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MOTIVATING STUDENTS TO LEARN

The Roots of Motivation

By Jamie Cano

Why do some students, when faced with a challenging assignment, work hard to complete every aspect of the task, whereas, other students quit early without devoting much effort. What motivates students to want to learn? What are the roots of students' motivation to learn? These are the kinds of questions that we as teachers are faced with on a daily basis. Let me provide you with three possible answers about what motivates students to work hard.

If you are interested in promoting meaningful learning, you must also be interested in priming the learner's motivation to learn. When students are motivated to learn, they try harder to learn the content and thereby learn more deeply. The focus here is on intrinsic motivation rather than extrinsic motivation. When motivation is extrinsic, it is imposed on the learner from the outside, such as through rewards and punishments. Thus, it is critical that we as teachers concentrate on priming intrinsic motivation.

Motivation Based on Interest

Which form of learning is better – learning based on effort or on interest? According to Dewey (1913), the interest-based learning is more beneficial than the effort-based learning. Dewey argued that the great fallacy of the so-called effort theory is that it equates certain external activities with the exercise of the mind. The case for interest-based learning is that willing attention is more effective for learning than forced effort. Interest causes students to pay attention and actively learn. In short, Dewey emphasizes the need to ensure that the student is cognitively active – rather than only physically active – during learning.

Motivation Based on Self-Efficacy

Self-efficacy is a kind of personal expectation or judgment concerning one's capacity to accomplish some task. Schunk (1991) claims that there is evidence that self-efficacy predicts academic achievement. According to Bandura (1977), self-efficacy affects the amount of effort and persistence that a student devotes to a task. Self-efficacy theory predicts that students work harder and longer when they judge themselves as being capable than when they judge themselves as being unable to perform a task.

Motivation Based on Attributions

According to attribution theory, students seek to understand the world around them, such as searching for the causes of success and failure on academic tasks. Students may attribute their success or failure to a variety of causes, including ability, effort, task difficulty, and luck. The causal ascriptions that a student makes are related to academic motivation. Lets focus on ability and effort. If a student attributes failure to a stable cause such as ability or task difficulty, the student is likely to give up and be less persistent when confronted with similar tasks in the future. If a student attributes failure to an unstable cause such as effort or luck, the student is likely to persist, even in the face of failure.

Summary

Three possible roots of motivation have been superficially exposed. According to interest theory, students learn best when they can find some personal value in the content. According to self-efficacy theory, students learn best when they are confident in their capabilities to learn the material. According to attribution theory, students learn best when they believe that academic achievement depends on how much effort they devote to learning. Although these three views of motivation differ, they share features that could eventually become unifying themes.

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Theme: Motivating Students to Learn

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Motivating Students to Learn through Theory-Based Practice

By Neil A. Knobloch

What is the most important thing teachers do? Think back to a teacher who touched your life. How did he or she do this? Did this teacher get to know you, engage you as a learner, or motivate you to succeed? I believe the most important thing teachers do is motivating students to learn. Motivating students to learn is hard work, takes a tremendous amount of time and energy, and is a never-ending challenge. It can be extremely frustrating and enormously rewarding. The teacher is a major variable in the complex phenomena of motivating students to learn. Foremost, teachers' thinking, decisions, and actions make them more or less effective in motivating students to learn.

What is a motivated student? A motivated student is actively engaged in the learning process (Stipek, 1996). It is important that teachers effectively use strategies to motivate students and actively engage them as learners. Because teachers choose motivational strategies based on a real-life educational context (Fives & Manning, 2005), I asked contributing authors to share how they motivate students to learn in agricultural education.

My primary aim as theme editor was to highlight motivational strategies grounded in the wisdom of practice and connected to theories of motivation. Too often, teachers attempt to motivate students to learn through trial-and-error. Through an accumulation of experiences, teachers depend on motivational strategies that "have worked," but they are not sure why. If teachers understood a few theories of motivation, they could be more thoughtful and reflective, and strategically develop opportunities for students to experience success in their classrooms. Understanding theory is like wearing a pair of eyeglasses that gives one clearer vision. Teachers should be more reflective and think about their interactions and experiences through such eyeglasses.

Reflecting on Practice

What does it mean to reflect on the wisdom of practice? How does one make sense of real-life experiences? I will briefly demonstrate reflecting on wisdom of practice, and connect five life experiences to theories of motivation.

1. Kindergarten Student. As a new student in a traditionally passive learning environment, I was engrossed when I worked on an assignment about farm animals. Learning was fun and enjoyable because of my farm background. The content was relevant and connected to my interests (e.g., expectancy-value motivation).

2. High School Student. As a high school student, I was driven to succeed because my agriculture teachers were interested in me (e.g., self-worth motivation) and helped me focus setting and achieving goals (e.g., goal motivation). I followed my agriculture teacher's advice to pursue a degree in agricultural education because I trusted him and the career seemed to be a good fit (e.g., expectancy-value motivation).

3. College Student. Although I was not particularly interested in attending college, I was self-determined to achieve my career goal and become an agriculture teacher. College students typically change their major four to five times. Now I understand why I did not change my major, and why agricultural education was the right career choice for me (e.g., self-determination motivation).

4. Novice Teacher. As a novice teacher, I struggled with the overwhelming challenges in my early years of teaching, and I doubted my own ability to teach. Fortunately, there were key support people who believed in my ability to teach and I did not give up. I reached a feeling that "I could teach" in my third year because of positive comments and a few small successes during my early years of teaching (e.g., self-efficacy motivation).

5. Graduate Student. Although I had some amazing experiences as a high school teacher (after my first two years), I thoroughly enjoyed my days as a doctoral student learning why things worked (and didn't work) when I was a high school teacher (e.g., flow motivation). My days at Ohio State University were filled with inspirational experiences and found several new pairs of eyeglasses to help me understand how motivate students to learn.

Motivational Concepts

In this issue, you will read about motivating students from various perspectives, including an administrator, teachers and students. As you read the next 10 articles, I encourage you to reflect on your experiences and how they are connected to the motivational concepts and theories that are discussed in this issue (Table 1).

Table 1
A Baker's Dozen of Motivational Concepts

1. Enthusiasm
2. Shared Vision and Sense of Community
3. Relationships with Students
4. Challenging Expectations
5. Opportunities for Success
6. Responsibility and Life Skills
7. Relevance and Interest
8. Fun and Enjoyment
9. Active Engagement
10. Competition
11. Positive Feedback and Recognition
12. Pride and Ownership
13. Accountability

Roles of a Motivated Teacher

Motivated teachers have a tremendous impact on students, especially when they apply the motivational concepts highlighted in this issue. However, the baker's dozen of motivational concepts does not suggest that motivating students is an easy-to-do task list, but a never-ending journey of *relating to*, *developing*, and *encouraging* people. As a motivated teacher, consider your three roles to be a caring person, a facilitator, and a coach.

1. **Be a Caring Person**. Use relational strategies (see Velez). Get to know your students' interests, goals, and aspirations. Establish rapport and relationships with your students based on care and trust. Be a role model for your students. Let them see that you are human. Believe in your students and develop their self-worth.

2. **Be a Facilitator**. Use engaging strategies to develop people (see Hileman; Martin; Rittle & Pierce; Swan; Williams; Youst & Egan). Develop a place, curriculum, and context that will encourage positive relationships and cognitive engagement. Give students opportunities to develop ownership, responsibility, entrepreneurship, leadership, and life skills. Create interest by being enthusiastic and making content relevant. Use brain-based teaching strategies to actively engage students.

3. **Be a Coach**. Use coaching strategies to encourage people (e.g., Wedel & Jennings; Shertzer & Shertzer; Edwards & Miller). Thoughtfully plan and prepare your game plan to motivate students. Provide positive encouragement, recognition, and feedback. Create a sense of community and shared vision. Clearly communicate and establish challenging expectations. Develop an accountability system that develops responsibility and character.

There are a number of effective strategies to motivate students to learn. However, consider this theme issue as a sampler of many motivational strategies used in agricultural education. As such, I wish to thank all of the authors for sharing their wisdom of practice, which was based on sound theory (of course), and I hope this theme issue engages you to think and act more reflectively as a motivated teacher.

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Motivating Students Begins with a Motivated Teacher

By Cory Wedel & Vici Jennings

Before the first practice of the 2002 season, the Stratton Eagle football team went into the high school gym and looked at the many banners that were hung up by past state champion teams. Stratton won the Colorado 8-man football state championship five out of six years from 1992 to 1997, and while doing so set a state record of 48 consecutive wins. The players were asked if any one of them was on a team that got to hang up a state champion banner. Nobody raised a hand. Thus, the motivating theme for the year was established—hang up a state champion banner at the end of the football season.

A coach motivates his team through the pursuit of winning a championship. How can a teacher translate that into motivating individual students in the classroom?

An Enthusiastic Teacher

There are many factors, both intrinsic and extrinsic, that motivate learners and the factors can differ significantly from student to student. Nonetheless, we believe one overlying consideration is paramount: *If the teacher is motivated and enthusiastic about what he/she is doing, then there is a greater probability students will be motivated as well.* It seems like an obvious premise, but ask a student about the influence of a teacher who charges into the classroom excited about a lesson, creates relevant connections to their lives, presents challenges to be overcome, and makes it fun in the process.

