

# Teaching Tips/Notes



## Building Capacity for Cooperation

Cooperative learning is a successful teaching strategy in which small teams use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn. Working together in teams and learning cooperatively helps students to capitalize on one another's knowledge, skills, and resources. Five essential elements have been identified as critical components of successful cooperative learning: 1) positive interdependence; 2) individual accountability; 3) promotive interaction; 4) small group skills; and 5) group processing.

Positive interdependence is defined as linking learners together so one cannot succeed unless all group members succeed. Group members must know that they sink or swim together. Individual accountability is created by assessing the work of each individual and through peer assessment of individual contributions to the group effort. Promotive interactions involve group members teaching, encouraging, and questioning each other in a collegial manner. Small group skills involve active listening, sharing resources, and showing mutual respect and appreciation. Group processing is actuated by determining which member actions were helpful and which should be changed.

Cooperative learning has been studied in formal and informal educational and organizational settings around the world and has been found to be an effective means for improving: higher-level reasoning, knowledge transfer, knowledge retention, persistence to succeed, networking relationships and social support. Cooperative learning

is also an effective means of building an appreciation for the strengths individuals bring to learning and organizational contexts. Cooperative learning methods have also been utilized to reduce intergroup conflict and build interpersonal bridges that tend to reduce prejudice and negative stereotyping (Aronson and Patnoe, 2011). In effect, cooperative learning opportunities create a scaffolding which guides learners' construction of an improved capacity for substantive cooperation.

Table 1 illustrates several practical ways to utilize cooperative learning strategies. When implementing cooperative learning strategies start small and build a culture of cooperation. Teach learners about the five essential elements of cooperative learning and how they can be successful as teams. Cooperative teams should be arranged by the instructor and be composed of three to four individuals. Assignments and tasks should be challenging enough to necessitate that individuals cooperate with their team members in order to be successful. Further time should be given for cooperative groups to debrief amongst themselves and with the instructor. Utilization of both team and individual level assessments will lead to an increase in both individual and shared group accountabilities.

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**Table 1. A listing of example practical cooperative learning strategies**

Strategy	Explanation	Works best for	Benefits
Jig-Saw	Each member of a cooperative group researches one part of a complex question or content area. They then compare their information with learners from other groups assigned to the same question or content. After comparing and learning in their expert group, the members go back to their original group to share what they have learned.	Content with three to four parts or facets.	Student gain content knowledge; research skills; presentation skills
Applied Problem	Within cooperative group all members work to consider a problem or given challenge; team members work to identify all known data; team members identify unknown factors/elements. Identifying various important variables and strategies assessment of the data / information and individual learner outcomes.	Applying knowledge/ skills to problems that require teams to analyze and evaluate.	Practice of applied problem and development of problem solving strategies and skills.
Structured Paraphrasing	Each person chooses content/ skills to share with others on their team. Each team member spends 3-4 minutes sharing their knowledge/ ideas. While the other team members are actively listening. The cooperative team then paraphrases what was shared making sure to correct any misunderstandings or mistakes.	To practice using content knowledge and vocabulary to clarify content/ skill understandings	Paraphrasing helps to ensure that team members are understanding content/ skills and that everyone has a chance to be heard
Flash Cards	Cooperative teams create content or skill development flashcards; team members test each other with the flashcards they made, making sure that terms can be used in appropriate ways and contexts.	To learn content in a supportive atmosphere	Helps learners memorize terminology and utilize
Peer Editing	Team members read the written responses of each of their teammates. Team members take notes on the written response (looking for errors and content omissions). Each team members paper is rated and given suggestions for improvement using a rubric; students are then allowed to edit their writing assignment.	Short writing assignments; assignments that will build towards a larger more sophisticated assignment	Team members review content while checking for errors; correcting errors requires higher level of cognitive processing; practicing how to present a case

## Lessons Learned from Teaching Large Classes

### Introduction

Teaching large classes can be intimidating, especially for new faculty who may have never taught before. This teaching tip is presented by two faculties in the Department of Agricultural and Applied Economics (AAEC) at Virginia Tech (VT). Both Marchant, a Professor who has taught classes since 1989, and Morgan, an Assistant Professor who is new to academic classroom teaching, are graduates from VT's Center for Instructional Development and Educational Research (CIDER) year-long certificate programs—large class and new faculty-- (<http://www.cider.vt.edu/development/>). Both teach large AAEC classes, which include students from a variety of majors. Thus, key challenges include teaching logistics for large student numbers, as well as maintaining student interest in course content for non-majors. This teaching tip highlights key lessons learned through these CIDER teaching certificate programs and their own classroom experiences—both general lessons on course design, lesson plans, evaluation and student engagement, as well as specific large class management strategies. The overall goal is to provide teaching tips that readers can immediately use in their large classes.

