

Is There a Formula to Help Understand and Improve Student Motivation?

Kenneth E. Barron
James Madison University
Chris S. Hulleman
University of Wisconsin-Madison

(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column on the *PsychTeacher™ Electronic Discussion List* in August 2006.)

“Hey Prof, i didnt come 2 class last week. did i miss anything imp? any of it gonna b on the test? also, is lab runnin the whole time 2day, or we gettin out early?”

Email and other forms of electronic media have given us new ways to gain insight into the motivation of our students. Unfortunately, the additional “insight” that we may obtain can be discouraging. For example, perhaps you have been the recipient of an email like the one above, or maybe you have had colleagues share similar emails from their students. Or perhaps you have logged onto Web sites like www.ratemyprofessor.com and www.facebook.com. When perusing these sites, we are particularly struck by the number of students who recommend courses because attendance and doing the readings are not mandatory, the professor frequently cancels class or ends class early, or the course is easy (or at least easy enough to get a passing grade). For example:

“Definitely take this class. I never went to class or bought the book, and I got a B.”

“The easiest teacher! Always lets class out early and cancels class on Fridays a lot. TAKE HIM!”

“Easy class . . . all you have to do is print out PowerPoints and memorize them completely to get a good grade on tests . . . lectures are pretty boring he just reads off the slides but it’s tolerable overall”

As a result, many of us may question the motivation of our students and wonder if student motivation has declined in recent years. Indeed, longitudinal studies of academic motivation suggest that students become less interested in learning as they progress through school (Harter, 1981; Lepper, Corpus, & Iyengar, 2005). This decline in motivation raises an important question: Whose responsibility is it to motivate students? Is it the job of students to motivate themselves, or do instructors have some responsibility as well? Wlodkowski (1985) offered a strong position on the matter:

“I am convinced that one of the logical reasons why ineffective and unmotivated learning so frequently occurs is because of the lack of motivation planning on the part of many instructors . . . I contend that for an adult to learn and want to learn (motivated learning), motivation planning is necessary . . . Blaming the learners for being unresponsive to instruction that is actually poorly

designed or implemented in terms of its motivational influence is a common reaction among many instructors” (pp. 58-59).

Indeed, an appreciation of motivation theory, as well as an understanding of how to structure your class and assignments based on motivation theory, may go a long way toward eliminating (or at least limiting) student apathy. As psychologists, we would hope that knowledge of different psychological theories could be used to help improve classroom instruction. However, because of its complexity, motivation theory can be daunting—especially to those unfamiliar with its nuances. This point was nicely brought to light at a recent professional meeting on motivational research, entitled “What Should Pre-Service Teachers Know about Recent Theory and Research in Motivation?” After several scholars reviewed the dominant motivational theories, along with principles they hoped would be taught to aspiring teachers, the next speaker, author of a popular educational textbook, quickly captured everyone’s attention with her opening statement: “I’ve got to tell you, I hate writing the motivation chapter of my educational textbook. You’ve got 48 +/- 8 theories of motivation, and I don’t know what should be stressed and what shouldn’t to aspiring teachers.”

Although this statement somewhat exaggerates the multiplicity of motivation theories, the main point is certainly true. Numerous motivation theories have been proposed, and it can be difficult to sort through and make sense of the various constructs. The purpose of this essay is to simplify the complexity found in motivational research and to pose the following challenge: How does your teaching promote optimal motivation in your students?

Simplifying Motivational Theory

In general, motivation can be defined as what moves us into action. Despite the appearance of numerous motivational theories, an expectancy-value framework provides a parsimonious way of synthesizing a number of important conclusions from motivational research. This framework can be represented with a simple formula: $\text{motivation} = \text{expectancy} \times \text{value}$.

In other words, motivation is the product of two components. The first component, *expectancy*, represents the degree to which individuals believe they can complete a given task. The second component, *value*, represents the degree to which individuals are interested in, or at least see some purpose for, engaging in a task.

Although this formula is clearly linked to expectancy-value theories of motivation (e.g., Wigfield & Eccles, 2000), other major motivation theories can be viewed as contributing to the expectancy component (e.g., efficacy theory, locus of control theory) or the value component (e.g., goal theory, interest theories). Additionally, this formula implies that motivation is the product (rather than the sum) of these two components. Therefore, both components are necessary or overall motivation will be impaired. For example, even if students believe they can succeed at a task, they may remain unmotivated if they see little value or have little interest in engaging in the activity. Conversely, even if students see value in the activity, they may remain unmotivated if they believe they will be unsuccessful at the task.

Thus, knowledge of this motivational formula can be used to optimize student motivation by structuring our courses to allow students to achieve objectives with reasonable effort (i.e., promote an expectation that certain outcomes are achievable), while also trying to ensure that students see importance in what they are learning (i.e., promote a sense of value and interest in the material).

Promoting a sense of expectancy, however, doesn't come from simply offering an easy class. Instead, "authentic" expectancy means structuring classroom activities that are achievable but challenging (neither too easy nor too difficult), so students are able to progress and experience feelings of competence. In fact, motivation research has demonstrated that expectancy and value can be related, such that when students feel competent at an activity, they are more likely to value and enjoy doing it. Thus, the old adage "we like what we're good at" can be used in the classroom to maximize both expectancy and value, thus increasing motivation.