As such, research shows that students are more likely to be interested, energetic, curious, and excited about learning when a teacher is enthusiastic (Patrick, Hisley, & Kempler, 2000). Students were intrinsically motivated to learn when taught by an enthusiastic teacher. Teacher enthusiasm cannot be a cure-all for the motivational ills of students, but it is an excellent way to mobilize interest, excitement, and curiosity in a classroom (Patrick et al.).

We asked our students, and they have admitted that they can be motivated about their least favorite subject if the teacher is enthusiastic. Similarly, students have told us that they can become disinterested in their favorite subject if the teacher is unprepared and lacks enthusiasm. An adult who is locked into a boring, irrelevant meeting tunes out. Why would a student do any differently if he/she cannot see the relevance or the challenge?

Motivation Begins with Planning

We tend to think that everyone can be motivated, the trick is to discover how. Coaches find ways to motivate players by scouting their opponents, preparing diligently, modifying game plan strategies, and finding new, different, and stimulating ways to break the monotony of practice. Teachers can translate coaching strategies into teaching strategies. How well do you know your students? Are you prepared to teach every class? Do you have a teaching plan, and are you willing to change it if it isn't working? Do you make the learning environment exciting? How engaging is your classroom?

In *Seventeen Reasons Why Football is Better Than High School*, Herb Childress states that, "In football, the adults [coaches] who participate are genuinely interested. … they don't say it in words so much as in their actions, in the way that they hold themselves

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Theme: Thinking Critically

What does it mean to think critically? What does it mean to involve students in thinking critically? How does the teacher know when optimum ciritical thinking has occurred? What are some strategies to use to engage students in critical thinking?

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and dive in to correct problems and give praise." Most coaches we know make it obvious how much they enjoy what they do, but what about teachers? Childress elaborates, "It takes a lot of guts to stand up in front of 25 students who didn't volunteer to be there and say, 'You know, dissecting this pig is going to be the most fun I'm going to have all day.'" In classrooms where an enthusiastic teacher loves what he/she were doing, the students will be engaged and learning. A motivating teacher gets students interested not necessarily because of the intrinsic value of the subject, but because enthusiasm is contagious.

So, how does a teacher translate that spirit of enthusiasm and motivation seen in coaching into the classroom, day after day? It is very hard work! A foundation must be set that includes planning, preparation, and procedure. Students are acutely aware when the teacher is poorly informed, the lesson plan is left to chance and activities are time-fillers. The teacher must study and know the information in order to present it with believable authority. Class time must be packed with engaged time, not silence and seatwork. Activities must be planned with the precision of a football playbook. Hard work before we meet up with students pays off with a win in the classroom.

Get Students Active

Agriculture teachers have a built in motivating mechanism, the FFA, to create opportunities for students to be recognized for their talents and accomplishments. The teacher just has to determine what FFA activities will be most motivating to the student(s), then incorporate them into the fabric of the Agricultural Education program and FFA Chapter. FFA provides recognition for chapters, teams and individuals. There are opportunities for recognition in agriscience, SAEP, and career development, as well as in leadership and public speaking. If a student or chapter is motivated by recognition, there are plenty of ways to achieve that through FFA.

In Stratton, we have discovered a wide variety of FFA activities that motivate our members ranging from State and National Convention to Parliamentary Procedure to Career Development. After assessing student talents and school wide needs, we started searching for a new, stimulating activity. What we discovered was PALS (Partners in Active Learning Support), a program that has become quite popular. Every Stratton FFA member is partnered with an elementary student in kindergarten through second grade. The PALS meet once a month for different activities. PALS days are always lots of fun and sometimes it is difficult to determine who enjoys it more, the elementary students, or the FFA members. Our point is, we have searched for and selected certain activities that motivate Stratton students, and we incorporate those activities throughout the program. As a result, motivated students begin to develop ownership in the FFA Chapter and more importantly, ownership of their education.

Banner Up!

The 2002 Stratton Eagle Football team ending up winning the sixth football state championship in school history. And yes, that team did get to hang up a State Champion football banner in the gym after a perfect 12-0 season. It took five years for the Stratton FFA Chapter, which was chartered in 1999, to win its first state Career Development Event. Establishing an Ag Program or FFA Chapter full of motivated students doesn't happen overnight, it is a cumulative process that starts with strong leadership from a very motivated, enthusiastic teacher. According to Jim Collins in his book, *Good to Great*, "The process resembles relentlessly pushing a giant heavy flywheel in one direction, turn upon turn, building momentum until a point of breakthrough, and beyond" (Collins 2001). Now, Stratton has won two different state CDE's and we have been ranked as a two-star National Chapter. We are going to start hanging our own state champion banners, not in the gym, but in the Agricultural Education classroom. These banners won't be trimmed with school colors of green and white, they will be National Blue and Corn Gold. Will another success story be lived (and told)? " . . . And in the fall of 2006, Mr. Wedel took his new class of 'Greenhands' into the Ag room and asked them if they would like to hang up a state champion FFA banner."

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Motivating Students to Learn from a Father-Daughter Perspective

By Stephanie L. Shertzer & Mike Shertzer

The ability to motivate is the ability to move to action. As teachers, we use motivation daily to entice and excite students to accomplish tasks and engage in a variety of learning experiences. Motivation can lead to success—success in your program, success in your students, and success as a teacher. However, determining how to motivate and selecting the appropriate form of motivation can be challenging g. As I finish up my graduate studies and prepare to enter into the field of agricultural education, I find myself thinking back to the 4 years I spent in a high school agriculture classroom. I reflect back on the ability of my teacher to motivate even the most difficult students to accomplish great things. It just so happens that the teacher I speak of is my dad.

Motivation Lessons from My Dad

Mike Shertzer has been teaching high school agricultural education for 36 years with 35 of those years being spent at Bowling Green High School. For the past three and a half decades, his ability to motivate students is evidenced through the numerous student awards and accolades the program has received. Bowling Green was named first in the nation in the student division of the National Chapter of Innovation Award, has had numerous State and American degree award winners, Career Development award winning teams at the state and national levels and his students are consistently succeeding in the classroom as well as in the community. While Mr. Shertzer may not be an expert in the field of motivation, throughout his tenure as a classroom teacher he has learned and developed ways to successfully move students to action and become successful. A few motivational techniques are highlighted.

Tradition: Just like a winning football program, people like to be a part of a winning tradition. Students are reminded of the work done by the many students that have come before them, which motivates them to succeed. A student is more willing to set goals and be motivated to achieve them when they want to achieve or exceed the accomplishments of others.

Competition: By structuring friendly competition among individuals and between classes throughout his teaching as well as FFA chapter activities, students will be excited to do their best. For example, my dad uses games to review for tests. Students enjoy the change of pace and are motivated to learn the information because they are having fun while learning.

Humor: My dad's ability to joke with all students in a harmless manner creates a comfortable classroom environment. In turn, this type of environment encourages and motivates students to participate and learn. For example, prior to the chapter's annual banquet, my dad conducts a "Road-kill Café" to teach etiquette to freshman students. During his presentation, the students enjoy watching the teacher eat lettuce with chocolate sauce on it and various other concoctions to help prove how important it is to use good manners at the banquet. Also, before the start of fruit sale, he dresses as "Mr. Peanut." Dressed in a burlap sack and a hat with peanuts all over it, dad kicks off the fruit and nut sale by pretending to be a bag of peanuts straight from the farm.

Recognition: My dad has found the importance in recognizing students no matter how large or small the accomplishment. He does this a variety of ways, such as, in newspaper articles highlighting the achievements of students, announcements over the school loudspeaker, taking time at the beginning of class to congratulate individuals on their accomplishments as well as providing rewards for meeting certain goals. For example, if a student sells over $500 worth of fruit, he or she gets dinner out at a nice steakhouse. At the annual banquet, my dad makes sure that each student is recognized in front of the over 300 family members, peers and community members in attendance. He does this through a year in review slideshow, various awards, recognition of CDE teams, a program book with chapter highlights, and many other ways.

Enthusiasm: Enthusiasm is contagious and it is hard for the students not to catch it in my dad's classroom. From the first day of class, he shares his passion for agriculture and the importance of being agriculturally literate. For this reason, students develop the same enthusiasm and passion for agriculture. In turn, this motivates them to actively participate in class.

Relationship: Nothing is more important to my dad than building a relationship with each of his students. Through this relationship building process, he also creates a supportive environment for his students, there by making all the individuals in the class

feel included. My dad also makes it a point to show interest in his students' lives outside of the classroom. Even though he no longer has school-aged children living at home, my dad still attends athletic and extracurricular events and acknowledges his students' participation in class the next day.

A Daughter's Understanding of Motivation

The above examples of motivation illustrate the use of extrinsic and intrinsic motivation as tools for success in the classroom. In order to better understand intrinsic and extrinsic components and how they are best used, researchers have spent years studying the impact of these methods as they relate to motivation. This is where I attempt to put my graduate education to work to understand why Dad's motivational antics work.

According to Ryan and Deci (2000), individuals are extrinsically motivated whey they engage in an activity to attain a separable outcome where as intrinsic motivation is based on engagement in an activity for its inherent satisfaction which can lead to a higher quality of learning and creativity. In the past, these two types of motivation were often viewed separately or if viewed in combination, extrinsic motivation was thought to undermine intrinsic motivation (Ryan & Deci, 2000).

