

Don't Lecture Me! Motivating Agriculture Students to Learn

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Abstract

The October 27, 2000, issue of the *Chronicle of Higher Education* emphasized that one of the nine inevitable changes in higher education is the shift from focus on teaching to focus on learning. Thus, understanding what motivates students to learn may provide teachers insights into elements of the learning process over which the teacher may have some control. Students in the College of Agriculture, Kansas State University, were asked to identify specific teaching styles, classroom environments, grading methods, and assignment types that motivated them to learn. Overall, the most motivating characteristics in each category were an enthusiastic and interesting teaching style, an interactive classroom environment, fair grading methods, and assignment types that provided experience relevant to the profession. The most-cited factor reducing motivation was a long, boring lecture. Students with higher GPAs tended to be more goal-oriented and internally motivated; they preferred more interaction and discussion, a clear grading system with high expectations, and frequent assignments. In contrast, students with lower GPAs were motivated more by external factors, such as the instructor's enthusiastic presentation, small classes, and hands-on assignments. Clearly, no single method can be used to motivate all students. However, this study identified many approaches an instructor can take to motivate students to learn.

Introduction

The shifting focus in higher education to learning from teaching (Levine, 2000) illustrates the need to understand what motivates students to learn. Motivation is central to student learning but has always been a challenge for teachers, because students enter the classroom with diverse backgrounds, interests, experiences, and learning styles. Certain motivational factors are at least partially under teacher control, while others rest solely with the student or are out of the control of both, such as physical facilities. For this paper, the authors concentrated on the areas over which teachers have some control.

Teacher characteristics have been found in previous research to be related to student motivation. Brophy (1987) writes that teachers who are energetic and excited about the subject

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motivate students by spreading that enthusiasm and interest to them. In addition, teachers who motivate are respectful and positive with students, challenge them, make students feel welcome and valued, and state their expectations clearly (Damico & Roth, 1994; McKeachie, 1994; Ornstein, 1993).

Some of the intrinsic factors motivating students are a sense of competence and achievement (McKeachie, 1994). Students perform best when they can develop their own unique strengths (Ornstein, 1993). These factors demonstrate the need for activities to be located at the appropriate academic level so that the student is challenged and concurrently has the opportunity to be successful (Meece, 1991), which relates to a need to feel competent (Deci & Ryan, 1991). Other intrinsic needs identified as motivational factors include the needs for senses of belonging and control (Deci & Ryan, 1991).

Other sensory issues related to motivation include safety and security. Students who feel free to be creative and to take risks without being punished, like those who are willing to interact in the classroom discussion even if their answer is wrong, are more motivated to learn (Deci & Ryan, 1991). In addition to safety, students find motivation through a sense of fair treatment (Wankat & Oreovicz, 1993).

Both teacher and student characteristics interact to create a motivational learning environment. From a review of the literature on motivation, McCombs (1996) suggests that motivation to learn arises from both external supports and internal processes. Internal processes include the need to feel in control, competent, and connected to others. Additional internal processes are finding the activities of the course to be personally interesting, fun, meaningful, and relevant. The external supports are teachers who help the students see the relevancy of activities, give students choice and control; provide them with the personal skills or resources needed to be successful; and give them support including help, respect, and encouragement (McCombs, 1996). Several authors echo the need for students to feel that they have a voice in their own learning process (Damico & Roth, 1994; Farges, 1993; Wiggins, 1992; Ornstein, 1993).

Purpose and Objectives

Although general information about motivating students is known from the literature, little information is available about specific attributes found as motivational. Thus, this study was conducted to identify, from the student perspective, specific characteristics and activities that motivate students to learn in the College of Agriculture at Kansas State University. The objectives were to determine 1) what teaching styles, classroom environments, grading methods, and assignments best motivate these students to learn, and 2) whether or not these results differed by student grade point average (GPA) and/or year of study.

