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Educational Theory and Application of  
Experiential Learning in ANR Course  
Handbook  
(CSUS423)

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M.W. Everett

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# Educational Theory and Application of Experiential Learning in ANR Course Handbook (CSUS423)

## Overview of the Course

Welcome to CSUS423, Educational Theory and Application of Experiential Learning in ANR! This hybrid course is self-paced, however there are structured due dates and the end date is the last day in which assignments will be accepted. This course is designed to give students a better understanding of youth leadership from a practitioner perspective. This course is also designed for you to utilize your classroom or other educational location as an environment for learning from your students about experiential learning. Therefore, as part of this course you are being asked to develop a set of experiential learning activities unique to your classroom (Assignment 1) and hopefully try them out with your students.

This course is a hybrid format. What does that mean? It means that you will spend a large sum of time working on your own via the web-based, online learning platform called D2L. Additionally, you will attend culminating experiences near the end of the course (see course calendar) where you will meet with professionals who are currently working with individuals using experiential methods of teaching and learning. The D2L link for the course can be found at: <https://d2l.msu.edu/>. D2L is reasonably intuitive, however if you do have problems or questions, the D2L 24-hour phone line is: 517-432-6200 or Toll Free at 844-678-6200.

As previously mentioned, all of the course materials can be found on the D2L Website in the course US19-CSUS-423-740. When you log on to D2L if you do not see this course, then you can type in the aforementioned naming convention (US19-CSUS-423-740) into the “search for courses” menu. When you go into the course on D2L you will find a series of folders. These folders are separated into Modules and administrative folders.

Each of the Module folders represent one week. Within each of the modules you will find a Movie and Powerpoint file. The Powerpoint should be used as a guide for weekly objectives, readings, and assignments. Additionally, you may find different resources including readings, survey instruments, and questions to ponder. Finally, in many of the Modules you will find Blogs. These Blogs are designed to stimulate learning about your context and ask questions to assist in the reflective process.

Each of the Assignment folders includes Dropboxes for you to upload your final product. Again, this should be reasonably intuitive, however if you have questions contact D2L and they can guide you through the process. Note that all assignments must be turned in by the last day of class (June 27<sup>th</sup> and via uploading to D2L).

## Course Syllabus

### **CSUS 423** **Educational Theory and Application of Experiential Learning to ANR**

Hybrid, 3 Credits

- INSTRUCTOR:** Dr. Michael W. Everett  
Department of Community Sustainability  
Michigan State University, 480 Wilson Road  
140 Natural Resources Building  
Telephone: 517-432-0292, Cell Phone: 517-581-5888  
Email: [everetm@msu.edu](mailto:everetm@msu.edu)
- OFFICE HOURS:** By Appointment
- LOCATION:** Online with Field trips (TBD)
- MEETING TIMES:** Online with additional field trip meeting dates
- COURSE DESCRIPTION:** Foundations of experiential learning. Experiential learning within the context of families, schools, organizations and communities as a function of an educational system. Application of experiential learning within formal and non-formal classroom settings.
- COURSE GOALS:** The outcomes of this course are to develop students' knowledge and skills of experiential learning. As such, the course builds upon current knowledge of experiential learning by participants. Students will:
- Apply appropriate theories of experiential learning from a systems perspective;
  - Evaluate experiential learning opportunities;
  - Evaluate instructional materials for experiential learning; and
  - Plan, coordinate, and deliver instruction based on experiential learning principles in the context of learning systems.

## **Educational Theory and Application of Experiential Learning in ANR Student Learning Objectives**

Students will be able to *Apply* key theories of experiential learning by:

- Defining experiential learning;
- Identifying important theories related to experiential learning;
- Exploring the historical foundations of experiential learning theory;
- Incorporating appropriate theories in education; and
- Applying theories in the context of teaching and learning.

Students will be able to *Evaluate* experiential learning by:

- Describing entrepreneurial opportunities in experiential learning;
- Describing scientific inquiry opportunities in experiential learning; and
- Applying key factors of experiential learning to appropriate educational situations.

Students will be able to *Plan, Coordinate, and Deliver* instruction based on experiential learning principles by:

- Developing teaching lesson plans that provide entrepreneurial experiential learning opportunities for students;
- Developing teaching lesson plans that provide scientific inquiry experiential learning opportunities for students;
- Analyzing experiential strategies within teaching and learning from a programmatic perspective; and
- Applying experiential learning that focuses on the needs of the students, community, and systems of instruction.