### Procedures

Examples of lessons learned include the following, many of which can be applied to any class size:

#### General Lessons:

- To take a systematic, strategic approach to teaching. All items should align and be connected: the purpose of the course, learning outcomes and objectives, lesson plans, and assessment. *“Instructional Design involves systematically planning, developing, evaluating, and managing the instructional process, based on principles of learning and instruction”* (Doolittle, 2015c). For example, each step should build upon one another: the purpose of the course directly relates to learning outcomes and course objectives, which feed into developing lesson plans and ultimately assessment.
- Evaluate based on what the instructor wants students to learn and align with specific course learning objectives. Evaluations should place the greatest weight on the most important learning objectives. Grading should be based on student performance demonstrating knowledge of these learning objectives. The main function of assessment is to improve students' learning (Doolittle, 2015c). However, improved instructor awareness of the individual students' goals for final course grades provides additional motivation for concise communication of course assessments and associated grade weights at the beginning of the term.

- Student engagement amplifies student learning. Learning is based on the ability of students to process course material, e.g., in-class “think-share-pair” or out-of-class group projects (Doolittle, 2013a and 2013b). Group projects that include class presentations/papers or executive summaries serve to meet the skills employers want graduates to possess—team work and communication skills (Crawford, et al. 2011).
- “The single most important variable in promoting long-term retention and transfer is ‘practice at retrieval’ (Halpern and Hakel, 2003).”
- Break up the class session into segments. Use active learning activities during class to reinforce lecture. Employ different physical senses—think/listen/physical movement (Doolittle, 2015a; Halpern and Hakel, 2003; Heppner, 2007). Audience response systems (ARS), or “clickers” are an increasingly popular tool used to deliver curricula and educational content across diverse, heterogeneous audiences while providing instant data on learner understanding. Using ARS data during a lecture provides the instructors with the opportunity to encourage guided discussions based on “teachable moments” while minimizing the risk of “tangent” or “off-topic” discussions which tend to plague larger audiences and disrupt workshop timetables. (Morgan and Maples, 2015).
- Include activities to create a “sense of community,” ownership and accountability, particularly for large classes. Examples include learning students' names, developing a rapport with students, being responsive to student e-mail, talking with students before and after class, out-of-class review sessions and demonstrating support for students (Doolittle, 2015b; Marchant, 2014 and 2007).

#### Specific Class Management Lessons:

- Always begin class with an engaging and enlightening example that is related to covered material
- Clearly describe course objectives and schedule of assignments listed in the syllabus that do not change throughout the course
- Do not offer extra credit or participation points
- Use a point system for grades (e.g., 1000 total points) so students know their scores throughout the semester
- Choose graded assignments that motivate students to review their notes and readings
- Restrict the use of laptops and/or electronics devices in class. Consider creating an “electronic zone” in the back of the room to avoid distracting neighboring students
- Implement a peer review evaluation system for group projects that affect individual student grades.
- Provide partial class handouts posted prior to class and completed during lecture. This frees up time for more in-class discussion and encourages attendance

### Assessment

By implementing the above strategies, impacts included integrated courses—where assessments were linked to course learning outcomes and weights reflected topic importance; increased student engagement, through in-class exercises as well as out-of-class group projects; and ultimately, enhanced student learning through activities that are designed for students to research and process information that reinforce class concepts.

In closing, please allow us to promote Virginia Tech's teaching conferences sponsored by the Center for Instructional Development and Educational Research: a general teaching conference typically in early February and a large class conference in July (<http://www.cider.vt.edu/>). We would love to have you attend.

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## The Need for A Critical Pedagogy of Agriculture

### Introduction

Many of our agricultural science students can talk about why agriculture is important. They may discuss the need to feed the world, support regional and national economies, or the cultural importance of agriculture. Some students might understand the ecological implications of agriculture, such as issues with tillage, compaction, soil microbial life and even biodiversity. Yet, when asked how agriculture can improve impoverished communities or be used to enhance ecosystem services, many students are unsure.

