

# Student Motivation and Learning

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Literature Review

**Abstract:** Everything students do is underlined by some sort of motivation. This includes students and their motivation to learn. Motivation is essential to learning since it is the driving force for students' to complete tasks that build knowledge. There are many factors that play can potentially influence motivation, which makes research on this topic as it relates to learning diverse and abundant. However, motivational considerations can be summed up as being either task or ego-oriented. The purpose of this paper is to review research conducted on student motivation as it applies to learning, and in the process, identify teaching techniques that support motivating students to learn.

## Teaching Techniques that Motivate

Motivation is the determining factor in learning, since students who do not want to learn will not learn regardless of the caliber of the instructor, and students who do want to learn will. However, students' motivations may change, such that even those who do not want to learn will change their minds upon exposure to stimulating environments that capture their attention. To keep students engaged, students need to maintain a task-oriented outlook on learning, which is associated with deep-level learning and learning for the sole gratification of acquiring knowledge. In comparison, those who are surface learners, gravitate towards ego-oriented learning, and rely on how others perceive them as a source of motivation. To facilitate task-oriented learning, Ward and Bodner (1993) recommend that teachers evaluate student performance based on an absolute scale rather than on a scale that compares student performance against each other, emphasize student participation and self-improvement in learning, and incorporate test questions that require explanations and justifications rather than memorized material.

More specific techniques to engage students in learning involve taking what they know from current pop culture and using the concept in the classroom. For instance, Jeopardy, as an active learning alternate to lecture for knowledge based material. For engineering, science and math courses that require problem solving, the reality television show Survivor may be more useful. In Survivor, students are divided into tribes to solve problems to earn immunity. Although Newall (2005) uses different terms to describe the different types of motivation, the concept is the same. Students who are intrinsically motivated (task-oriented) gladly participate in the activity for the challenge of solving the next problem, students who are socially motivated worked on the problems to not let their team, students who were achievement-oriented wanted to win, and students who are instrumentally motivated wanted the bonus points from winning the game to improve their grade in the course. Even students who are voted off the tribes continue to participate by coming up with problems for the next round.

Another technique is through the use of scenarios based on literary work that are interdisciplinary in nature. Waddell and Rybolt (2004) presented scientific problems in a mystery story format based on characters of Sherlock Holmes and Dr. Watson. After every story there is a break to allow students and opportunity to solve the problem before providing the solution.

Woodburn (1977) shares a technique that has had lasting value. His technique emphasizes the contributions of the discipline as it relates to current day activities. Students are motivated by knowing that what they are learning has a greater purpose. They want to know that what they learn in the classroom has relevance and significance to their daily lives. Along a similar concept is what Holme (1994) proposes by starting off a course with students engaged in learning about current research topics in a particular discipline as it relates to the course. Holme's concept dedicates a number of lessons to current research before moving into the actual required lesson material. The advantage of this technique is that it grabs students' attention and allows them to explore their interests in directions that excite them. This technique does however require preparation by the instructor to research the most newsworthy findings and to prepare supplemental information in support of the current research.

### **Psychological Aspects of Motivation and Learning**

In a study conducted by Moore (2007), motivation is deemed self-perpetuating. Students who are motivated conduct themselves in ways that maximize learning and success in academia. Motivated students attend classes on a regular basis without a need for external rewards, they seek additional help when needed, and they turn in quality work on time. On the other hand, unmotivated students minimize the effort they exert, which result in continued poor performance.

So the issue then is how to encourage students to think positively about learning so that they are motivated to learn. One notion has to do with how students perceive intelligence. According to Dweck (2008), students who believe intelligence is fixed tend to shy away from tasks that challenge them. Their belief is that if they are challenged, they are not smart enough to complete the task, so why bother; whereas students who believe in a growth mindset thrive on opportunities to learn. Growth mindset students understand the concept of hard work and how through hard work your abilities grow and further develop. A technique is to explain and show students that the brain is a muscle that can get stronger with use.

Another aspect of motivation is the concept of motivation as it relates to psychological needs. As leaders in modern motivation theory, Ryan and Deci (2000) formulated the self-determination theory that relates motivation to social development and well-being. They believe that humans are active and engaged based on their social condition in terms of competence, autonomy, and well-being. The same concept applies to students in their development and motivation for learning. Based on this concept, students are motivated to learn if they perceive having adequate support from their social environment, a positive environment to master skills and tasks, and an environment where there needs are met.