Materials and Methods

This study used qualitative data collection and analysis methods. The goal of qualitative studies is not to be generalizable to a larger population, which is often a goal of quantitative studies. Instead, the emphasis is on understanding the phenomena through collecting richer data

that are poorly represented by numeric interpretations (Patton, 1990). With input from faculty and students, a qualitative questionnaire was prepared to solicit responses from students regarding attributes that motivate their learning. Questions related to the constructs of teaching style, classroom environment, grading method, and assignment types. For each construct listed in the preceding sentence, students were asked to identify a teacher at Kansas State University who motivated them and to specify the attributes that motivated them. Two additional questions asked students to identify other factors they found to be motivational and specify classroom experiences that did not motivate them. The students self reported year in school and GPA. The questionnaire was field tested prior to use and modified based on those results.

Faculty from each of ten departments and undergraduate programs in the College of Agriculture administered the questionnaire in one or more classes. Classes with a diverse group of students from different disciplines, ages, years in school, and GPAs were chosen. In total, 642 students completed and returned the questionnaire. For comparison, enrollment in the College of Agriculture was 2,074 students at the time of the study.

Data from the responses were coded by themes as they emerged from the data, a coding concept from grounded theory methodology (Glaser & Strauss, 1967). Keywords, phrases, and concepts were first identified among the data. The authors then formed themes. Following appropriate methods of analysis for qualitative data, thematic conceptual matrices were developed and are presented in the tables in this paper (Miles & Huberman, 1994).

Data also were analyzed based on GPA and year in school (student rank). Role-ordered matrices were used to analyze these data (Miles & Huberman, 1994). The authors note that, because the data were collected in Fall Semester 1998, most of the freshmen surveyed reported that they did not have a GPA yet. Therefore, they were omitted from any analysis based on GPA.

Analyzed data were shared with a student panel during the Spring Semester in 1999 for a member check to validate the findings (Lincoln & Guba, 1985).

RESULTS AND DISCUSSION

Results are discussed below. Tables present these data as well. Table 1 presents data related to motivational aspects of in-class factors, including teaching style and classroom environment. Table 3 summarizes findings regarding out-of-class factors of assignment types and grading method. Tables 2 and 4 group in-class and out-of-class factors, respectively, by student rank and GPA category. Comments within the tables are numbered with consistent numbers associated with each comment.

Teaching Style

Enthusiastic and interesting teaching styles were important to almost all of the students (see Table 1). The instructor's ability to "explain well and teach to different learning styles" was generally viewed as important as well. The teacher's ability to be "organized" and use "real-life examples" to make the material relevant also were important. The willingness of the teacher to be "helpful, caring, and interested" in the student was important to nearly all of the students

Table 1

Thematic Conceptual Matrix of Motivators related to In-Class Factors

In-Class Factor	Theme	Illustrative Quotes
Teaching Style	1. Enthusiastic, interesting	“They are excited and extremely knowledgeable about their field.”
	2. Helpful, caring, interested in students	“She cares about student’s learning, knows when the class is ready to move on.”
	3. Explains well, teaches to different learning styles	“She takes time to thoroughly explain information and is good at figuring out when students don’t understand.”
	4. Uses real-life examples	“She uses lots of examples and real-life applications, so you will know the info and be comfortable with its use.”
	5. Organized	“Well-organized on PowerPoint”
	6. Interactive, promotes discussion	“He has a lot of group activities that are conducive to learning.”
Classroom Environment	1. Interactive with discussion	“Interaction – students as leaders.”
	2. Small classes	“The instructor can look everyone in the eye and make them part of the discussion.”
	3. Relaxed, laid-back, comfortable	“Instructor creates a relaxed environment yet requires individual participation.”
	4. Hands-on	“You are more into the class if you are applying what you are learning.”
	5. Humorous, fun	“They are always fun and positive, full of energy that rubs off on the students.”

questioned. Enthusiasm was particularly important to lower-GPA (<3.0) students (see Table 2). “Interactive” and “promotes discussion” were important to seniors with higher GPAs (>3.0).

Overall, the teaching attributes that motivated students seemed to apply across student categories. However, the preference toward interaction and discussion was stronger for students of higher rank and higher GPA, who perhaps have more self-confidence in their knowledge and feel their contributions are valuable in the classroom; lower rank, lower GPA students were less motivated by this mode of teaching. Also, lower-GPA students tended to place more importance on teachers’ enthusiasm and ability to make the subject interesting to the students. That is, students of lower rank and lower GPA tended to place a higher premium on teacher enthusiasm. Both these trends revealed that the higher-GPA students tended to be more internally motivated and the lower-GPA students tended to rely more heavily on methods of external motivation from the instructor.