The Self-Determination Theory proposed by Deci and Ryan in 1985, does not view these methods in the traditional sense, but rather emphasizes extrinsic motivation as a way of facilitating intrinsic motivation (Ryan & Deci, 2000). This form of intrinsic motivation will only be maintained if the participants continue to feel competent and self-determined (Eccles & Wigfield, 2002). These same basic needs of competence and self-determination also play a role in extrinsic motivation. For example, while a student may want to earn the free dinner for selling a certain amount of fruit (extrinsically related), the student also needs to feel that they have the competence and self-determination to sell the fruit (intrinsically related).

More recently, research refined and extended the Self-Determination Theory to include internalization. Internalization is "the process of transferring the regulation of behavior from outside to inside the individual" (Eccles & Wigfield, 2002, p. 113). This is where extrinsically motivated behaviors become more self-determined and individuals are more likely to internalize a goal if they understand it and have the competence to achieve it. This is also known as self-efficacy motivation—one's belief in their ability that they can successfully perform a task in a specific situation (Bandura, 1994). As a teacher, you can help to intrinsically motivate your students by helping them to gain the confidence and competence to achieve a task or goal. My dad develops an "I-can-do-it!" attitude in his students through coaching and recognition. In addition, he pools student talent and creates a "we-can-do-it" attitude. This is known as collective efficacy (Bandura, 2001). Dad also works hard to show students how they will benefit from participating in various activities (Eccles & Wigfield, 2002). Initially, some students may not find activities that are inherently interesting. However, research shows that the primary reason people are willing to initially become involved in an activity is because they are valued by others that are significant in their lives such as a teacher or advisor (Ryan & Deci, 2000).

As a teacher, you can help to intrinsically motivate your students by creating confidence through encouragement and recognition, providing activities that they feel competent in, and by sharing your passion and enthusiasm of agricultural education. Once your students are motivated, you will then experience success as a program and as a teacher. What is more motivating than seeing motivated students succeed?

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Motivating Students to Learn from the Teacher's Perspective

By Ray Edwards & Steve Miller

A visitor to the Conrad Weiser Agriculture Science Department cannot help but be struck by the high energy. It seems that the place is a buzz of activity, both literally and figuratively. In a small section of the garden, the beekeepers attend a hive. In the classroom, two upper-classmen are holding a test review for twenty freshmen. In the lab, two students are on a cell phone with a technician from Sigma chemical company, discussing the best vector to use in a plant transformation protocol. Meanwhile in the greenhouse, a small group is reviewing questions that might be a part of the Pesticide Applicator's Test. While the activity itself is interesting, what is remarkable is that it is happening at four o'clock in the afternoon. School has been over for an hour and a half.

The Essential Ingredients to Motivate Students

How does this happen? What makes Conrad Weiser a unique place? Why are the students so motivated to learn? We have been asked to share the steps we took to develop a highly motivated group of students. We believe that there are five essential ingredients to motivating students to learn.

A Clear and Coherent Shared Vision

All members of the department develop a common vision. Everyone knows what is expected and what is accepted. We made a conscientious decision to center the department on an agricultural science focus. This decision was based upon the question, "How can we best serve our students?" We saw the numbers of jobs in production agriculture declining even as the total number of opportunities in the agriculture related fields grew. After reviewing the possibilities, we arrived at the conclusion that our available resources, coupled with high student interest, made agricultural science an excellent choice. The keywords on which we focused were "Science," "Careers," and "Leadership." Everyone in the department shares the vision that we prepare students who will be outstanding leaders in our school, and successful students in both high school and college.

Our vision is probably best summarized by a small sign in our department that reads, "Perfection is expected, excellence is accepted." A shared coherent vision is the first step in student motivation: *When students see and understand where they are going, they are more likely to get there*.

An Integrated Curriculum

After developing a clear and coherent shared vision, we selected topic strands that would be woven throughout the curriculum. Each strand had to have career skills attached to it. Each had to be broad enough to catch student interest, but deep enough to allow an interested student to develop an area of expertise. We settled on seven strands: Tissue Culture, Animal Science, Microbiology, Horticulture, Food Science, Biotechnology and Environmental Science. Each strand has in-depth reading, development of technical writing skills, laboratory investigations, class lecture and discussion as well as multi-media tied to it. Each strand has a set of expected outcomes. The strands and the expected outcome skills provide a constant against which we can measure a student's progress.

The curricula provide a touchstone, a basis upon which to standardize a student's education. However, our curriculum is also flexible. The change is often spontaneous, based upon student interests or in response to timely events. For example, the appearance of a tobacco hornworm might elicit a two-three day inspection of parasites and a discussion of IPM. *When students see connections to an area of interest, they are motivated to develop that interest.*

Exploration of Individual Interest

In addition to a flexible curriculum, each student is encouraged to develop an area of expertise. Our students develop "professional contacts," with professionals in a student's area of expertise. The student contacts this individual via snail mail or e-mail regarding a problem or question that has arisen after reading an article. It is not uncommon for the professional contact to develop into a phone conversation, an exchange of letters and in-depth reading (sometimes even unpublished notes) and an invitation for a visit. This summer, 40 students toured Agricultural Research Service Beltsville after Dr. Joseph Dickens invited a sophomore to his lab to explore the chemical communication that occurs in insects.

The exploration of individual interest goes beyond choices of reading. Students have formed "crews," small groups who study a common interest and who work on tasks that they develop. It is not uncommon to see the

pond crew after school cleaning the ornamental pond they designed, or the bee crew attending a hive. Meanwhile, a group in the lab is finishing up their experiments that they will enter in the regional science fair.

Every student in the department knows that we will support any well-thought out proposal for independent study. This may mean the purchase of some extra supplies, purchases of a book, or offer for a professional visit, it means providing access to the department. Before and after school and often on weekends, every student knows that they have the opportunity for independent study, "Because they are worth it." *When students can explore individual interests, they are motivated to learn.*

A Sense of Ownership, Responsibility and Pride

A critical ingredient in our success is the feeling of ownership that our students have. This is their department. They take care of the materials because, in effect, they own them. They keep each area organized because it is their area. If they see someone misusing the area, they rectify the area because it is their area being misused. Ownership invites self-analysis; an introspection of the effort given and a self-critical evaluation that motivates a person to improve a skill or level of knowledge. Our students own their work. It is their success or failure. A positive thank-you note or letter about the department reflects on their ability, not just the teacher's.

With a sense of ownership comes a sense of responsibility. The tissue culture area is spotless because the crew knows that their job is to run a high tech clean room. The sheep in the animal lab will need care over the Christmas holiday break. The animal crew arranges a schedule that guarantees that the animals in their charge will be fed, watered and have the bedding changed. *With ownership comes responsibility; with responsibility comes pride in a job well done.*

The sense of ownership is personified in our Teaching Lab Assistants (TLA's). These are sixteen upperclassmen that are changed with oversight of each area of the department. TLA's develop lessons in their area of expectations, host department visitors, make recommendations for activities in their area, hold office hours when they are available to advise or tutor underclassmen as well as conduct his/her own independent study. A TLA is a middle level manager whose week starts at 7 a.m. on Monday for the weekly planning session and ends with an inspection by the Head TLA's on Friday afternoon. The TLA's know that our department is as successful as our TLA's make it. *When students feel that their education belongs to them, they will go to the extra mile.*

Daily Attention to Detail with Esprit de Corps

Every successful organization has logos, emblems, and slogans. We are no different. We have tee shirts that each crew member earns when he/she passes the proficiency test. TLA's have polo shirts that are corporate sponsored. The department has its own logo, "CW Aggies," as well as its slogan, "Geeks with Guts."

Every successful organization has standards and lofty goals. We are no different. We expect success. We provide both high praise and criticism. With each job well done comes the true self-confidence and self-esteem that is so highly treasured. We know that sometimes people do not perform up to expectations. When that happens, a KITA (Kick In The Accountability) follows. Our students know in their hearts the idea that Teddy Roosevelt so eloquently expressed when he wrote, "The credit belongs to the man….who strives valiantly; who errs, and comes short again and again, because there is no effort without error and shortcoming." It is not uncommon to see someone scrub the floor as an "act of contrition," a sign that a mistake was made and acknowledged. *Individuals need ways to acknowledge and erase simple mistakes quickly.*

We believe that it is important to have students acknowledge a mistake, correct it, and move on. There is a safety and humanity in a student knowing that it is okay to make an honest mistake. That knowledge also gives the permission and courage to take the risks that are necessary to excel. *When students feel that they can make an important contribution to an organization, they are motivated to go above and beyond the call.*

Volumes have been written about motivation and volumes more about educational philosophy. Our philosophy of motivating students to learn boils down to five essential ingredients: a clear and coherent shared vision; an integrated curriculum; an opportunity to explore individual interest; a sense of ownership, responsibility and pride; and, daily attention to detail with esprit de corps. We believe that the Agricultural Education system is an outstanding model for the public education system as a whole.

Ray Edwards has 31 years of teaching experience and is an Agricultural Science Instructor at Conrad Weiser High School, Robesonia, PA

Steve Miller has 33 years of teaching experience and is an Agricultural Science Instructor at Conrad Weiser High School, Robesonia, PA

Motivating Students to Learn from the Student's Perspective

By Alex Youst & Melissa Egan

We believe there is virtually no other Agriculture Department quite like Conrad Weiser's. This is due in part because our teachers do not run the entire list of department functions. Rather, the students operate and direct the department through leadership, professionalism, and dedication. This makes the Conrad Weiser Agriculture Department a unique learning environment. Each fall, a new generation of students is welcomed into the Conrad Weiser High School Agriculture Department. Seventy-seven eager freshmen fill the seats in the classroom and a dedicated team of "Aggies" is prepared for their arrival.