**MICHIGAN STATE UNIVERSITY LEARNING GOALS**  
**CSUS423 – Educational Theory and Application of Experiential Learning in ANR**

**Analytical Thinking:** You will learn to critically analyze complex information and problems through courses and experiences at MSU and by applying what you learn both in and out of class.

**Effective Citizenship:** You will learn to be an effective citizen by engaging in opportunities for involvement both inside and outside the classroom.

**Effective Communication:** Spartans communicate to diverse audiences using speech, writing, debate, art, music, and other media. You will learn how to communicate effectively through your interactions with peers, faculty, staff, and community members at MSU, your coursework, and your reflection on how you've changed as you progress toward graduation.

**Integrated Reasoning:** You will learn to make decisions through integrated reasoning by observing the example set by your fellow Spartans—faculty, professional staff, your peers and student leaders, and our 500,000 Spartan alumni—who are advancing knowledge and transforming lives in innumerable ways. MSU provides you with the space and support to make decisions learn from them and use them to inform your values.

**DEPARTMENT OF COMMUNITY SUSTAINABILITY COMPETENCIES**  
**CSUS423 – Educational Theory and Application of Experiential Learning in ANR**

**Critical thinking:** Students will interpret, analyze and evaluate information generated by observation, experience, reflection, reasoning, and communication as a guide to formulate and defend responses to complex sustainability problems.

**Civic engagement:** Students will develop the knowledge, skills, values, and motivation to participate in civic life.

**Leadership:** Students will develop, demonstrate and evaluate leadership practices that contribute to sustainability.

**Initiative and practical skills:** Students will demonstrate initiative, including the ability to self-direct and solve problems individually and as participants in larger group efforts.

## **TEXTBOOK:**

Kolb, A. Y., & Kolb, D. A. (2017). *The Experiential Educator: Principles and Practices of Experiential Learning*. Experience Based Learning Systems, Kaunakakai, HI.

## **STYLE MANUAL:**

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th edition). Washington, DC: Author.

## **ADDITIONAL READINGS AND RESOURCES:**

Everett, M. W., & Raven, M. R. 2018. Measuring Optimal Experiences of CANR Undergraduates in a Leadership Course. *Journal of Agricultural Education*. 59(1), 35-50.  
<https://doi.org/10.5032/jae.2018.01035>

Phipps, L.J., Osborne, E. W., Dyer, J. E., & Ball, A. L. (2008). *Handbook on Agricultural Education in Public Schools*. Interstate-Delmar Publishing. ISBN 13: 9781418039936, ISBN 10: 1418039934.

Mager, R. F. (1997). *Preparing Instructional Objectives (3<sup>rd</sup> Edition)*. The Center for Effective Performance, Inc., Atlanta, GA.

Timpson, W. M., Foley, J. M., Kees, N., & Waite, A. M. (2013). *147 practical tips for using experiential learning*. Atwood Publishing, Madison, WI. [www.atwoodpublishing.com](http://www.atwoodpublishing.com).

The National Council for Agricultural Education. (2016). *National Quality Program Standards For Secondary (Grades 9-12) Agricultural Education*. On Website,  
[https://www.ffa.org/SiteCollectionDocuments/tc\\_national\\_quality\\_program\\_standards\\_revised.pdf](https://www.ffa.org/SiteCollectionDocuments/tc_national_quality_program_standards_revised.pdf).

## **COURSE CALENDAR AND METHODOLOGY:**

The course is structured utilizing a variety of teaching methods including online modules associated to learning. This course is based in the technique of problem solving; therefore, students will need to become self-sufficient in how they solve assigned tasks and completed course outcomes. The tentative schedule is as follows:

Week #1 – Module 1 – Experiential Learning Theory (ELT), Cycle and Cognition (**ONLINE – May 13 to May 17**)

- Kolb and Kolb (2017) – Chapters 1 – 3
- Introductions, Information, and Syllabus Overview
- Experiential Learning – Why is it important?
- **Experiential Learning Environment Vlog (Blog 1)**
- **Farewell to Arms (Blog 2)**
- **History of ELT a Mental Model (Blog 3)**
- **Assignment 1-1 Due (Upload to D2L)**

Week #2 – Module 2 – Spirals, Identity and Being Deliberate about EL (ONLINE – May 20 to May 25)

