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**New Technologies  
and  
Innovations  
in  
Agricultural Economics  
Instruction**

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# How To Liven Up Instruction

Robert W. Taylor\*

Livening up instruction has more to do with making the class interesting to the students than it does with telling jokes. The use of computers to make learning easier and more relevant is clearly livening up instruction. I'd like to focus on a few other ways that we can liven up instruction.

## Use the first day

Take good advantage of the first day of class; this may be the most important day of the semester. People tend to form lasting impressions based on the first few minutes that they see you and then simply collect evidence to support this view throughout the semester. Make those first impressions be positive by being well organized and meeting students' needs efficiently. Most students the first day of class are interested in knowing whether this course is right for them. They want to know if the professor is going to be alright, and they want to know whether they will enjoy the class. It's our job to make clear what the class is going to be like that first day in a positive way, to let them see what an excellent professor they have, and to let them know that this class is relevant and interesting.

I taught a class last fall to our graduate students on the use of some teaching methods that I've employed in the classroom, and I really enjoyed it. One of the biggest struggles that we had early in the class was shifting the emphasis of the graduate students from focusing on "material covered" to "material learned". Until they recognize that students are much more conscientious about their class and they learn much more rapidly when their teacher knows who they are, they couldn't see why we should waste time learning names. And yet knowing our students may be the single most effective teaching tool that we have. I use a seating chart,

take individual student pictures and develop a class seating chart with those pictures to help me learn their names. I put those pictures on the back of the information cards that I collect and keep them in my file so that when someone calls and asks about a student I had in class three semesters ago, I can find his card, see his face, see the grade I gave him and often recall much more about him than I could with simply the name cue.

I use a seating chart because it facilitates collecting and returning papers, it makes it easy for me to see who's missing, and it makes it much easier to learn names when you know who is where. In my farm management class, there is a wide range of understanding of practical farm production techniques. I seat my students so that each one, who feels he has an inadequate about his understanding of current farm production practices, sits between people who feel they understand current farming methods reasonably well.

The first day of class I hand out a syllabus which has the lecture schedule for the semester, the text assignments and the outside reading assignments. This helps give the impression that I have invested substantially in this class. It saves me from having to remember to make assignments on a daily or weekly basis. The dates for the examinations and other important events are known the very first day so that there are no surprises. The rules that the students must follow in terms of class absences, late papers, and academic honesty are important parts of that syllabus.

## Choosing what to teach

When we're asked to teach a class, we have an idea of the material that has been in the course and how it fits into the curriculum, but

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we still have a great deal of flexibility in terms of what topics we will include. Teachers often err on the side of teaching too much material rather than not teaching enough. Our major challenge is to figure out what we are not going to teach. As I examine the myriad of topics that are available for me to teach in my classes with an eye as to which to teach, I try to run them through three sieves. Is the material inherently interesting, is the material perceived to be important, and do I have something important to say based on management and economic principles about the topic? What this means is that for the topics I teach, the students learn something useful about interesting, relevant material. The students tend to like classes with that kind of stuff in them.

### Motivating students

Motivating our students to want to learn is always a challenge. The first day I imply that because there is a great deal of good stuff in this class, and that I need to get started early and work fast or we won't get through it all before the end of the semester. Grades motivate students, so I tend to give lots of quizzes and lots of assignments. The quiz and lab questions tend to be practical problems so the students can recognize the value of knowing the answers. I try to insist that they not only know how to solve the problem on a practical day-to-day basis, but that they understand the theory behind the solution to the problem so that they can continue to be able to solve those problems many years into the future when the information detail has really changed. One of the ways that I get my students' attention is to ask them questions that are deliberately designed to have knee-jerk answers that are different from those that come from using my techniques. For example, when I'm teaching marginal cost/marginal revenue to decide how heavy to feed hogs, the marginal revenue is always significantly below the market price because the price is falling as output increases. When the price of hogs is in the \$40 to \$30 range, the marginal revenue is often in the \$25 to \$30 range, so it doesn't pay to feed those hogs heavier even if the cost of production is around \$35. Because they are surprised by this, they feel

this material is important and they pay better attention.

### Give students variety

Because students enjoy a variety of visual teaching techniques, it is important that we use the chalkboard and the overhead as well as the computer. My particular specialty in teaching involves storytelling. I like it when in their mind's eye they can see the people either doing something right or making a terrible mistake as I tell the story. My specialty at Purdue is father/son business arrangements and some of these businesses work much better than others.