One-of-a-Kind Experience

In the case of our department, it is difficult to explain why students are motivated. The answer seems to simply be, "they just are." It is the atmosphere of the classroom and the area surrounding it that makes the experience one-of-a-kind. The students' motivation to delve into agriculture stems from the wry, humorous cajoling from our teachers, Mr. Raymond Edwards and Mr. Stephen Miller, and the dedication of our upperclassmen. For weeks, upperclassmen anxiously organize the department. They commit summer hours to writing lesson plans, assembling bulletin boards, updating record books, and typing agendas. They greet the incoming students with a sense of pride. Their enthusiasm is contagious.

Student Engagement

Early on, freshmen are eager to explore the opportunities available in the department. New students are introduced to 'crews,' which are small committees that are dedicated to specific projects in the department, such as beekeeping. Each crew is advertised and organized by older students. The success of the group completely depends on the ability of individual students to lead their team and the dedication of the new students eager to learn new tasks and perform them with competence. Students also have the opportunity to join competitive FFA teams devoted to subjects ranging from horse judging to public speaking.

Student Leadership

As new students mingle with upperclassmen, they develop a desire to discover their own niche in the department. Mr. Miller has a knack for seeking out the capabilities of almost every student that walks into the Agriculture Department. Students enter the department with little to no preconceived purpose, but they come out the other side with knowledge in areas of expertise that they thought they would never have developed. Students are encouraged to explore their own interests and ideas. It is a genuine leadership experience. Students are responsible for organizing each part of the process. They develop a strong sense

of ownership of the department, and are willing to commit extra time and hard work.

Of course, students make mistakes—they miss deadlines, and plans fall through. The ability to fail is just as important as the ability to succeed. Students are responsible for their mistakes. Every Aggie can recall a tragic error that resulted in "scrub duty" or an afternoon spent cleaning the cockroach cage. Students are faced with the challenge of correcting their own errors and serving consequences—something they do not often experience. Their ability to formulate solutions to real problems has prepared them for success in the future.

Student Success

Every student knows the success story of Denise Gardner, now a Penn State College of Agriculture Student, and her grapes. Most students are familiar with the picture of the tobacco cells after Chad Kramer, now a Ph.D. student at the University of Wisconsin—Madison, removed the cell walls. The students that exit our department after four years of "hellish" work excel, and successive students learn about their accomplishments. As Mr. Miller always tells us, "Stories will be told about you."

There are several aspects to our department, and FFA is one of the largest subdivisions. Many students find success in Career Development Events (CDE's), competitions sponsored by FFA. Our FFA chapter is known statewide for our competition success stories. We have achieved 37 state championship awards in various CDE's, but the numbers are not what really matter. The motivation to succeed is so strong in each person that competing in CDE's is a necessary part of FFA. FFA does not drive the curriculum or the focus of our department.

The FFA motto gives members 12 short words to live by as they experience the opportunities in the organization.

Our department uses FFA as a vehicle to motivate and develop leadership opportunities.

The FFA motto gives members 12 short words to live by as they experience the opportunities in the organization: *"Learning to Do, Doing to Learn, Earning to Live, Living to Serve." As E.M. Tiffany wrote in 1938,* "I believe in leadership from ourselves and respect from others. I believe in my own ability to work efficiently and think clearly, with such knowledge and skill as I can secure…" The center of our department is on leadership, learning, and achieving, and the FFA helps the students to accomplish these goals.

The walls and shelves of the department are decorated with the achievements of many generations of Aggies. The pennants that hang in our department laboratory represent 58 universities from which our students have received undergraduate degrees since 1978. Nineteen pennants represent schools attended for masters or doctorate degrees.

Although FFA is a major part of our department, we realize that it is but a working cog in a successful machine. It is only a small part of what makes the Conrad Weiser Agriculture Department a unique, successful program.

Alex Youst is a junior and the FFA Vice-President, and Melissa Egan is a senior and the FFA President at Conrad-Weiser High School in Robesonia, PA. Alex is planning to pursue a career in teaching and Melissa is planning to pursue a career in drama and theatre performance education.

Motivating Students Through Responsibility and Trust

By Jon Rittle & Kelly Pierce

The Conrad Weiser Agriculture Department was instituted 50 years ago. During these past 50 years, a high degree of integrity has been established. Mr. Miller and Mr. Edwards are the present teachers and advisors of the department. They understand the extent of the hard work that was put into the formation of this prestigious department. Yet, they do not successfully manage an agriscience program alone. They have created a program to create student ownership and motivate excellence. Teaching Laboratory Assistants (TLA) are selected to uphold the integrity of the department and to present upperclassmen with an opportunity to manage an area of the department. TLAs must meet high requirements and pass rigorous interviews to be appointed to such a position of responsibility.

Rigorous Expectations

Mr. Miller and Mr. Edwards have the massive task of teaching underclassmen about the various fields of agriculture as well as how the department operates. As underclassmen, we are encouraged to study many fields of science and agriculture and eventually pin down a specific interest. Development of excellent communication skills is highly stressed. The rigors of the department are often too much for the majority of students, and only a small percentage usually continue onto the next level of instruction. TLAs are the culmination of this 'weeding out' as Mr. Miller would put it.

The TLA serves the department as a laboratory assistant, and manages a specific area and teaches some basic lesson to underclassmen. As a student, we must increase our knowledge in a particular field of interest. Agriculture students first encounter TLAs as freshmen. When we were underclassmen, we understood that each TLA was an upperclassman that had displayed a great interest in the department, but were never quite sure why anyone would want to take on such a harsh workload. TLA appointment is the equivalent to a contract binding each student to the department for the duration of the year. Once appointed, every action of the TLA is heavily scrutinized because any negative action or false information could tarnish the integrity of the program. What could possibly provoke students to take on this gargantuan duty?

Nurturing Challenges

Mr. Miller and Mr. Edwards motivate their students to take these challenges and the students excel in them. They mold their students into individuals equipped with the knowledge and skills necessary to perform in college. The department would be no different from other programs in our school if it were not for our current advisors. There is no other department in our school that bestows as much responsibility and trust in their students than this program. As a TLA, we are given the opportunity to gain some real-life experience in a college situation and utilize the academic resources present in the department.

Our advisors encourage us to challenge ourselves no matter the size of the task. We are expected to put forth our best effort 100% of the time. The Agriculture Department would not be able to continue to thrive and improve if its "aggies" were not motivated to strive for excellence.

They have created a program to create student ownership and motivate excellence.

Jon Rittle is a vet lab teaching laboratory assistant. He plans to pursue a career in laboratory science and biotechnology. Kelly Pierce is the head teaching laboratory assistant and plans to pursue a career in elementary education. Both students are seniors at Conrad-Weiser High School in Robesonia, PA

Motivating Students by Cultivating Self-Worth

By Jonathan Velez

Seeds thrown on uncultivated ground lack the environment necessary to produce a bountiful crop. Farmers, aware of this simple fact, are willing to take time utilizing the resources necessary to ensure a successful return. As agricultural educators, our philosophy should be the same: *a willingness to provide an atmosphere conducive to the growth of a student with a clear picture of the long-term goal.* Often teachers take the seeds of motivation and sow them on ground that has never been prepared for proper growth. If we take the time to cultivate self-worth within our students, our attempts at motivation will not be in vain.

Motivation is a powerful tool which harnesses emotion to promote immediate results; however, motivation fails to address the underlying need to increase self-worth. While motivation is often defined as an act, process, or state, self-worth is a fundamental concept which precedes the act of motivation. Covington (1998) defined self-worth as the tendency to establish and maintain a positive self-image (Eccles & Wigfield, 2002). In order for students to be motivated they must have an inward belief in their ability to succeed. This belief of self-worth is a foundational component for motivation and essential for classroom and lifelong success.

Is Joe in Your Class?

Every morning Joe walks in, puts his head down on his desk, complains about the assignment, and you guessed it, doesn't have a pencil. Joe simply lacks motivation, and after a few pats on the back and some inspirational quotes, he'll surely jump eagerly at your next assignment, right? Not so. If you have ever attempted this with a student such as Joe, you have probably realized that more is required. Joe is unreceptive to motivation because he lacks a belief in himself, and without that belief, all the carrot waving in the world will be to no avail. Before we can effectively motivate students, we must pause and consider the impact of self-worth.

In agricultural education, we have the unique privilege of being able to work with students in a multitude of environments. This affords us the opportunity to have a greater impact on self-worth than arguably any other teacher in the school. With this privilege, comes responsibility. We have the opportunity to impact students, changing the way they view themselves, and the responsibility to build student self-worth, with the goal of lifelong motivation.

Cultivating an Attitude

Scholars have labored tirelessly in researching the many facets of motivation, some of the most prominent being: intrinsic versus extrinsic, the interchange between self-esteem, self-concept, self-worth and self-efficacy. Through varied areas of research, one simple fact shines through—you cannot effectively motivate students extrinsically who lack intrinsic belief in themselves. Self-worth is not a quality given, it is an attitude cultivated. It does not happen by chance; it occurs when educators allow the concept of self-worth to permeate themselves, their classroom, and the lives of their students.