- Kolb and Kolb (2017) – Chapters 4 – 6
- [Applying the KLSI \(Blog 4\)](#)
- [Application of Deliberate Learning \(Blog 5\)](#)
- [Assignment 1-2 Due \(Upload to D2L\)](#)

Week #3 – Module 3 – Teams and Psychological Space (ONLINE – May 27 to May 31)

- Kolb and Kolb (2017) – Chapters 7 – 9
- [Resource for Team Norms \(Blog 6\)](#)
- [The Learning Space \(Blog 7\)](#)
- [Assignment 1-3 Due \(Upload to D2L\)](#)

Week #4 – Module 4 – Space and Reflection (ONLINE – June 3 to June 7)

- Kolb and Kolb (2017) – Chapters 10 – 12
- [The Sache \(Blog 8\)](#)
- [Digital Learning Objects \(Blog 9\)](#)
- [Assignment 1-4 Due \(Upload to D2L\)](#)

Week #5 – Module 5 – From Play to Deep Learning (ONLINE – June 10 to June 14)

- Kolb and Kolb (2017) – Chapters 13 – 14
- The Experience – Play and Deep Learning
- [The Walking/Talking Stick \(Blog 10\)](#)
- [Assignment 1-5 Due \(Upload to D2L\)](#)

Week #6 – Module 6 – Educators and Experiential Learning (IN-PERSON, Corunna H.S., June 19)

- Kolb and Kolb (2017) – Chapters 16 – 17
- Site visit reflection #1 and application of experiential concepts

Week #7 – Module 7 – Creating the package for your learning setting (IN-PERSON, Laingsburg H.S., June 20)

- [ASSIGNMENT 2 DUE \(30%\) – Experiential Learning Lessons Handbook \(Upload to D2L\)](#)
- Site visit reflection #2 and application of experiential concepts

All assigned papers must be typed, one-inch margins, 12-point font, and pages numbered (Times New Roman or Arial font). For questions regarding writing style, and reference citations, refer to the American Psychological Association (APA) manual. **All assignments are due on the class date defined above and below. All assignments will be due by the end of the class period described in the calendar above. Further, there will be NO late assignments accepted.**

## Course Activities and Assessments:

### Class Based Online Blogs – 40% (40 Points x 10 Blogs = 400 Points)

Developed knowledge through online readings and blogging will be an important part of the learning experience. All students are expected to participate in blogging activities based on the readings and topics provided in the D2L blog. Additionally, four of your Micro-PDI Blogs are also part of your online blogging activity (See below for an explanation of Micro PDIs. Over the course of the first several Blogs (4, 6, 8, 9) you will upload your Micro-PDIs to the appropriate location. You will also be provided with a prompt on certain blogs and asked to dialogue based on the prompt and associated literature from the course.

### Site Visit Reflections – 10% (50 Points x 2 = 100 Points)

The goal of this assignment is for students to reflect upon their experiences at the two different sites and highlight opportunities for experiential learning from the specific sites. Reflections should be limited to 1 to 2 pages and should include the most important points for you in relation to your teaching and learning context. Upload your responses to the appropriate D2L site.

### Assignment #1 – Weekly Reflection Papers – 20% (5 Papers @ 40 Points = 200 Points)

Utilizing the *Kolb and Kolb (2017)* textbook for the course, students will write a weekly summary/application/reflection (SAR) of the chapters assigned for a given week. The SAR should be no more than one page single-spaced and will include the most salient point(s) you observed in the weekly chapters. Each paper should include an **introduction** to the material, **summary** of the point(s), the context where this was used through application in learning, reflection on how the highlighted material worked in **your educational setting**, and **reflection** of the process as it relates to experiential learning.

### Assignment #2 – Experiential Learning Lessons Handbook – 30% (300 Points)

Students will develop an experiential learning plan handbook as it relates to your specific discipline and context. The Handbook should include at least 5 unique experiential learning activity lessons that apply directly to your program and context. The handbook must include: 1) Cover page, 2) Table of Contents, and relevant material for at least 5 unique experiential lessons. Lessons should include a 200-word abstract that synthesizes the lesson in terms of the ELT as defined by Kolb and Kolb (2017), a lesson plan using the included template or another relevant template system, any additional material lists or worksheets, and an assessment tool for each of the lessons. Of the five lesson plans they should include the following: 1) an entrepreneurial lesson, 2) a scientific inquiry lesson, and 3) a leadership or science lesson using the walking stick concept from class. The remaining two lessons are up to you.