I think of a long time ago when my brother went home to farm with my father and they expanded the cattle feeding system. They put up some tower silos, put in an automated feeding system and had what I thought was a miraculous system. I remember about Valentine's Day visiting and going out with my father at six o'clock in the morning. He walked up to that electric panel and pressed a button. There was a commotion in one silo and when he pressed another button, there was another commotion in the other silo. A third button started a conveyor and this miraculous process just continued. He was most concerned about the well-being of the livestock, and he put nearly all of his attention to making sure that the cattle were alright. After awhile he was convinced the cattle were in good shape, but he needed to continue to run the feeder in order to get enough feed in for them. While we stood there he turned to me and asked me how much feed I thought was in the silo. Now it's pretty tough to tell from the outside. I asked him how much feed was in the silo and he pointed about ten feet above the ground, saying "It's right there. We're running out of feed." "You know what your brother did yesterday?" he asked me. I said, "No, what did my brother do yesterday?" He said, "Your brother bought 35 head of cattle. That's the kind of partner I have--running out of feed, and my partner buys cattle." I asked him why he'd bought the cattle, and he said, "He'd got them cheap". I asked him why he'd bought them so cheap and he said, "The guy had run out of feed". I could tell by the way the wind was blowing that

this was one of those what they call "non-debatable" subjects. I just let it go. As a matter of fact, I about two-thirds forgot about it, but when I was back there about the Fourth of July and was out there at six o'clock in the morning with my dad and he was pressing buttons, I asked him when he had run out of feed. He said, "You wouldn't believe how much feed is in the bottom of one of those 70-foot silos." He said, "I fed them all they'd eat and I never did run out. We finally had to put the new silage in on top of the old." I thought that was the end of the matter, but it wasn't. That night while the family was sitting around digesting dessert and visiting, my father said, "Buying those cattle was one of the smartest things we did this spring." "Yes," he said, "we bought those cattle thin. We bought those cattle hungry. We bought those cattle right. They grew, they shone, we sold those cattle right. That was one of the smartest things we did this spring. Who would have known that there was enough feed in the bottom of those silos to feed all the cattle we had and 35 head more? But, your brother knew. Your brother is pretty smart!" And I thought yes, and old dad is pretty smart, too, because he knows an important management principle. If you're going to tell somebody that he did something right, tell him where his mother can hear or a neighbor or his wife. Praise publicly! And if you've got to ream him out. If you're really going to get down to the basics, no slip, do that one-on-one out behind the barn, preferably with the tractor running. Praise publicly, criticize privately! This is an important management principle that I often see violated and an awful price is paid. There are a few young people who have discovered that the single most entertaining thing that they can do at the coffee shop is to tell about the three stupidest things that their father did this last week. That's a bad mistake! If you have a difference with him, work that out privately. If you want to say something good, say that where other folks can hear. Praise publicly, criticize privately.

Telling that simple story seems to take a lot of time and isn't a very efficient way of communicating ideas. On the other hand, when you return from this conference and someone asks you what you learned, you are quite likely to give a list of two or three things, when as a

matter of fact you've been exposed to hundreds or maybe thousands of ideas. We can only learn a relatively small number of things in a given time period, and if we can make those easy to remember and reinforce them with a story, it may really enhance learning in contrast to material covered.

In class I often have the students vote on various things, such as whether they would buy a product or not, given some information that I've presented to them. I have them vote on whether they think that an answer the student just gave was a perfect answer or fell short. Students find it easy to nod in agreement to almost anything, as if they had known it all along. They feel as if they have learned very little. They are right unless you can jar their mind and make an impression. If they're forced to commit themselves to an answer and to build some kind of a defense for it before they discover the right answer, they're much more likely to recognize that they need to change how they're thinking about something. That's why I like the vote in class. Sometimes we vote with hands raised, and sometimes we shout in unison the right answer. The latter technique is really helpful in letting the class see that not everyone thinks exactly the same way about some issues.

#### **Inductive vs. deductive organization**

When you organize your course, there basically are two ways of presenting material that are quite different. One of them is to use an inductive approach, the other a deductive approach. It's fun to use the inductive approach and to build a solid foundation, stacking idea block on idea block until finally you can begin to see the light in the students eyes as they see where all this is heading. It's really fun to see those students come alive and suddenly realize what you have been doing.

The alternative is to use a deductive approach where at the beginning you tell the major conclusion and then go about building a system to support why that is the right way to tackle a particular problem or situation. I emphasize the deductive approach primarily because there are always going to be interruptions and unexpected diversions, and we

tend not to have as complete of control over class time as we wish we had. With the inductive approach, you must continue taking time to build and build and build and finally give them the final conclusion. This is somewhat anticlimactic if the final conclusion doesn't quite fit in the first hour. Often we find ourselves holding students over, keeping their bodies but not their minds. Using the deductive approach, we're able to give them the most important information early and then to build a foundation for it afterwards. When we are interrupted and finally the bell rings, we know that the material we have not yet covered was not quite as important as the material that's already been covered. When the next class hour starts, we can start on the new topic and give them the most important aspects of that at the beginning, allowing diminishing marginal returns to be exercised as we give them more and more detail. Using this technique allows us to stay right up with our schedule rather than always getting behind. It means the things we didn't cover are less important than the things we did.