Think about the influential individuals in your life. Did they encourage or discourage? Criticize your character or correct your actions? Did they support your goals or tear down your self-worth? How many of those influential people were educators? The following are some practical suggestions on how to create and maintain an environment conducive to increasing self-worth. Consider these four strategies the seeds of motivating students that can yield a bountiful crop of self-worth.

1. Establish Rapport Coupled With an Environment of Respect

From the moment students enter your classroom, you can see it in their eyes, and read it in their stance. Shifting nervously from side to side they scan the room, intent on finding a place of security. Ah, the potential of freshman, students longing to be accepted into an environment of respect. As an agricultural educator, the establishment of self-worth begins the moment you initiate interaction with students, as this sets the tone for the next several years.

A freshman may not remember the lesson, may not even remember the topic, but they will never forget how you made them feel. Take the time to be friendly, recognizing the overall importance and influence of your actions. Greet them as they walk in the door, ask about their home, hobbies and sports. Don't disguise your humanity under the guise of educational professionalism.

Treat students with respect and dignity. Each must be recognized as an individual possessing value and worth. Oftentimes, the qualities of

value and worth are not established at home, amongst family, or even among their peers. These values are gained through interaction with individuals recognizing the necessity to instill self-worth.

A person who has a sense of self-worth knows that he or she is loved and respected by others and is valued as a person (Seifert, 2004). Teachers should create an incubator environment within their classrooms which shelters, supports and nourishes individuals, fostering engagement in the learning process.

2. Be Consistently Positive

It is essential that the context and comments towards the student are always positive. This does not mean you cannot correct. To the contrary, correction can and should be applied, but only in a manner that links with positive reinforcement. When correcting extrinsic attitudes and actions, refrain from criticizing the intrinsic character and nature of the student. Comments directed toward improvement of behavior are different from caustic comments directed toward character. As educators, we must correct and address concerns in a manner that encourages growth and confirms instructor support to affect change.

Without a doubt, students are greatly affected by the sharp cutting comments of their peers, which often attack their character. Try as we may it is extremely difficult for instructors to halt all negative comments in the classroom. However, we must consistently and intentionally address the comments that we hear, as well as set an example of appropriate communication; thereby cultivating a welcoming, supportive, and safe learning environment.

When asking questions and receiving responses, remember the subtle communication we make matters. "You should have been able to do better than that." "What were you thinking?" "You didn't think about that very hard did you?" Those comments taken in an instant affect the student's motivation temporarily. These same remarks compounded over four years have the capability of destroying the student's self-worth. This is not an argument for a "mushy gushy-feel good" approach to teaching. Rather it is a desire to put into context, and lend understanding to the manner in which comments can uplift or destroy the concept of self-worth.

3. Demonstrate Confidence in Student's Ability to Succeed

Framing all communication in a manner that confirms a belief in the student's ability to succeed is vitally important. There is a difference between the comments, "I know you can succeed," and, "I think you can succeed." One evidences a definitive belief in the student, grounded in certainty, and the other entertains an idea of success, framed in doubt. Shape your comments so that over a period of time they build up the students' belief in themselves.

Look for ways to reinforce positive behavior with encouraging comments. When observing a student's outstanding attitudes or actions, deliver focused specific praise in that area. Psychologists often suggest that individual mental processes, such as beliefs, play important roles as students come to expect certain reinforcements for certain behaviors (Crocker & Wolfe, 2001). By reinforcing positive action through consistent encouragement, instructors demonstrate belief in student's abilities and validate self-worth. Remember that this is a long-term endeavor, which requires patience and perseverance.

4. Offer Opportunities to Succeed

Often students fail to seize opportunities because they lack confidence in their ability to accomplish tasks. Goal setting is an ideal way to demonstrate an opportunity and con-

Strategies to Motivate Students

1. Establish rapport coupled with an environment of respect
2. Be consistently positive
3. Demonstrate confidence in student's ability to succeed
4. Offer opportunities to succeed

firm a capability to succeed. It is important to start with simple easily attainable goals that allow students to realize accomplishment. "The simplest way to ensure that students expect success is to make sure they achieve it consistently. Teachers can accomplish this by beginning instruction at their level, moving in small steps, and preparing students sufficiently for each new step so that they can adjust to it without much confusion or frustration" (Brophy, 1987 p. 42).

When working with students in goal development, it is beneficial to establish goals that reflect a definite outcome within a specific timeframe. Students frequently lean towards writing goals such as, "do well on the test", or "have more fun in FFA." Perhaps they do this out of a fear of failure. As long as the goal is vague they can mentally convince themselves of attainment, thus shielding their self-worth. Encourage students to formulate realistic, attainable, specific, time sensitive goals. One of the best acrostics used in goal formulation is the S.M.A.R.T goal method (O'Neill, 2000). When used with students, this system will not only help in the establishment of goals that are achievable, it will serve as a model which students can remember and use in future goal construction.

The S.M.A.R.T model of goal planning: **S**pecific, **M**easurable, **A**ttainable, **R**ealistic, and **T**ime-sensitive.

It is critical for the development of the student's self-worth that the goals be realistic. While it is not uncommon for students to list goals such as, "be a movie star", "win the lottery," or "be a professional athlete," youthful exuberance must be tempered with instructor wisdom in developing the type of goals which promote self-worth.

Start with basic goals which, once accomplished, will motivate the student to attempt more and hopefully even greater goals. As long as goals are cultured in an environment where success is praised, and failures acknowledged merely as temporary setbacks affording the opportunity to revisit or refine the goal, students will establish a belief in themselves which will last long after high school.

Invest in Long-Term Growth

As educators, we see a variety of students in the classroom, some are driven to succeed, others are content to wallow in mediocrity, and some seemingly resigned to a predetermined state of failure. How do we reach the seemingly unreachable? We shift focus from the short-term components inherent in the accepted motivational process, and embrace an understanding of the foundational elements to motivation.

S. M. A. R. T.

Specific
Measurable
Attainable
Realistic
Time-sensitive

All too often in education we are expected to solve problems quickly in order to demonstrate success. We are encouraged that visible outcomes are evidence of a job well done. However, when it comes to self-worth we must recognize that internal changes will precede behavioral outcomes, and often visual results will take time to develop. Working with students to affect change is a process not a production line, and at times, results may be discouraging. However, take courage in the fact that any effort expended toward increasing a student's self-worth is time well spent. Next time Joe walks into your classroom, before you reach for a carrot, remember to take the time to sow the seeds of self-worth. Cultivate a belief in oneself, and reap the rewards of motivation.

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Motivating Students Using Brain-Based Teaching Strategies

By Sarah Hileman

Learning is innately linked to the biological and chemical forces that control the human brain. While few would dispute the connection between learning and the brain, are teachers experts on the inner workings of the brain? Do you as a teacher know that most *strange* teenager behaviors that have traditionally been dismissed as "it's hormones" is actually the brain exponentially growing and maturing at the same rate as an infant's brain? Did you also know that the hormone melatonin, which is responsible for regulating sleep schedules, is typically low during the teen years, thus creating sleepy students (Jensen, 2005). What is a teacher to do? How can agricultural educators understand enough of the brain to create learning environments that are driven by naturalistic, brain-based strategies? To help answer these difficult questions, let's learn a little more about the brain by thinking through the metaphor of life in the jungle.

Learning is innately linked to the biological and chemical forces that control the human brain.

It's All About Survival

The jungle, like the brain, is active at times, quiet at others, but always teeming with life. Both the jungle and the brain are equipped with internal clocks which are influenced by light and weather patterns. The jungle thrives in its' own distinctive ecosystem where elements such as soil, air, streams, ground cover, low-lying plants, shrubs, and the forest canopy are interdependent. Similar to the jungle, the brain also has distinctive interdependent regions that organize various functions, such as thinking, sexuality, memory, emotions, breathing and creativity. While the jungle changes over time, one constant remains true: the goal is survival.

The human brain also is very concerned with survival. Do you doubt that 2.4 million years of human cognitive development and adaptation has happened in the absence of survival mode? As an example of our survival-mode learning, think for a moment about the type of things that you generally remember. Have you ever gotten food poisoning as a result of eating at a particular restaurant, and remembered to avoid that restaurant? When was the last time you forgot your way home? How about the names of your children, parents, close friends or spouse? While these questions may seem juvenile, we humans are very good at memories concerning: (1) locations – of food, housing, social contact; (2) how to do things – locomotion, defense, tool making, childcare; (3) emotional events – pain and pleasure; and (4) conditional responses – aromas and tastes. In a school setting, the goal is to use these lasting memory pathways. Did you notice what was not on the list? Word-based, names, equations, vocabulary and facts are not types of memories that we are 'automatically' good at remembering. Understanding where the brain's strengths lie is critical to successful teaching and learning in the agricultural education classroom. This belief of brain-based learning is a foundational component of teaching for motivating students to experience success in school and life.

B.R.A.I.N. B.A.S.E.D. Teaching Strategies

Brain-based or naturalistic learning considers what is natural to our brain, and how the brain is impacted by circumstances and experiences. How exactly is the physical brain designed to learn? How can teachers organize classroom instruction to meet the needs of a biological organ that is most concerned with survival? How can teachers use B.R.A.I.N. B.A.S.E.D. strategies to motivate students to learn?