### **Social Factors of Motivation and Learning**

In looking at motivation, social factors are also relevant. In a special issue of the Journal of Experimental Education, Anderman and Kaplan (2008) look at various types of social motivational factors, from classroom settings, social motives, and the role of culture, to interpersonal and relational factors in student interaction. Classroom social environment and student-teacher interaction play a significant role in student motivation. Ryan and Patrick (2001) report that when students feel a sense of relatedness or belonging they are motivated to learn and perform well in school. Students feel this sense of belonging if they believe teachers are supportive of social aspects in the classroom, such as promoting interaction and respect among

students. Teachers report that students are motivated to perform well if they believe their teachers care for their social, as well as academic needs.

On a more personal level, student emotions relate directly to social factors in the form of interpersonal relationships with peers, parents, and teachers. Ainley (2006) shows that emotions play an important role in motivation and cognition as these three factors relate to learning. Interest in learning raises alertness and attention, which facilitates a desire and motivation to learn.

## References:

- Ainley, M. (2006) Connecting with learning: Motivation, affect and cognition in interest processes. *Educational Psychology Review*, 18, 391-405.
- Anderman, L. H., & Kaplan, A. (2008) The role of interpersonal relationships in student motivation: Introduction to the special issue. *The Journal of Experimental Education*, 76(2), 115-119.
- Dweck, C. S. (2008) Brainology: Transforming students' motivation to learn. *Independent School*, Winter 2008, 110-119.
- Holme, T. A. (1994) Providing motivation for the general chemistry course through early introduction of current research topics. *Journal of Chemical Education*, 71(11), 919-921.
- Moore, R. (2007) Academic motivation and performance of developmental education biology students. *Journal of Developmental Education*, 31(1), 24-34.
- Newall, J. A. (2005) Survivor - Classroom: A method of active learning that addresses four types of student motivation. *Chemical Engineering Education*, Summer, 228-231.
- Ryan, A. M., & Patrick, H. (2001) The classroom social environment and changes in adolescents' motivation and engagement during middle school. *American Educational Research Journal*, 38(2), 437-460.
- Waddell, T. G., & Rybolt, T. R. (2004) The chemical adventures of Sherlock Holmes: Autopsy in Blue. *Journal of Chemical Education*, 81(4), 497-501.
- Ward, R. J., & Bodner, G. M. (1999) How lecture can undermine the motivation of our students. *Journal of Chemical Education*, 70(3), 198-199.
- Woodburn, J. H. (1977) Using applied chemistry to tackle motivation problems. *Journal of Chemical Education*, 54(12), 763.

**Annotated Readings:**

Bigge, M. L. (1982) (4th ed.) *Learning theories for teachers*. New York, NY: Harper & Row. This book was written with the intent of serving as a resource on learning theory and educational psychology. The book is comprehensive in addressing modern theories of learning in an understandable manner without oversimplifying the concepts, which would detract from the full meaning of the theories. The author also compares and contrasts the differences and similarities between the different theories, which assist readers in thinking critically about the theories and formulating their own views. This pedagogical foundation will serve educators well as they formulate plans of action in curriculum development and application of the curriculum in the classroom.

Bransford, J. D., Brown, A. L., Cocking, R. R., Donovan, M. S., & Pellegrino, J. W. (eds.) (2000) *How people learn: Brain, mind, experience, and school*. Washington, D.C.: National Academy Press. This book provides insight on education and related psychological aspects of learning. The intent is to explore the connection between research in education and learning, and its application in the classroom. This requires bringing together current research on the mind, the brain, and learning processes, to address curriculum development, teaching techniques and assessment methods, which is the concept behind this publication.

Claxton, C., & Murrell, P. H. (1987) *Learning styles: Implications for improving educational practices*. Washington, D.C.: Association for the Study of Higher Education-Clearing House on Higher Education. This publication serves to inform readers of the different learning styles so that those involved in education have a better understanding of the kind of students they are working with. With the trend in improving the education system, educators and administrators need to be well informed of how students learn to make the necessary changes and improvements. In looking at learning styles, the authors incorporate personality, information-processing, social-interaction and instruction-preference models.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268. Self-determination theory was developed by the authors over 30 years ago. The theory addresses human motivation as it pertains to psychological needs. This paper addresses psychological needs as it relates to factors such as development, integrity, and well-being. The authors hypothesize that the pursuit of goals is directly affected by the need for well-being, and that different goals have different affect on a person's behavior and sense of well-being. The authors develop this discussion through the relationship between needs being met and its direct correlation to growth and motivation.

Fries, S., & Dietz, F. (2007) Learning in the face of temptation: The case of motivational interference. *The Journal of Experimental Education*, 76(1), 93-112. This purpose of this research paper was to report the findings on the performance of students as it pertains to consequences of temptation in ongoing learning, and when does an alternate activity to learning because a temptation that becomes detrimental to learning. The hypothesis is that temptation lowers motivation for learning, which results in negative learning experiences, less time spent on learning, and poor learning quality. The hypothesis was proven correct. The implication is that

researchers who study learning and motivation need to consider distracters and alternate activities that may compete with learning.