### **Class size dictates the approach**

How we go about organizing our class and how we go about making that class experience enjoyable and efficient depends a great deal on the size of class. Any good person who knows his subject matter will get along fine teaching a class of 15 students. Between 15 students and 45 students, it's important that the instructor be somewhat organized, have rules, and look like he's in charge. Above that class size, and certainly by the time we get to 75 or 100 students, it is important that the teacher be king. He needs to have ultimate authority, to be totally organized and to take charge. Without that, students will run over him. It's essential that in classes above 75 or 100 students that the instructor have theatrical skills and use them. Each lecture had better be a dramatic performance or it just isn't going to work well.

### **Student grade reports**

Since 1962, I have given a computerized grade report to my students several times throughout the semester. In it I report the

individual student's scores and give him his grade in class along with the grades of the other students anonymously in class so that he can see how he's doing relative to the group. When I started this, some were concerned that I would demoralize the students who were in the bottom part of the class. These 30 years have taught me that this is not a very big problem. I reduce this problem by leaving all the students who start the semester in the system, even though some have dropped the class. The lowest live student you have in the class then does not appear to be the bottom student in the class. This system tells the students where they are so that they can plan to maximize their grade objectives. Students will help you correct your grade book errors when you have given them a score less than their records show. I'm always amazed and impressed when students come to me and tell me that I made a mistake and wrote down a higher score in my book than they should have gotten. It's beautiful to see this kind of integrity among our young people.

### **Examinations**

One of the most important and least-liked aspects of college teaching is examinations. Students sometimes find themselves surprised by the questions that are asked because the teacher has taught one thing and tested over another. He may have taught facts and tests for understanding. This is most frustrating to both teacher and student. We should develop a list of instructional objectives, then teach to these objectives and test for those objectives. An efficient way of finding out what a teacher's real objectives are, is to look at the questions on the exams. Occasionally I have asked brilliant questions on my final and had a dismal performance on those questions. If that question is really good, then the next semester I make sure that I have taught those students what to do in order to give a good answer to that question. I want to encourage you to use a similar approach. Maybe at the beginning of the semester we should write our final exam or our hour exams and then make sure that what we are teaching each day is helping them to give good answers to those questions. What I really am suggesting is a

tight correlation between what we teach and what we test about.

How long should our exams be? My philosophy is that poor students will make a lot of mistakes. Good students will do almost all that they do correctly. Excellent students will be able to do lots more correctly. For this reason, I make sure that my exams are long enough to challenge everyone in the class. There is a myth among college students that college professors are mean, unrealistic people who put tremendous time pressure on students, which is just not the way it's going to be once they get out of school. But time pressures only intensify. If a person can answer more questions correctly than another in a given time period, he will be a better performer in every job situation that I know about.

A way to evaluate the quality of your exam if you teach an applied course like I do -- farm management -- is to have a practicing professional who has not taken your class take your final. If he can do well on your final, your final is a good one.

Another trick that I have learned to help weak students is to have them bring to class a 3 x 5 card to help them with their quiz. Some students don't think about what will be on the quiz the next day. Making a card to help them with the quiz forces them to think about what questions are likely to be on the exam. Another advantage of this card is that it discourages us teachers from asking quiz questions that can be answered simply by copying a few things from the card onto the quiz paper.

### **Grading**

When we finish teaching our students, most of us are required to assign them grades. How do we do this? Grading has to be one of the most frustrating tasks of our profession. At various times and under various situations, I have seen suggested that the student who should get the "A" in the class was the student who was the brightest, the wisest, the most improved, the one who had done the most given his ability, the one who is most likely to be a success in life, and the one who gave the most right answers. I would

like to suggest that there is a better criteria to use than any of these, and that is that the student who gets an "A" in the class is the one who has demonstrated clearly that he has learned what I have taught.

### **Make it fun and exciting**

Livening up the classroom basically means making the class more relevant and more enjoyable for our students. There are lots of ways of doing it. The idea of really improving our teaching through the application of computer technology to the classroom is one of the most fruitful ways we have of livening up our classroom. On the other hand, no one technique, no matter how good it is, is good enough to make our students think that we teach a lively, excellent class. The only way to be lively and excellent is to have a variety of teaching techniques. Almost everyone here is a good teacher, but we could all be better. Continuing to focus on how to make our students think that our subject matter is fun and exciting is the most important thing that we can do. If our students find it that way, they will learning about as well as they can.