Brain's Time Clock

Our bodies are affected by biological rhythms that impact pulse rate, breathing rates, memory cycles, reaction time, moods and natural attentional highs and lows throughout the day. For example, scientists have documented that we breathe through one nostril for about three hours until the tissue becomes slightly engorged; then we switch to the other side. The nostril we breathe through affects which brain hemisphere we use (typically the left hemisphere is associated with verbal

skills and the right with spatial skills). More importantly our brain cycles through attentional highs and lows every 90 to 110 minutes, so there are about 12 to 16 brain cycles over a 24-hour period. This is specifically important to teachers on block scheduling. Due to each students' unique body clock, some will be better at spatial tasks, others stronger at verbal tasks at varying times in the class period. Therefore, instructional activities including assessments should be alternately spaced throughout the class period. Important Note: This 90-minute cycle should not be confused with the idea of appropriate amount of time spent in teacher-directed instruction. To maximize learning a teacher of students in grades 9-12 should never spend more than 12-15 minutes of focused attention on passive learning.

Repetition

The simple fact is that repetition strengthens connections in the brain. Researchers have discovered that synapses are not static; they constantly adapt in response to activity. However, educators beware; repetition is a double-edged sword. On the one hand, the more an idea or skill is used the faster and more accurate we become at the particular knowing or doing. On the other hand, too much of the same thing can be boring to the learner. Using the guise of different previewing and reviewing strategies, teachers should design instructional activities that include interest approaches and formative assessments. Examples include: relevant video clips, wall posters with up-coming topics, pre- and post-quizzes, cooperative learning information sharing structures, graphic organizers, or key point rhyming one-line reviews.

Active Learning

Physical movement can be an effective cognitive motivation strategy to strengthen learning, improve memory retrieval, and enhance learners' confidence. Anatomically, the area of the brain in charge of motor control is the cerebellum. Ivry and Feitz (2000) found the cerebellum accounts for only one-tenth of the brain by volume, but it contains nearly half of all neurons (Jensen, 2005). Not only are most of our brain cells dedicated to controlling movement, but movement is a reliable way to increase blood flow, hence oxygenating the brain. Movement in the classroom can be facilitated in many forms. Krock and Hartung (1992) found that simply standing can raise heart rate by as much as 5 to 8 percent in just seconds (Jensen, 2005). Additional strategies include: goal setting on the move, student role-plays of one-minute commercials for upcoming content, ball-toss games for review, stretching, or cross-lateral movement activities.

Images

Enriched visual learning environments are important for brain-based instruction. Our eyes are capable of registering 36,000 visual messages per hour. Additionally between 80 and 90 percent of all information that is absorbed by our brain is visual. Concrete visual images that contain contrast, movement and color are particularly important in attracting learner attention. Specifically, the brain is hard-wired to identify objects that differ from a group of objects. For example, if you study the advertisements in your favorite magazine you will notice that savvy advertisers use not only vivid but sometimes shocking images to bring attention to their products. Visual instructional strategies include working models, project-based assignments, varied information mediums (e.g., videos, cameras and computers) and an assortment of art supplies. Also think about adding pictures, graphics, charts, graphs, bulletin boards and video segments to presentations and classroom environments.

Novelty

The brain's natural tendency is to learn from new or contrasting experiences. The fact that the brain is so stimulated by anything new maybe a survival response. In the 'jungle' world, anything new perhaps is threatening. Once we have become accustomed to an environment, our brain begins to operate at a lower level. Introducing novelty to the classroom, while not a new idea, is sometimes challenging. Opportunities for novelty include multisensory aromas, music, exchanging rooms with another teacher for the day, seating changes, lighting changes, and relevant real-world field trips and guest speakers.

Be Colorful

Color in the classroom is a truly powerful brain-based motivation to learn. Consider this, a study conducted by Vuontela et. al. (1999) found that when testing memory for words, objects and color, they concluded that color memory was strongest (Jensen, 2000). So what is so special about color? It has been suggested that every color has a wavelength, and every wavelength, from ultraviolet to infrared affects, our body and brain differently. In general, yellow, light orange and beige have been recommended for calming optimal learning environments. Using color handouts, overhead transparencies, colorful posters, and encouraging the use of color on student assignments are examples of being colorful.

Automatic Learning

Scientists have suggested that more than 99 percent of learning is nonconscious. In fact, as much as two seconds before our body reacts, our

brain has already decided what body parts to activate. In the context of the classroom, everything from instructor appearance to a peers' shirt color to student beliefs about a teachers credibility are at play. The enormous capacity of the human receptive mind has many implications for informed teachers of brain-based learning. Most importantly, we should be cognizant of non-verbal communication in the classroom. It is important to model a positive attitude, enjoyment of learning, provide sufficient learning resources and stimuli, develop lasting rapport with each student and provide an atmosphere of physical and emotional safety for learners.

Social Brain

Humans are social creatures, which can be seen in the fact that people are commonly very different in social settings than when they are alone. The school environment in particular provides students with approximately 13,000 hours in a highly complex social environment. The social nature of the brain lends support to the notion that working cooperatively enhances learning. While cooperative learning is an effective learning strategy, it is important to point out that high-quality cooperative learning is structured for optimal learner accountability. Johnson and Johnson (1999) suggest that effective cooperative learning includes: (1) face-to-face interactions, (2) positive interdependence, (3) group and individual accountability, (4) small-group decision making skills, and (5) meta-processing skills.

Elicit Emotions

LeDoux (1996) has analyzed the anatomy of an emotion and has concluded that emotions contribute significantly to attention, perception, memory, and problem-solving (Jensen, 2000).

Real-world problems!

For a student to internalize a new behavior or piece of knowledge they must feel that something is true before they *believe* it is true. The more intense the emotional state, the more likely we are to remember the event. Creating learning activities that purposely evoke the emotions of risk, excitement, urgency and pleasure are effective brain-based strategies. Students will remember for a long time public speaking exercises, meeting new people, debates, public performances, races, talking to a friend or helping the teacher for a day.

Developing Thinking Skills

From the brain-based perspective, teaching thinking skills is facilitated by incorporating real-world problems with authentic or closely simulated conditions in the classroom. Real-world problem solving allows the brain to do what the brain does best, make decisions that promote creative, meaningful and productive judgment. Modeling and organizing projects and activities that require higher-level thinking should be your main instructional goal when developing thinking skills in students. Allow students to gather information, conceptualize their problem, generate possibilities and encourage a public presentation of their final results.

The inner workings of the human brain are complex and diverse. Yet, the strategies that teachers can use to motivate and engage learners are relevant and practical. As teachers, we must remember to apply what we currently know about the brain to help students learn. When faced with an unmotivated student, don't brush him/her off as a student with an attitude or one with hormones. Remember the brain! Specifically, remember the B.R.A.I.N. B.A.S.E.D. strategies that will help you motivate and engage another student. In doing so, you will have reached one more student, and survived one more day in the jungle. It's all about survival.

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Making Learning Fun and Enjoyable for All Students

By Larry D. Williams

Motivating students can be a difficult task. However, it is one that must be mastered in order to provide a successful education. So often our students express that they are not interested in what is being taught in the classroom, but in actuality this may not be the case. Lack of interest may not be the problem. Rather, the content is not presented in a manner that is interesting to students, or in ways that keep the attention of the learners. As educators, it is important to understand that feeding students information is not teaching, nor does it promote motivation. If learners are not motivated, they will not be willing to learn. So the pressing inquiry is: How do we motivate students and then keep them motivated? When we motivate students, the focus should be on intrinsic motivation. This is the form that takes place within and is not altered by outside influences. Granted, educators are not able to adjust that which is intrinsic, however, they can act as promoters.

Is Your Class Fun?

Interest and enjoyment was the number one reason why high school students participated in sports, fine arts, academic students organizations (e.g. FFA), and community and church groups (Stoller & Knobloch, 2005). Ask students why they enjoy an activity, and you'll probably hear, "It's fun!" Whether or not the learner is enjoying the task, the mere act of having fun is an intricate part of both enjoyment and intrinsic motivation. When learners are involved in activities that are "fun," they experience a level of enjoyment that surpasses other levels. This is known as optimal enjoyment. Motivation would not be a problem in most classrooms if educators were able to guide students to this realm of enjoyment where learning was "fun." Intrinsically, when students are at this level of enjoyment, it's processed as pleasure. Making learning pleasurable for students is hard work, but not impossible.

What is Flow?

The idea of experiencing this optimal level of enjoyment is best explained through the research of Mihaly Csikszentmihalyi and his theory of flow. Flow is "the state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (Csikszentmihalyi, 1990, p. 4). This basically implies that when an individual is in the flow of something, at that precise moment in time nothing else matters because they are so intrinsically engaged in the activity or task. An example of this can be observed with athletes and artists as they are considered to be in the "zone" where all of the focus is on completing a goal. It's at this moment of flow that individuals are said to function at their fullest capacity. During this time, the individual in not concerned with gratification because the level of enjoyment serves as the ultimate reward (DeCharms, 1968; Deci, 1975).

Achieving flow in an instructional setting can be accomplished by using some instructional strategies that will help student get caught up in the learning experience. A few strategies are outlined for agricultural educators to create optimal learning experiences for their students.

Engage All Learners—A Prerequisite for Flow

Educators need to remember that all students are not capable of learning via the same medium. There are times when the students' learning styles may appear similar, however, they are not the same. Once teachers have uncovered the learning styles of their students (e.g., visual, audio, or kinesthetic learners), they must then establish a set of characteristics that encourages enjoyment of activities. In order to do so, teachers must identify activities that would help the students learn and create an enjoyable learning experience. When this is accomplished, it is time to create flow.

