

Teaching Tips/Notes



Motivating Students – Factors to Consider

Introduction

Learning is like most other tasks in that motivation is required to do your best. Of course, learning can, and does, take place in many ways: from the absence of an instructor/teacher to a structured learning environment with teacher-pupil interactions and relationships. Motivation is a key aspect affecting performance, in all cases. Other aspects are also important, including organization of material, clarity, practice and activities (homework or laboratory exercises), reading, and innate ability. Most instructors plan courses or curricula focusing on content and delivery, without considering student motivation. Instructors must now consider motivational to excel in learning as well as subject matter (Chapman, 2000). Svinicki (2005, p. 1) reiterated the importance of motivation:

“Of the factors that influence student learning, motivation is surely one of the most potent. Teachers can affect student motivation in ways that either facilitate or impede learning.”

Brief Review of Theory

Motivation falls into two basic categories: extrinsic and intrinsic. Extrinsic motivation comes from a person's environment. Young children are motivated primarily by parental encouragement but as they grow motivators expand to include the anticipation rewards including praise, grades, money, gifts, or similar incentives. Generally, by the age of 15-17 students begin to think about the future; then their vocational goals, career exploration and preparation become motivators (Karns and Myers-Walls, 1996). These youth begin to set goals based on feeling of personal needs and priorities but are still primarily motivated by external incentives.

Intrinsic motivation, on the other hand, comes from internal sources. Intrinsically motivated students want to learn because they are curious, seek knowledge, are interested in self-improvement, and learning gives them satisfaction. Intrinsically motivated people are more likely to develop the habit of life-long learning than extrinsically motivated people (McKeachie, 1999).

The type and level of student motivation depends upon the task, skill, or subject matter being learned. People often have special interests or hobbies about which they are intrinsically motivated to learn all they can. On the other hand, there are some tasks and skills that few of us would ever be intrinsically motivated to complete (e.g., washing dishes, mowing the lawn). Intrinsically motivated learners enjoy learning and generally have better outcomes. So, the challenge in the classroom is to help students move from fully extrinsic motivations along the continuum to becoming more intrinsically motivated.

Deci et al. (1991) describe the self-determination theory which identifies six distinct levels of motivation. The progression from amotivation (not being motivated) towards intrinsic motivation is called *internalization*. The levels of motivation can be considered by choices/decisions we see our students make. Deci et al. present a compelling discussion of factors affecting internalization. Self-determination theory focuses on three needs: competence, relatedness, and autonomy (self-determination). These researchers proposed that to move towards intrinsic motivation requires external (instructor, parents, etc.) support in these dimensions of competence, relatedness, and autonomy. . Extrinsic motivations are important and can be effective, but they may not lead towards the goals we set for our students. Internalization takes more effort as it requires a move towards autonomy that the student must make. It cannot be done for them. Deci, et. al. pointed out that self-determined forms of motivation are critical because intrinsically motivated students are more likely to stay in school, achieve conceptual understanding, and be well adjusted.

Motivation is not the only measure of student success, of course. A motivated student without the appropriate cognitive skills will not perform well -- nor will a skilled student who is not motivated. Students need to acquire factual knowledge and basic skills as well as critical thinking skills which will enable them to evaluate new ideas and concepts (Pintrich, 1989). Higher-order learning includes problem solving,

critical thinking, synthesis and evaluation, and oral and written expression (Donald, 1999). This requires higher-order skills, which generally requires some intrinsic motivation for the student to excel.

Most motivational models of student achievement do not incorporate cognitive skills or strategies in their models. Almost all motivational models assume that students who have a “positive” motivational orientation (e.g., high efficacy, high task value, adoption of a learning goal, low anxiety, etc.) will try harder and persist longer at a task with a concomitant increase in performance (Pintrich, 1989). Pintrich studied the interactive relationships between students’ motivation and cognition in the college classroom. He found that students can be skilled in cognitive and self-regulating strategies, but motivational beliefs can influence how these strategies are used for different tasks and that different types of students may benefit from different types of interventions to improve students’ active learning and critical thinking. For example, students who are motivated but do not seem to have the cognitive and metacognitive skills might benefit most from self-efficacy or attribution retraining programs; however, students who have the self-regulation skills and confidence but lack the interest or value, might benefit most from interventions that attempt to change the nature of classroom tasks to increase the interest and value of the assignments.

Motivation, therefore, while not the only factor in student learning, plays a major role in determining what students will take from a class. A student’s level of motivation can be visualized on a continuum from amotivated to intrinsically motivated. One of our roles as teachers is to help students move along this continuum.

Some Motivation Practical Matters

“It is important to remember that there is a limit to just how much we can actually motivate students. But it is also important not to stop trying because you may find that, just as you become tired and frustrated, whatever pressures have been pulling the student down will eventually ease. And when this happens, they will appreciate the efforts you have made.” (Anon, 2004, p. 4)

Students cannot be classified with regard to motivation without context of subject matter. A particular student may be very intrinsically motivated on one topic, but externally or even amotivated regarding another. Motivation involves the intersection of pupil, topic, and instructor. Simply getting instructors and students to recognize this will likely help improve motivation and learning.