Table 2

In-Class Motivators Grouped by Student Characteristics

Teaching Style by Rank	GPA Category	
	>3.0	<3.0
Seniors	<ol style="list-style-type: none"> 1. Enthusiastic, interesting 2. Helpful, caring, student focused 3. Explains well, teaches to different learning styles 4. Uses real-life examples 5. Organized 6. Interactive, promotes discussion 	<ol style="list-style-type: none"> 1. Enthusiastic, interesting 2. Helpful, caring, student focused 3. Explains well, teaches to different learning styles 4. Uses real-life examples 5. Organized
Juniors	<ol style="list-style-type: none"> 1. Enthusiastic, interesting 2. Helpful, caring, student focused 3. Explains well, teaches to different learning styles 4. Uses real-life examples 5. Organized 	<ol style="list-style-type: none"> 1. Enthusiastic, interesting 2. Helpful, caring, student focused 4. Uses real-life examples 5. Organized
Sophomore	<ol style="list-style-type: none"> 2. Helpful, caring, student focused 3. Explains well, teaches to different learning styles 4. Uses real-life examples 	<ol style="list-style-type: none"> 1. Enthusiastic, interesting 3. Explains well, teaches to different learning styles 4. Uses real-life examples 5. Organized
Freshmen (no GPA)	<ol style="list-style-type: none"> 1. Enthusiastic, interesting 2. Helpful, caring, student focused 3. Explains well, teaches to different learning styles 4. Uses real-life examples 5. Organized 	
Classroom Environment by Grade		
Seniors	<ol style="list-style-type: none"> 1. Interactive with discussion 3. Relaxed, laid-back, comfortable 	<ol style="list-style-type: none"> 2. Small classes 3. Relaxed, laid-back, comfortable 4. Hands-on 5. Humor, fun
(table continues)		

Juniors	1. Interactive with discussion 3. Relaxed, laid-back, comfortable	2. Small classes 3. Relaxed, laid-back, comfortable 4. Hands-on 5. Humor, fun
Sophomore	1. Interactive with discussion 5. Humor, fun	1. Interactive with discussion 2. Small classes 3. Relaxed, laid-back, comfortable
Freshmen (no GPA)	1. Interactive with discussion 2. Small classes 3. Relaxed, laid-back, comfortable 5. Humor, fun	

Classroom Environment

The most common responses are summarized in Table 1. The areas of classroom environment commonly noted among respondents were interactive with discussion, small class size, relaxed atmosphere, hands-on, and use of humor. Students with higher GPAs (>3.0) more often identified an “interactive” classroom environment as motivating, though all groups did note the importance of interactivity (see Table 2). More lower-GPA students (<3.0) identified “small classes” and a “hands-on” classroom environment as motivating. In addition, “small classes” were identified by freshmen as motivating, perhaps because they help with the transition from the high-school environment. An environment most often referred to as “relaxed” or “laid-back” was identified consistently as motivating. Finally “humor” was cited more often by lower-GPA students.

Although responses to this question did not show trends within the student-rank categories, trends often were exhibited in the GPA categories. Most often these trends seemed to indicate that environments encouraging student participation, discussion, and interaction motivated the higher-GPA students. By contrast, the lower-GPA students were motivated by environments that were hands-on with more entertainment and had fewer numbers of students in the class.

Assignment Types

In general respondents indicated preferences for assignments that were relevant to the profession, hands-on, challenging, with a clear application to the class, helpful in preparing for exams, and frequent. The most common response themes are summarized in Table 3. Factors associated with GPA and student rank are presented in Table 4. Students clearly identified assignment types with “real-life” application and “relevance to the profession” as the most important motivating factors, and this was particularly evident among lower GPA students (GPA <3.0). “Hands-on” and “challenging” assignments were cited uniformly across student rank but more frequently among lower-GPA students. Assignments that “fit the class material” and “prepare for exams” were found to motivate higher GPA students. “Frequent assignments” were preferred by more juniors and seniors and higher-GPA students.