Concentration, Interest & Enjoyment

Creating flow is relatively easy once an educator has created a learning environment that will engage multiple intelligences and modalities of learners. In order for flow to occur, one must also promote a certain level of concentration, interest and enjoyment all of which has to be experienced concurrently (Csikszentmihalyi, 1997). Even though these may seem easy to achieve, there are certain steps that you must take in order to fully ensure a "flow" experience.

1. Optimize the challenge at hand.

First, the challenge at hand must be optimized. Generally, the task or activity that is to be completed should appeal to the learner's higher level of

thinking. The uses of puzzles, scenarios or word problems that require critical thinking, and/or riddles are perfect examples of optimizing the challenge.

2. Absorb the learners' attention.

Next, the educator should choose activities that will completely absorb the learners' attention. This is where the understanding of multiple intelligences plays its most important role. Educators must know what tasks will keep the attention of their learners. Regardless if your students are visual, audio, or kinesthetic learners, the activity should cater to all and retain their attention for an ample amount of time.

3. Communicate clearly obtainable goals.

Another important application tool that should be practiced is making sure the activity has clear goals that are obtainable. Many times educators tend to unknowingly challenge the learners too much. In an effort to make sure that the goals are clear, the language used during the presentation of goals should be clear to the students as well. Occasionally, the use of "big words" will serve as a deterrent for most students. Keeping goals and objectives simple is best when attempting to promote flow.

4. Promote autonomy of learners.

Activities should also be chosen that sanction complete control for the students. Autonomous learners feel as if the task or activity belongs to them. A good way to promote autonomy and control is to allow individual or group work. If group work is more appropriate, be sure that tasks and responsibilities are evenly disbursed and best matched to learners' abilities so that all students are given the opportunity to achieve flow.

5. Provide positive feedback.

Now this may be one of the most valuable forms of application. It is absolutely imperative that educators provide positive feedback. Part of the learners' enjoyment will come from positive praise and reinforcement from the educator. Expressing to the learners that they are on task, making appropriate physical contact (e.g., pat on the back, handshake, or high five), and commending satisfactory work all serve as forms applicable praise or positive feedback. Even though times have changed, students are still receptive to praise.

When it comes down to different types of learners, it is understood that each will be self-conscious concerning certain areas of learning. This is why providing positive feedback is most vital when upholding the process of promoting flow. It is extremely important for educators to know their students' strengths and weaknesses to ensure that the activity selected caters to their strengths rather than their problem areas (Csikszentmihalyi, 1996). If all of these strategies are executed correctly, students will be motivated to learn and flow will be achieved.

Let's Get in the Flow!

Educators across the nation struggle with motivating all their students to learn. Because there are different styles of learning, one must be able to alter and adapt the learning activities to fit each learning style. Absorbing the idea that learning is fun attracts the learner, and helps to achieve the optimal level of enjoyment. The level of enjoyment in itself is a reward in its own right. Once students have experienced flow, they are intrinsically motivated, their skills are heightened, and they are better able to meet academic challenges. Have you ever had one of those awesome days of teaching? Wasn't it a great feeling? What was learning like for the students on that awesome day? Keeping these strategies in mind, educators should get into the flow of teaching so that their students get into the flow of learning.

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Motivating Students Through Service Learning

By Benjamin G. Swan

I approach preparing for each course thinking of two things: How can I accomplish the course objectives as efficiently as possible? And what will this class be like from the students' perspective? When I think of efficiency, I get to the point, and work on making sure everyone is with me. When I think of the students' perspective, I put myself in their shoes and visualize everything I am asking myself as the student to do. Will the tasks be boring or exciting and engaging? Will the tasks be challenging, too easy, or too difficult?

Teaching Leadership through Experiential Learning

This past Spring quarter, I taught the Fundamentals of Leadership course at the Ohio State University, Agriculture Technical Institute in Wooster, Ohio. As I looked through the soft back textbook, within the first several pages, the author made a huge point that leadership needs to be practiced, not just talked about, if we are to learn anything. There's no doubt that leadership is a very interesting area to study, but the more I prepared to teach the course and looked at the chosen textbook, the clearer it became that we cannot teach leadership out of that textbook alone. We must have a common experience that we can discuss and provide opportunities to reflect.

Community Service Project

The purpose of this article is to share my experience of creating something that really developed a rallying point for our class and unified our campus. As the class began and we perused the course syllabus, I introduced our community service learning project which was 20% of the course grade. The class included 18 students

The specific project had not yet been determined. The students were informed it was up to them to come up with options. I shared that if they came up with ideas and agreed on one project through the democratic process, the buy-in would be much higher by their classmates.

The following sections outline the steps that were taken to complete the community service project.

Visioning

We spent half of the second period on a very important task. The students shared their visions of what their campus needed or lacked. Ideas emerged such as campus unity, student government recognized by OSU's main campus, outdoor classroom area, outdoor eating area, agriculture in the classroom, and working with a nearby teenage halfway home.

As these ideas became clear, I questioned the true need of each idea. I asked them to look at the list and consider how will the student body of around 1000 students benefit and can we actually accomplish the task in 10 weeks?

It was decided that we could develop a single place that could serve as an outdoor place to eat, have class, and have a place that could encourage people on campus to socialize, improving unity. The students were really fired up because they could actually see the project making some sort of positive impact on their campus. It would be a gift left for the staff, faculty, and next year's students.

The location, cost, and tasks needed to be determined for the project to be completed. The Buckeye spirit of these Ohio natives came through as the design of the project was in the shape of the football stadium – the Horse Shoe! Several students began to salivate and came up with another great idea, laying brick in the shape of the Block O, centered in the middle of the HorseShoe. We were well on our way!!

Getting Motivated: Divide and Conquer

We broke the project into larger task areas: Landscaping, Financing, Materials, Planning, and Public Relations. We discussed building on strengths, encouraging collaboration, and the actual motivation of their behavior. Students self selected the groups. No doubt the turf management students went into landscaping. As the groups formed, the larger tasks were broken into smaller, attainable tasks, with time frames. The landscapers met with the grounds staff, the financial group met with the housing committee and administration for donations, the materials group got many local donations, the planning committee met with the dean of students and other administrators to get permission through all of the proper channels, and the public relations committee met with on campus organizations recruiting donations and laborers. In addition, the public relations took care of thank you letters.

As the quarter progressed, the last 20 minutes of each class period

Not a single person ever asked "what is my grade on this assignment?"

was devoted to our project. We would meet in groups and then meet as a larger group to get coordinated. Students did a lot of leg work between class sessions and report back the next class session. Our actual monetary donation goal was met and tripled. The overflow was placed in the Ag. Ed. Society's account for maintenance and upgrades for campus projects.

Reflection

The students began the term by developing their own personal leadership philosophy. By sharing with me their beliefs and how they had arrived at them, I challenged them to be considering any changes throughout the quarter. The students turned in their edited personal Leadership Philosophy as we gathered at the newly completed project at the end of the quarter. Not a single person ever asked "what is my grade on this assignment?" Their apparent behavior had to do with the enjoyment of working hard for something bigger than themselves. The motivation was intrinsic as I would have to ask students to go to class or go home. This is consistent with the research on service learning. Students who were engaged in service learning were more engaged in their studies and were more motivated to learn (Billig, 2000).

Students and myself had to be trained and safety-certified to operate campus all terrain vehicles to move materials. After several full days over the last 2 weeks of the term, several ton of sod was removed as several ton of gravel filled the new borders, precisely laid brick was installed, and even a couple of railroad tie planters were built. The project was completed.

Celebration

For the last class meeting, instead of meeting in our classroom, the students and I gathered at the newly completed project with the administrators, staff, faculty, and students to present them their new gift! After the dedication ceremony, the students and I sat around the Horse Shoe, had some pizza, and reflected on their project experience and what they had learned about leadership through their project.

The Rewards of Service Learning

We most definitely had a common experience that was challenging and not easy. The task was not too hard, but definitely engaging. Serving the campus community was an awesome experience that provided many opportunities to discuss and reflect on our relationships and motives, specifically getting others to act in a positive way. This was a learning experience about leadership and motivation, whether it involved getting students to move forward, students getting each other moving, or students getting key people around campus to participate.

Just as amazing as completing the project, was the realization that we could take some brainstorming visions from scratch and bring them into reality. The fact that the Horse Shoe became the beginning of the campus' new memorial grove for students lost through tragedy is truly touching and makes it that much more rewarding. The entire campus community was thrilled with what was accomplished.

A New Classroom to Motivate Students

What community service projects can your students envision that ties your curriculum to real needs in the community? I encourage you to take a chance and dare to do something important on your campus and in your community. Of course there were points where the project could have easily failed, but with the teacher's leadership, the students will rise to the occasion and make everyone proud. Public high schools encouraged student involvement in service learning to help their students become more active members in the community, increase students' knowledge and understanding of the community, and facilitate learning opportunities to meet real needs and build relationships within the community (Skinner & Chapman, 1999).

If we are preparing our youth to serve, we must give them opportunities to engage with their community when they are young and full of energy. Agricultural education is a community-based program, yet how often does the community serve as the classroom. Agricultural educators should use service learning as an instructional method to motivate students to learn in a new classroom—the community.