Our agriculture students must understand the connections between agriculture and key social, economic, and ecological issues such as food deserts, rural poverty, health epidemics (i.e., obesity and type II diabetes), desertification, eutrophication and climate change. Moreover, students need to be aware of how various community educational programs and alternative agricultural practices can help alleviate some of these problems. Our students should learn about and participate in agrifood-related initiatives such as community-supported agriculture, farm to cafeteria programs, gleaning (donating unsold produce), game meat donation, urban and vertical farming and wild edible community harvesting. They need to know about food based social service programs (i.e., Food Not Bombs and Meals on Wheels), horticultural and equine therapy, food mapping, food hubs and food justice movement activities. Using our Critical Pedagogy of Agriculture (CPAg) framework can bridge this knowledge gap and help guide College of Agriculture educators in their practice.

### What is a Critical Pedagogy of Agriculture?

Similar to other critical pedagogies, CPAg is a way of thinking about, questioning, negotiating, and acting to transform our understanding of knowledge, institutional structures, and relationships surrounding the agriculture-society nexus. CPAg focuses on improving social and ecological issues through agriculture. The first step is to ensure that alternative agricultural paradigms and systems are covered in the college classroom. This opens dialogue about the implications of different agricultural practices (i.e., conventional farming, concentrated animal feeding operations, permaculture and agroecology). We recognize that educators may not be



able to address all of these issues and alternative practices, yet given the applied nature and range of topics within the discipline, CPAg is relevant to most agricultural courses.

### **Procedures: How to incorporate CPAg**

This section provides a brief overview and guiding discussion questions for three key agricultural issues.

#### *1. Building Community-Based Food Systems*

Ensuring access to healthy food is a daunting problem. Those most in need may not know how to grow food or have access to land. Colleges of agriculture are not immune to these food justice issues as land-grant institutions were originally founded to improve and share agricultural knowledge. CPAg argues that part of the solution is for people to become active participants in their local food system. Questions to be posed:

- Who has the right to call themselves a farmer or gardener?
- What is the economic impact of backyard gardening on the agrifood industry?
- What role can urban and suburban gardening play in alleviating food deserts?

#### *2. Addressing Social Inequality*

There are a variety of connections between agriculture and inequality. Many agricultural workers in America live at or beyond the poverty line. Migrants exist in the shadows of our agricultural industrial complex, harvesting, processing, and serving the food we eat. CPAg pushes students to increase their awareness of the rights and wages of agricultural workers and to consider how the economic structure of family farming is changing. Students should consider the following questions:

- What is the relationship between immigration policies and agricultural labor?
- How have changes in family farming impacted rural communities in the past 50 years?
- Should agricultural labors be paid more to encourage future farm ownership?

Students in agricultural science-based classes need to consider these questions and the social injustices in our agrifood system by becoming a part of assigned community service projects that provide experiential education.

#### *3. Contested Agricultural Approaches*

Agriculturalists can be divided into two broad ideological camps: conventional (i.e. tillage, synthetic inputs, and the use of genetically modified seeds) and alternative (i.e., no-till, agroecology, and permaculture). This divide is visible in colleges of agriculture when considering diverse student populations and their associated agricultural values. This divide has led to legislative battles between stakeholders and businesses and has shaped the Farm Bill and other USDA policies. Professors need to be inclusive of diverse agricultural values and alternative approaches, even if they do not agree

with them. Questions:

- What is your experience with conventional and alternative approaches to farming?
- What are the costs and benefits of using synthetic agricultural chemicals?
- What are the social and ecological costs and benefits of annual agriculture (i.e. corn, soy, wheat, etc.) vs. perennial agriculture (i.e. orchards and tree crops)?

### **Assessment: How CPAg Changes Conversations**

Students often come to see the complexities and deeper issues of the agrifood-society nexus using these kinds of critical, problem-posing questions. The outcomes from these activities range from critical awareness of one's food sources to planning for rural community through agriculture. For example, food mapping asks students to write reflections about their experience investigating food sources. Some students develop an interest in "wild edibles" and the lack of food-worker knowledge regarding food being served in restaurants. Other students note food miles and the differences in pricing between organic and conventional produce. Another example can be found in the case study of a rural food dessert. Students were challenged to think how rural citizens can produce food locally. They struggled initially, but soon identified ways for rural community members to become active in promoting more economically sustainable food through farming, gardening, ranching and hunting.

We recognize that these critical conversations don't always happen in agricultural classes; yet, when they do, they can help students generate answers to questions about how agriculture impacts and influence other structures and outcomes in society. CPAg helps students think through these issues and make connections to their liberal arts coursework and local communities. The CPAg framework encourages students to work for positive social and ecological change through agriculture.