Promoting a sense of value means helping students find reason to engage in learning, ideally one that promotes intrinsic motivation. For example, motivation theorists have differentiated interest that is more trait-like (known as individual interest) from interest that is more state-like (known as situational interest). Although there is little we can do about students' individual interests before they enter our classrooms, we can shape students' situational interests once they arrive in our classrooms.

Situational interest contains two factors: catch and hold (Hidi & Harackiewicz, 2000). Catch factors grab students' attention and get them initially interested in learning. Examples of instructional practices that may catch students' interests include demonstrations, storytelling, video clips, or posing thought-provoking questions. Once students are "caught," hold factors maintain students' attention, because students find meaning and personal significance in the material. Examples of instructional practices that may hold students' interest include the use of real-world examples and getting students to relate material to their own lives, so they can apply and see value in what they are learning. If situational interest is sufficiently held and sustained over time, it can evolve into a more enduring, individual interest in that topic. Thus, as educators, we should take pause to consider how our instructional practices develop our students' interests.

Providing another model of how interest and motivation can vary and develop over time, Ryan and Deci (2000) proposed a motivational continuum. Anchoring one end of the continuum is *amotivation*, when students lack interest and motivation altogether and fail to see any value for engaging in an activity. Anchoring the other end of the continuum is *intrinsic motivation*, when students derive inherent enjoyment and pleasure from engaging in an activity and value the activity for its own sake. Falling between these anchors is *extrinsic motivation*, when interest is lacking but students are motivated to engage in the activity for some external reason.

Ryan and Deci (2000) suggested that an individual's motivation can shift up and down this motivational continuum based upon how well the situation meets a number of key human needs. According to their theory of self-determination, being able to make choices in a situation (autonomy), feeling capable of accomplishing key tasks (competence), and being able to interact with other people (relatedness) are the cornerstones to promoting intrinsic motivation in the classroom. Although extrinsic motivation via incentives (e.g., money, gold stars) can affect effort

and quantity of motivation, high quality engagement in the classroom is promoted by enabling students to become intrinsically motivated. Students who are intrinsically motivated are more creative, process the material at a deeper level, persist longer on activities, and are more interested in their schoolwork than students who are extrinsically motivated.

In sum, expectancy and value both help determine the quantity, as well as the quality, of motivation. By helping students create authentic expectancies and value the material, teachers can maximize students' motivation. In addition, by helping students meet their core needs of autonomy, competence, and relatedness, teachers can push motivation toward the intrinsic end of the continuum.

Applying Motivational Theory to Teaching

Now that we have offered a simple formula for understanding motivation and presented some of the key findings from motivation research, we would like you to consider your own teaching and how it promotes different motivational components. Overall, teachers spend most of their preparation time focusing on the subject matter they want students to learn (Brophy, 2004); what teachers tend to ignore are students' subjective experiences (their affect, motivation, and attitudes toward learning).

Below we provide a checklist of questions that can help you as you engage in "motivation planning." First, choose a particular topic or lecture that you teach, and consider how your approach promotes student motivation.

In general:

1. How are you promoting students' expectancies to succeed with the material?
2. How are you promoting students' value for the material?

And more specifically:

3. What things are you doing to "catch" student' interests?
4. What things are you doing to "hold" students' interests over time?
5. How are you promoting students' need for competence? And will you give all students an opportunity to be challenged and feel a sense of developing their competencies?
6. How are you promoting students' need for autonomy and chance to shape their educational experiences?
7. How are you promoting students' need for relatedness? Will you attempt to develop connections between you and your students, or among other students in the class?

For example, as part of the second author's dissertation, in which he attempted to promote value and hold for learning, undergraduate students in a psychology course were asked to relate the material to their lives by writing brief essays. This simple activity promoted more interest in psychology at the end of the semester and indirectly improved course grades.

Once you have run through the checklist for one topic or lecture, do the same exercise again but apply the questions to each of your lectures or activities. This will help you realize how you promote different motivational components over the course of the semester. Recognizing the role that teachers play in creating an optimal learning environment can go a long way in preventing the kind of email and student comments that we presented at the beginning of this article.

In conclusion, we hope that our essay helps you better understand your students' motivations. If you would like more extensive coverage on how to apply different motivational theories to improve your classroom teaching, we encourage you to peruse our References and Suggested Readings.

References and Suggested Readings

- Brophy, J. (2004). *Motivating students to learn* (2nd ed.). Mahwah, NJ: Erlbaum.
- Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology, 17*, 300-312.
- Hidi, S., & Harackiewicz, J. M. (2000). Motivating the academically unmotivated: A critical issue for the 21st century. *Review of Educational Research, 70*, 151-179.
- Lepper, M. R., Corpus J. H., & Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology, 97*, 184-196.
- Pintrich, P. R., & Schunk, D. (2002). *Motivation in education: Theory, research and applications* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.
- Stipek, D. (2002). *Motivation to learn: Integrating theory and practice* (4th ed.). Boston: Allyn and Bacon.
- Wigfield, A., & Eccles, J. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*, 68-81.
- Wlodkowski, R. J. (1985). *Enhancing adult motivation to learn*. San Francisco: Jossey-Bass.