000 in Vernier products.

The Vernier Technology Award guidelines and application form for 2011 are available at [www.vernier.com/grants/nsta.html](http://www.vernier.com/grants/nsta.html)

Vernier Software & Technology • toll free 888.837.6437 • [info@vernier.com](mailto:info@vernier.com) • [www.vernier.com](http://www.vernier.com)



**NSTA**

**Application deadline** extended for receipt by NSTA for 2009 awards to **Nov. 30, 2010**

Copyright of Journal of College Science Teaching is the property of National Science Teachers Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.