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## Use of Movies to Teach a Leadership Lesson

### Introduction

Concepts of leadership can be learned in many ways. Students benefit from diverse approaches that appeal to a variety of learning styles. One of the most successful ways that I have used to apply leadership lessons learned in the classroom is “Leadership at the Movies.” I use a variety of movies to challenge students, challenging students to critically apply a wide variety of leadership lessons. Lessons can range from individual skill techniques to the application of values and character traits in effective leadership. Movies can depict leaders in formal leadership roles, such as President Kennedy in “Thirteen Days” to informal leadership roles such as Andy Dufresne in “The Shawshank Redemption.”

Using movies to enhance leadership lessons offers many benefits to the learning process. First, movies appeal to a younger audience accustomed to television/digital images. Movies provide an opportunity for self-paced or online learning (it is not necessary to utilize formal class-time for movies that are accessible for home-based viewing). Movies can provide a broader or different perspective of leadership that may engage student deeper and challenge them to apply course concepts at a higher level.

### Sample Movies

#### Apollo 13 (PG)

Jim Lovell (Tom Hanks), plays the leading character in this film about a crew of astronauts dealing with an explosion on their craft in outer-space. Lessons such as team work, communication, problem solving and dealing with chaos are evident through this film. Lovell uses calm and creative leadership to deal with a challenging situation and focus his team to use its resources to address problems and arrive safely back at Earth.

Sample Application/Discussion Questions:

1. How does Lovell establish himself as a leader of his crew?
2. How does Lovell address adversity/chaos during the flight?
3. What techniques does Lovell use to unite his team as a leader?

#### Shawshank Redemption (R)

Andy Dufresne is wrongly convicted of murdering his wife and sentenced to the Shawshank Prison system. Best for mature audiences, this movie is an excellent example of establishing a vision, positive thinking and fortitude. Andy perseveres and reaches personal success and challenges others along the way to seek positive outcomes and thrive against all odds.

Sample Application/Discussion Questions:

1. Andy assumes an “informal” leadership role at Shawshank Prison, how does that happen?

2. In what ways did Andy approach his stay at Shawshank differently than most other inmates?
3. What are some examples of ways that Andy had positive impacts on others through his actions or decisions as a leader?

#### Patch Adams (PG13)

“Patch Adams” is based on a true story, of a doctor that doesn’t follow the expected protocol, nor “fits the mold” of a typical doctor. An inspiration story of a many that overcomes adversity, challenges and road blocks to success, this story combines humor and drama to teach valuable lessons. This films is useful to represent topics such as “challenging the process,” “leading with heart” and “servant leadership.”

Sample Application/Discussion Questions:

1. In what ways did Patch approach life/medicine differently than other medical students?
2. Why did Patch face challenges/road blocks along with way as he worked to achieve goals/make change?
3. How did Patch overcome obstacles to make change and impact others?

#### Amish Grace (NR)

Focused on the power of “forgiveness,” this movie is also an excellent tool to highlight concepts such as cultural understanding and diversity. Based on a true story in Nickel Mines, PA, an Amish community deals with the impacts of a shooting at an Amish school house where a man fatally shoots five Amish girls before taking his own life. Miraculously the parents of those that lost children in the shooting convey a true sense of forgiveness to the perpetrator’s widow and rely on their faith to move forward and accept the power of forgiveness.

Sample Application/Discussion Questions:

1. To what extent, did the Amish families deal with the shooting situation differently than how we would expect non-Amish?
2. Why do the Amish embrace forgiveness in the manner that they do?
3. How can we apply the concept of forgiveness to those serving in leadership roles?

#### Remember the Titans (PG)

Set in 1971 in Virginia, Herman Boone is an African-American football coach at T.C. Williams High School in their first season as a racially mixed school system and football team. Coach Boone uses a relentless positive attitude, drive and determination and role modeling to drive change in this community. Overcoming extreme resistance and challenges, Boone was able to unify the team and town to rally behind the football program. Lessons in this movie range from challenging the process and establishing a vision to overcoming adversity and prejudice, this movie is an appealing movie for many audiences and topics.

Sample Application/Discussion Questions:

1. What were the challenges and obstacles that Coach Boone faced as the new football coach at T.C. Williams High School?
2. What approaches did he use to deal with problems/issues?
3. How was Coach Boone able to overcome challenges and unite the community behind the football program?

**Conclusion**

Movies can be effective instructional tools for a wide variety of leadership lessons. Entertaining visual displays along with discussion, application and interaction can make for a powerful and enjoyable learning approach. It is important to engage students in discussion or reflective writing to encourage deeper understanding of concepts and lessons.

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