## Awarding of Points

• Class-based Online Blogging	400 (40%)
• Site Visit Reflections (2 Site Visits)	100 (10%)
• Assignment 1 – Weekly Reading Papers	200 (20%)
• Assignment 2 – Experiential Learning Lesson Handbook	300 (30%)

## TOTAL POINTS

**1000**

## Grading Scale

899.1 – 1000	4.0
849.1 – 899	3.5
789.1 – 849	3.0
729.1 – 789	2.5
679.1 – 729	2.0
629.1 – 679	1.5
589.1 – 629	1.0
< 589	0.0

## ACADEMIC MISCONDUCT:

[Article 2.III.B.2](#) of the Academic Freedom Report states: “The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards.” In addition, the Department of Sustainability adheres to the policies on academic honesty specified in General Student Regulation 1.0, [Protection of Scholarship and Grades](#); the all-University Policy on [Integrity of Scholarship and Grades](#); and [Ordinance 17.00](#), Examinations. (See Spartan Life: Student Handbook and Resource Guide and/or the MSU Web site: [www.msu.edu](http://www.msu.edu).)

Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the [www.allmsu.com](http://www.allmsu.com) Web site to complete any course work in this course. Students who violate MSU regulations on Protection of Scholarship and Grades will receive a failing grade in the course or on the assignment.

Faculty are required to report all instances in which a penalty grade is given for academic dishonesty. Students reported for academic dishonesty are required to take an online course about the integrity of scholarship and grades. A hold will be placed on the student's account until such time as the student completes the course. This course is overseen by the Associate Provost for Undergraduate Education.

(See also <https://www.msu.edu/~ombud/academic-integrity/index.html>). **There will be no warnings – the maximum sanction allowed under University policy will occur on the first offense.**

## **ACCOMODATIONS:**

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at [rcpd.msu.edu](http://rcpd.msu.edu). Once your eligibility for an accommodation has been determined, you will be issued a verified individual services accommodation ("RISA") form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date will be honored whenever possible.

## **BEREAVEMENT:**

Michigan State University is committed to ensuring that the bereavement process of a student who loses a family member during a semester does not put the student at an academic disadvantage in their classes. If you require a grief absence, you should complete the "Grief Absence Request" web form no later than one week after knowledge of the circumstance. I will work with you to make appropriate accommodations so that you are not penalized due to a verified grief absence.

## **DROPS AND ADDS:**

The last day to add this course is the end of the first week of classes. The last day to drop this course with a 100 percent refund and no grade reported is \_\_\_\_\_. The last day to drop this course with no refund and no grade reported is \_\_\_\_\_. You should immediately make a copy of your amended schedule to verify you have added or dropped this course.

## **COMMERCIALIZED LECTURE NOTES:**

Commercialization of lecture notes and university-provided course materials is not permitted in this course.

## **DISRUPTIVE BEHAVIOR:**

Article 2.III.B.4 of the Academic Freedom Report (AFR) for students at Michigan State University states: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.III.B.10 of the AFR states that "The student has a right to scholarly relationships with faculty based on mutual trust and civility." General Student Regulation 5.02 states: "No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Faculty Judiciary process.

## **E-LEARNING POLICIES:**

Information technologies such as D2L and email are widely used in this class. As a result, there are some additional policies that need to be understood.

- Students should visit the course's D2L site on a regular basis.
- Students should check their email frequently (all class email is sent to the student's official MSU email account).
- All assignments submitted electronically, either on disk or via email, should be free of any viruses and/or worms. Any infected file or disk that is submitted will receive a zero (0) for that assignment.

- This course recognizes the students' right to privacy and adheres to the Family Educational Rights and Privacy Act (FERPA).
- Students need to review the university policy "Acceptable Use of Computing Systems, Software, and the University Digital Network" at <http://ict.msu.edu/guidelines-policies/aup/>.
- Excessive emails make an unreasonable time demands on both sender and recipient. Please ensure you have a legitimate need before you write.
- Dr. Everett will answer email about:
  - Questions arising from difficulty in understanding course content.
  - Requests for feedback about graded assignments.
  - Private issues appropriate for discussion within the teacher-student relationship.
- Dr. Everett will NOT answer email which:
  - Poses questions answered in the course information sections of the course D2L site
  - Poses questions answered in the course syllabus.
  - Lacks a subject line clearly stating the purpose of the email and the course number (CSUS423).
  - Raises an inappropriate subject.
- Dr. Everett will answer email received on a given day no later than close of work on the next workday.
- The Web site [tech.msu.edu](http://tech.msu.edu) provides a number of information technology resources for students.
- You are responsible for the operation of any personally owned computers you use on or off campus. A malfunctioning computer system is NOT a valid excuse for submitting late work.
- Students are expected to have a high degree of self-motivation and self-direction in this class and develop the needed technology skills to excel in this class and in life.
- CSUS423 - Turnitin Policy
  