Student motivation is a function of several variables (Davis, 1999; Sass, 1989); these might be considered the **elite eight**:

- Instructor’s enthusiasm
- Relevance of the material
- Organization of the course
- Appropriate difficulty of the material
- Active involvement of student
- Variety
- Rapport between teacher and student
- Use of appropriate examples which are understandable and concrete

In plant and animal nutrition, the concept of a most limiting nutrient often surfaces. In some situations, even if all else is optimal (or at least non-limiting), a deficiency of a critical element controls potential. This principle, known as *Leibig’s Law of the Minimum*, is illustrated in Figure 1. With regard to learning and motivation, a similar analogy may apply. A student may have all the necessary requirements to do well in a class (prerequisites, natural abilities, etc.), but fail due to a lack of motivation. Note, however, that the simple law of the minimum does not allow for interactions or compensation factors. For example, it might be true, for some learners in some situations, that relevance of the material (to them) is so high that they are able to compensate for another factor (such as organization of the course) being low.

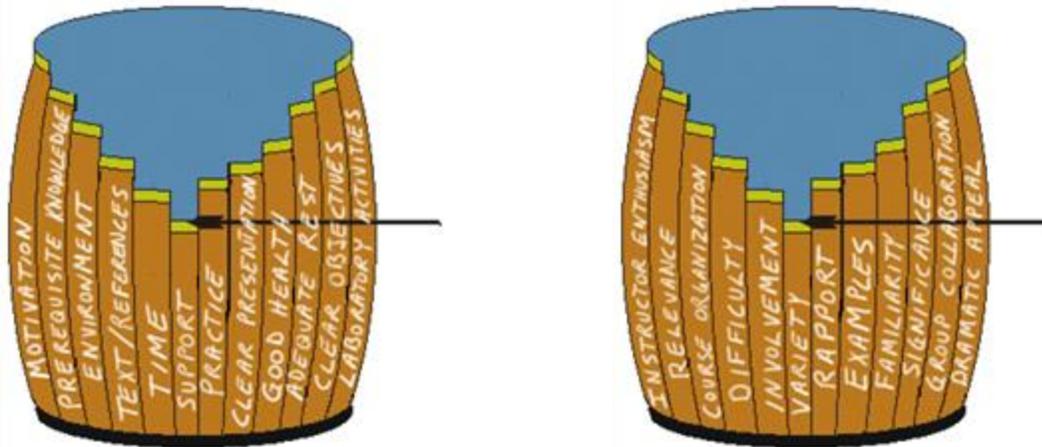


Figure 1. Leibig's law of the minimum applied to (a) learning factors and (b) motivation factors.

Chapman (2000) identified several motivation aspects of well-design problems which were similar, yet a bit different than those presented by Davis (1999). These were:

- Familiarity- - some is needed
- Relevance - to current or anticipated future needs
- Dramatic appeal - use real or fictional characters to develop stories
- Significance - making a difference in the world
- Authenticity - actual problems from business and industry are better than hypothetical ones
- Group collaboration - this often helps build enthusiasm

Specific to “significance,” assignments which will be used beyond the classroom are particularly motivating. For example, a class taught on Environmental Systems Management combined a wide range of topics. By incorporating a case study approach students were able to see connections between topics and with potential use in their own farming practices. Students reported an increase in effort they put forward and a significant increase in the course rating (from 1.9 to 3.4 on a 5-point scale; Carroll, 2007). Knowledge that information collected or solutions generated will be used by someone other than the teacher can also be a powerful motivational force. Collaboration as a motivational strategy is reinforced by Panitz (1999) who found cooperative learning to enhance students’ self-esteem which in turn motivates students to participate in the learning process. Collaboration can be through lab activities, team projects, and presentations.

However, there are assignments that can have negative consequences for students. Chapman (2000) identified several of these factors which detract from student motivation; these were:

- Overly complex problems - which can be overwhelming
- Overly determined problems – because students don’t develop problem solving or collaborative skills
- Formal group reports - writing just does not lend itself to group performance

Chapman (2000) suggested that instructors should include assessment tools that seek student feedback on the motivational level of the problems being used. While students may not be in a position (or have adequate context) to judge course goals, learning objectives, and/or materials, they are precisely the ideal group to assess whether a problem, course, or instructor generated interest in the subject matter.

Summary

Motivation is a key aspect of the whole educational process. As an important part of student achievement, some level of motivation is required as a commitment to learning. There are varying levels of motivational “maturity” including amotivated, extrinsic, and intrinsic. Extrinsic motivation can involve

several levels of regulation. Getting students involved in the pedagogical aspects by getting them to think about their own motivation can help. Instructors can influence student motivation through their enthusiasm, course organization, inclusion of a variety of relevant examples, involving students, and keeping an appropriate level of difficulty. At times, instructors may not be able to influence student motivation; however, when it can be influenced, the payoff can be tremendous.

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