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Motivating Teachers and Students Through a Placed-Based Experience

By Mike Martin

A critical component of successful teachers is the ability to motivate and improve their students. Sometimes teachers need to be inspired by motivating experiences to help them develop similar opportunities for their students. But where do teachers find their inspiration? For a group of student teachers in agricultural education students, inspiration came from a field trip—a place-based learning experience at three unique Pennsylvania agricultural education programs. The student teachers, who are now high school agriculture teachers, visited the Milton Hershey School, Conrad Weiser High School, and W.B. Saul High School. Each of these schools has unique agricultural education programs that served as models of innovation for these student teachers. This trip changed the way these beginning teachers think of the profession and their classrooms. The experience inspired them to, proverbially speaking, "think outside of the box."

Placed-Based Education

Place-based education is a relatively new term that builds on much older philosophical roots. Placed-based education combines ideas such as constructivism, experiential education, and problem-based learning. The basic concept of place-based education centers on a place, which provides a specific context for learning (Gruenewald, 2003). The place-based learning experience that inspired these student teachers centered on the three schools in Pennsylvania, and was grounded on the key components of placed-based learning such as being experiential, connecting the students to the community, and the content being focused on a specific location's social, political, and economic characteristics (Woodhouse & Knapp, 2000).

Milton Hershey School

The first stop on the four-day trip was the Milton Hershey School in Hershey, PA. The private school serves a diverse population of over 1,300 students, from 28 states, all of whom have some social and economic need. The backbone of the Agricultural and Environmental Education (AEE) Program is the use of the School's land-related resources….. located on 1,000 acres of land (Milton Hershey School, 2005, n. p.). The use of land laboratories as a hands-on classroom inspired one student teacher in particular. Lauren Bates, agriculture teacher at Heritage High School, found interest in the orchards and gardens set up for the students to learn using hands-on methods in environmental and agricultural education. Lauren was so inspired about this experience that she started working with Heritage High School to create these same types of orchards and gardens at their school. She believed that if this method worked for non-traditional agricultural students, then it would work for her school as well (Personal communication,11/12/05).

Conrad Weiser High School

The second stop of the journey was the Conrad Weiser High School in Robesonia, PA. The school's agricultural program is comparable (or better) to some community colleges and small universities in its facilities and academic rigor. The agricultural education program even includes an agricultural library room, where students in the upper-level classes conduct advanced research projects in a wide arrange of topics. This attention to academic rigor and learning inspired Cherie Rogier of Okaw Valley High School. She compared her experiences in school to that at Conrad Weiser, and what she now envisions for Okaw Valley. Cherie explained, "The level of agricultural science taught at Conrad Weisner is amazing. The curriculum I saw being taught is content I learned as a sophomore in college. It has motivated me to emphasize more science content in my agricultural science course" (Personal Communication, 11/11/05).

Sarah Tweet, agriculture teacher at LaSalle-Peru High School, had much the same experience at Conrad Weiser. Sarah's current program at LaSalle-Peru has three agricultural mechanics courses, but she and her administration want a more scientific agricultural education curriculum. She wants to utilize the science-based curriculum model of Conrad Weiser and apply it to her school agricultural program (Personal communication, 11/15/05). Cherie and Sarah's placed-based learning experience inspired them to think beyond what is normally a high school agricultural education program and created a new vision for their agricultural education programs.

W. B. Saul High School

Finally, the group visited the W.B. Saul School in the heart of Philadelphia. The school has quite a unique

campus, considering its location within a major urban center. The 200-acre campus possesses a small animal laboratory buildings, meat science program, school golf course, apiaries, dog kennels, and working farms (W.B. Saul High School, 2005). W. B. Saul is the largest agricultural program in the United States and largest FFA chapter in the world. The size of school left an impression on Cherie Rogier, but more importantly she was fascinated by the non-traditional agriculture students who interested in agriculture. One commonality in many of their agricultural classrooms was the hands-on learning that occurred. The instructors also gave students responsibilities in caring for many of the plants and animals at the school. This created interest and pride among the students as they internalized the curriculum.

A New Opportunity for Students

The whole trip was an immense learning experience for all those involved. Jennifer Herman, agriculture teacher at Jacksonville High School, described her experience on the four-day trip in relation to her current program. "The exposure to urban agriculture programs also allowed me to evaluate the traditional curriculum that is used in many rural agriculture programs…. In addition to this experience, I have participated in the Urban Agriculture Programs Conference and met with teachers nationwide who share a similar interest and passion for teaching agricultural education. These conferences have expanded my knowledge of agricultural education and provided the opportunity to network with others."

Jennifer plans to give students a similar experience she had as a college student. "Our chapter is also planning to participate in the Adopt-a-Chapter Program through the Facilitating Coordination for Agriculture Education in Illinois to send our students to an urban program for a few days and invite urban students to come to our school during this time as well. I am now more comfortable with this idea and look forward to the experience and the opportunity to expose my students to these urban programs that have been able to see. Traveling on the trips has allowed me to learn more about programs in my state as well as others that I can utilize in my own classroom and to give experiences to my students as well" (Personal communication, 11/15/05). Jennifer's inspiration from seeing the unique agricultural education programs first-hand has provided her the insight to create new opportunities for her own students. Agricultural educators who are inspired by real-life experiences are more likely to try to create opportunities to replicate them for their students (Neil Knobloch, personal communications, 11/21/05).

Get Outside of Your Comfort Zone

Place-based curriculum theorists argue that the placed-based education should aim for critical reflection and change for its students (Gruenewald, 2003). This was true for the four student teachers who experienced this inspirational field trip. It was a chance for them to reflect on their experience as a student teacher and to rethink the possibilities of their future programs. The place-based experience gave them inspiration to think outside the box—a conventional agricultural education program. These student teachers, now beginning teachers, were inspired to make lasting impacts on their local communities, school, and students through innovative ideas and effective teaching strategies.

Agricultural educators should step outside of their comfort zones and travel to new places and experience cultures that "do things differently." Radically different experiences can inspire and provoke innovative ideas. New places can inspire new ideas. New ideas can inspire and motivate students to learn and develop in ways they would not have had the opportunities to do so, expect for their agriculture teacher who was willing to step outside the comfort zone and be jolted into out-of-the-box thinking. What have you done recently to inspire new ideas for your program? You might need to get out your trip planner and organize an itinerary that will get you outside of your comfort zone and open your mind to an unknown world of new thinking about your agricultural education program.

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ReSolutions for Action: Motivating Students to Learn

By Jennifer E. Rivera

At the last North Central Region Agricultural Education Research Conference, the research special interest group brainstormed ways to better communicate research findings of the profession. If a major goal of research in agricultural education is to improve practice in the profession, how can we ensure that research-based solutions are translating into actions and being applied in all aspects of agricultural education? Hence the name, *ReSolutions for Action (RFA)*. It is with hopes that this section of *The Agricultural Education Magazine* will foster and promote ways to highlight current research findings to inform action.

RFA #1: Motivate Rural Youth by Knowing their Aspirations

Many disparities exist between the aspirations of rural youths and urban youths. What are some of the aspirations identified in rural youths and what are some supports and barriers identified to achieving these aspirations? According to a study conducted in northwest Iowa, Bajema, Miller, and Williams (2002) found that the educational aspirations of a majority of rural students in the sample included participation in post-secondary education. Occupational aspirations indicated by most rural students included pursuing a job in health, management, and education. Supports for educational and occupational aspirations noted were the relevance of what they had learned in school compared to everyday life, safety felt in school, and the student-teacher relationships established. Some barriers to achieving educational and occupational aspirations were lack of money for education and lack of knowledge of career opportunities. Based on the findings of this study, researchers suggest agricultural education programs emphasize careers in agriculture, and preparing students for leadership, business, and scientific occupations. Partnerships between agricultural education programs and agricultural businesses may offer opportunities for rural students to learn more about their career options beyond high school. A complete read of the study can be found in the *Journal of Agricultural Education* at: http://pubs.aged.tamu.edu/jae/.

RFA #2: Know Your Students and Use Methods that Promote Interaction

What do agriculture college students say motivates them to learn? In a study done at Kansas State University, Mankin, Boone, Flores, and Williard (2004) sought to answer this question. They developed a questionnaire consisting of questions related to teaching styles, classroom environment, grading methods, and assignment types. Based on the responses from students, the authors stated that the most motivating characteristics contributing to learning were: (1) an enthusiastic and interesting teaching style, (2) an interactive classroom environment, (3) fair grading methods, and (4) assignment types that provide experiences relevant to the profession. Mankin and colleagues also found that students with a higher grade point average were more goal-oriented and intrinsically motivated. They favored classroom interaction, group discussions, and frequent assignments. This was in contrast to those students with a low grade point average that were motivated by more extrinsic factors such as small classes and hands-on assignments. A complete read of this study can be found in the *North American Colleges and Teachers of Agriculture Journal*, December, 2004 (http://www.nactateachers.org).

Take Home Message

Motivating students to learn is an important element of the teaching and learning process. Although there were many more studies to choose from, the summaries provide insight into student motivation within agricultural education settings in high school and college classrooms. Motivating students to learn increases the students' desire to participate in the learning process. It plays concern with how interested students may be to learn. Sources of student motivation differ among students, contexts, and tasks. By knowing how to address motivational needs of students, teachers can enhance teaching and learning.

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