Table 3

Thematic Conceptual Matrix of Motivators related to Out-of-Class Factors

Out-of-Class Factor	Theme	Illustrative Quotes
Assignment Types	1. Real-life assignments, relevant to profession	“We had the toughest problem imaginable. When we handed it in, we knew we could do it in industry.”
	2. Hands-on	“His assignments are hands-on, where we do independent team research of a corporation.”
	3. Challenging	“(Assignments) are challenging, yet let the students decide how and what to do.”
	4. Fits material, applies to class	“Assignments back up what is taught in class.”
	5. Prepares for exam	“Assignments go hand-in-hand with tests.”
	6. Frequent assignments	“The weekly assignments motivate me to keep up.”
Grading Methods	1. Fair	“Tests and assignments representative of what was learned.”
	2. Partial and extra credit, reworks	“Has extra credit that helps you correct earlier errors.”
	3. Higher grading scale	“Higher expectations than normal, i.e.[sic], 92% for an A.”
	4. More often or weekly quizzes	“Tests every Friday to keep you on track.”
	5. High expectations, challenging	“Higher expectations than normal make you study more.”
	6. Variety of graded work	“Variety of assignments, not just tests because you may not be a good test taker.”
	7. Clear grading system	“Structure so students know exactly where the grade comes from with good spread of points.”
	8. Optional final exam	“Optional final if student is satisfied with grade prior to final.”

The students preferred assignments that provided real-life experiences. Instruction that clearly related the work to realistic situations was valued by the students. The students indicated that they were motivated by frequent and challenging assignments that help them do well in the class and prepare them for careers.

Grading Method

The most commonly cited characteristics are summarized in Table 3 and include descriptors such as fair, extra credit offered, higher and clear grading scale, more frequent quizzes, higher expectations, variety of assignments, and optional final. Many motivating concepts were described here, reflecting the great diversity in both instructor grading options and student preferences. A “fair” grading system was found to be important to all students. Lower-GPA students identified “partial and extra credit or reworking assignments” as motivating (see Table 4). A “higher grading scale” was found to be important to freshmen and sophomores but was not very important to other juniors and seniors. In contrast, a grading method that has “high expectations” and is “challenging” was mentioned as motivating to juniors and seniors but was not mentioned at all by freshmen and sophomores. “More frequent or weekly quizzes” was cited as motivating by all categories of students. A “clear grading system increased in importance to higher GPA students. A “variety of graded work” was the motivating factor most commonly cited by the sophomores questioned. An “optional final exam” for students with an A or who are satisfied with their cumulative grade was cited as being motivating by higher-GPA students. Freshmen generally preferred a “curve” over “no curve,” although neither method was identified as motivating by other class ranks. When these students used the term “curve,” they were not referring to a statistical bell-shaped curve to distribute grades but to the use of additional points to increase the class average. This point was clarified by the student panel that reviewed the findings.

Throughout many of the responses, a common theme emerged that students wanted to be treated, as they see it, fairly. This was reflected directly by responses in the “fair” category and indirectly in many of the others. A “clear grading system” sets expectations up front in a fair way; and an “optional final exam” appears fair particularly to students who have met expectations throughout the course (i.e., higher-GPA students). Students also were motivated by being given choice and control. This was reflected in an “optional final exam,” which gives students some choice in their education, as well as in the “variety of graded work,” which provided them with a measure of control over their grades. Finally, juniors and seniors seemed to be motivated by “high expectations,” whereas lower-rank students preferred “higher grading scales.” Comments by respondents indicated that both of these factors motivate by encouraging students to study harder.

Experiences that are not motivating to students

To a degree, the students’ responses about classroom experiences that do not motivate them reinforced the comments to other questions. “Long, boring lectures” was an overwhelming response as something that was not motivational, regardless of GPA or class rank, but notably for freshmen and sophomores, who tend to have more large-lecture classes. “No interaction or discussion” was cited as not motivating by higher-GPA students (>3.0), but it also appeared as