Gagne, R. M., & Driscoll, M. P. (1988) (2nd ed.) *Essentials of learning for instruction*. Englewood Cliffs, NJ: Prentice-Hall. This book on learning is written for teachers as a professional development tool to assist them in designing and conducting classroom instruction. In discussing learning, the authors rely on the information-processing model, which is based on the concept of internal learning processes requiring the activation, support, and sustainment from external factors. The authors believe that external factors play a significant role on internal information-processing, hence, learning.

Grippin, P. C., & Peters, S. C. (1984) *Learning theory and learning outcomes*. Lanham, MD: University Press of America. This book was written for students of educational psychology and education with the intent of showing students the relevance of theory in their area of study as it relates to education. The book is laid out in such a way that it presents the reader with learning outcomes and then works toward explaining and discussing the theory that leads to the particular outcome. The learning outcomes used are based on Gagne's taxonomy.

Hardre, P. L., Crowson, H. M., DeBacker, T. K., & White, D. (2007) Predicting the academic motivation of rural high school students. *The Journal of Experimental Education*, 75(4), 247-269. In conducting this research, the authors were interested in determining whether motivation in students can be predicted. The authors hypothesized that perceived importance can predict learning goals and performance-approach goals. This means that a student is motivated to learn if there is a perceived importance in mastering a skill, information or performance standard. The hypothesis was proven by the data collected.

Kytle, J. (2004) *To want to learn: Insights and provocations for engaged learning*. New York, NY: Palgrave MacMillan. The author argues that the current conventional curriculum is based on a flawed model of how students think. In the book, the author uses the latest research on neurobiology, psychology, and cognition to address the issue of motivation and learning. He does this by addressing educators, the reality of the situation, the concept of being engaged in life, the psychological and neurobiological role of learning, and the motivation factors.

Nelson, R. M., & DeBacker, T. K. (2008) Achievement motivation in adolescents: The role of peer climate and best friends. *The Journal of Experimental Education*, 76(2), 170-189. Applying Maehr's theory of personal investment, the authors looked at students' performance based on how the students perceived the peer environment in their classroom and how their friends' behavior and achievement values affected their goals and achievements. The findings showed that students who felt valued and respected by their classmates were motivated to perform well. Having quality friendships and friends who valued achievement also supported the students' motivation to achieve and perform well academically.

Patrick, H., Mantzicopoulos, P., Samarapungavan, A., & French, B. (2008) Patterns of young children's motivation for science and teacher-child relationships. *The Journal of Experimental Education*, 76(2), 121-144. Given the limited research on the motivation of young children in learning and motivation, the authors set out to study children of kindergarten age to determine

their motivation for learning. In looking at motivation, the researchers looked at demographics, competence, relationships with the teacher, and the curriculum. Teacher-child relationship played a significant role in students' motivation. Positive teacher-child relationship tended to result in high motivation.

Pintrich, P. R., & Schunk, D. H. (1996) *Motivation in education: Theory, research, and applications*. Englewood Cliffs, NJ: Prentice-Hall. The intent of this book is to provide students with a resource that encompasses theoretical and empirical information on motivation in education. More specifically, the authors focus on the major motivation theories, principles, and research results. The authors also use the information in the text to describe and explain how research in motivation can be applied in the classroom.

### **Additional Resources:**

Center for Instructional Development and Research. (2008). Resources: Motivating student learning. Seattle, WA: University of Washington. Retrieved April 24, 2008, from <http://depts.washington.edu/cidrweb/resources/motivating.html>.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: An approach to human motivation and personality. Rochester, NY: University of Rochester. Retrieved April 24, 2008, from <http://www.psych.rochester.edu/SDT/index.html>.

Huitt, W. (2001). Motivation to learn: An overview. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved April 24, 2008, from <http://chiron.valdosta.edu/whuitt/col/motivation/motivate.html>

Roberts, W. A. (ed.) (2008). *Learning and Motivation*. Amsterdam, Netherlands: Elsevier, Inc. Retrieved April 24, 2008, from <http://www.sciencedirect.com/science/journal/00239690>

Svinicki, M. D. (2004). *Learning and motivation in the postsecondary classroom*. New York, NY: Jossey-Bass.

Ydewalle, G., Lens, W. (eds.) (1981). *Cognition in human motivation and learning*. Philadelphia, PA: Lawrence Erlbaum