Table 4

Out-of-Class Motivators Grouped by Student Characteristics

Assignment Types by Rank	GPA Category	
	>3.0	<3.0
Seniors	<ol style="list-style-type: none"> 1. Real-life assignments, relevant to profession 2. Hands-on 4. Fits material, applies to class 5. Prepares for exam 6. Frequent assignments 	<ol style="list-style-type: none"> 1. Real-life assignments, relevant to profession 2. Hands-on 3. Challenging
Juniors	<ol style="list-style-type: none"> 1. Real-life assignments, relevant to profession 2. Hands-on 4. Fits material, applies to class 5. Prepares for exam 6. Frequent assignments 	<ol style="list-style-type: none"> 1. Real-life assignments, relevant to profession 2. Hands-on 3. Challenging
Sophomore	<ol style="list-style-type: none"> 1. Real-life assignments, relevant to profession 4. Fits material, applies to class 5. Prepares for exam 	<ol style="list-style-type: none"> 1. Real-life assignments, relevant to profession 2. Hands-on 3. Challenging
Freshmen (no GPA)	<ol style="list-style-type: none"> 1. Real-life assignments, relevant to profession 2. Hands-on 3. Challenging 	
Grading Method by Rank		
Seniors	<ol style="list-style-type: none"> 1. Fair 4. More often or weekly quizzes 5. High expectations, challenging 7. Clear grading system 8. Optional final exam 	<ol style="list-style-type: none"> 1. Fair 2. Partial and extra credit, reworks 4. More often or weekly quizzes 5. High expectations, challenging
Juniors	<ol style="list-style-type: none"> 1. Fair 4. More often or weekly quizzes 5. High expectations, challenging 7. Clear grading system 8. Optional final exam 	<ol style="list-style-type: none"> 1. Fair 2. Partial and extra credit, reworks 4. More often or weekly quizzes 5. High expectations, challenging
Sophomore	<ol style="list-style-type: none"> 1. Fair 4. More often or weekly quizzes 6. Variety of graded work 7. Clear grading system 8. Optional final exam 	<ol style="list-style-type: none"> 1. Fair 2. Partial and extra credit, reworks 3. Higher grading scale 4. More often or weekly quizzes 6. Variety of graded work
Freshmen (no GPA)	<ol style="list-style-type: none"> 1. Fair 2. Partial and extra credit, reworks 3. Higher grading scale 4. More often or weekly quizzes 	

not motivating for freshmen as well. “Lecturing straight from the book or overheads” also was mentioned as not motivating by most student categories. “Unfair grading” was mentioned by most student categories, reinforcing the comments about fair grading in an earlier question, but seemed slightly more important to higher-GPA and juniors and seniors.

Conclusions

As a qualitative study, numerous factors were identified in this study that would not have emerged with a strictly quantitative approach, but additional quantitative work would much more clearly identify the contribution of variables to motivational factors. Follow-up studies would be helpful in this arena.

The preference toward interaction and discussion was stronger for students of higher rank and higher GPA, who perhaps have more self-confidence in their knowledge and feel their contributions are valuable in the classroom; lower rank, lower GPA students were less motivated by this mode of teaching. This distinction should be considered in adoption of any teaching method that increases student participation, such as the cooperative learning methods.

It was interesting to note that the lower-GPA students were motivated by hands-on environments with more entertainment. This finding reinforces the idea that higher-GPA students are more internally motivated and lower-GPA students are more externally motivated in the classroom environment. The finding that lower-GPA students expressed preference for classes with fewer numbers of students may also relate to confidence.

Clearly, these students wanted assignments that provide real-life experiences and for instructors to help them see the tie between their assignments and professions. This may be even more critical for lower-GPA students, who may have more difficulty making connections between theory and practice. Hands-on activities may also help build this tie for the lower-GPA students. Higher-GPA students were motivated by class material that related to assignments and exams that resulted in grades. These students may be more results oriented, and grades are the most easily identified results. Fairness in grading, choice, and control all were cited heavily by the students in this study as motivational factors.

By acknowledging and addressing the factors that motivate students, as well as specific groups of students, an instructor can enhance learning by creating environments and opportunities that are inherently motivational for the range of student types found in typical agriculture classes. Clearly, no single teaching style, classroom environment, grading method, or assignment type motivates all students. However, students can be motivated or not by some decisions directly under the instructor’s control.

The results summarized in this paper may help instructors focus on the motivational impacts of specific teaching, classroom, grading, and assignment techniques on different types of students. In essence, one method to help us become more motivational teachers of agriculture may be to ask students directly.

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