- Consistent with MSU's efforts to enhance student learning, foster honesty, and maintain integrity in our academic processes, instructors may use a tool called Turnitin to compare a student's work with multiple sources. The tool compares each student's work with an extensive database of prior publications and papers, providing links to possible matches and a 'similarity score'. The tool does not determine whether plagiarism has occurred or not. Instead, the instructor must make a complete assessment and judge the originality of the student's work. All submissions to this course may be checked using this tool.
  
- Students should submit papers to Turnitin Dropboxes without identifying information included in the paper (e.g. name or student number). The system will automatically show this info to faculty in your course when viewing the submission, but the information will not be retained by Turnitin.

**APPENDIX A – Assignment 1 Rubric (Summary, Application, Reflection)**

	<b>Excellent</b>	<b>Needs Work</b>	<b>Not Completed</b>
<b>Introduction of Point(s):</b>	Introduction as it relates to the class content (8 Points)	Introduction is not specific and lacks the focus on class content (6 Points)	No introduction (0 Points)
<b>Summary of Point(s):</b>	Summary of the point(s) as it relates to the literature from class or other appropriate sources. (8 Points)	Summary of point(s) exists, but lacks supporting literature from class or other appropriate sources (6 Points)	No Summary (0 Points)
<b>Application of Point(s) in context:</b>	Application of the point(s) is appropriate to the learning environment (8 Points)	Application of the point does not apply directly to learning or the point(s) selected lack(s) depth as it relates to learning (6 Points)	No Application (0 or less Points)
<b>Reflection of Point(s):</b>	Reflection of the point(s) is appropriate to the learning environment and relates to Kolb’s reflective process (8 Points)	Reflection of the point does not apply directly to learning or the point(s) selected lack(s) depth as it relates to learning (6 Points)	No Reflection (0 Points)
<b>Conclusion:</b>	Conclusion is appropriate given the learning context (8 Points)	Conclusion lacks the ability to intervene the points with the grading criteria headings (6 Points)	No Conclusion (0 Points)

**APPENDIX B – Assignment 2 Rubric (Experiential Learning Lesson Handbook)**

	<b>Excellent</b>	<b>Needs Work</b>	<b>Not Completed</b>
<b>Cover Page:</b>	Cover page is indicative of the experiential learning handbook (5 Points)	Cover page exists, but does not adequately convey the message (2.5 Points)	No cover page (0 Points)
<b>Table of Contents:</b>	The Table of Contents provides a coherent list of experiential lessons as well as appendices as appropriate. (5 Points)	Table of Contents exists, but does not adequately provide the necessary information for the experiential handbook (2.5 Points)	No Table of Contents. (0 Points)
<b>Abstract:</b>	All 5 experiential learning lessons have an abstract including an overview of the lesson. (40 Points)	Less than 5 abstracts are present or are missing overviews or typologies. (20 Points)	No abstracts are provided (0 or less Points)
<b>Lesson Plan:</b>  <b>1) Entrepreneurial</b> <b>2) Scientific Inquiry</b> <b>3) Leadership or Science (Walking Stick)</b> <b>4) Any Lesson</b> <b>5) Any Lesson</b>	All 5 lesson plans provide the appropriate components including: Title, objective(s), Academic Standards/CTE standard (if appropriate), interest approach, student/teacher planning, and assessment (150 Points)	Only 3 Lesson plans are provided the appropriate components including: Title, objective(s), Academic Standards/CTE standard (if appropriate), interest approach, student/teacher planning, and assessment (75 Points)	No lesson plans (0 Points)
<b>Relevant Material and References:</b>	All 5 lesson plans have appropriate materials attached including references for any sources that were used to assist the reader in	Only 3 lesson plans have the appropriate materials attached including references for any sources that were used to assist the	No material or were included in the Handbook (0 Points)

	understanding the material needed to present the lesson. (50 Points)	reader in understanding the material needed to present the lesson. (25Points)	
<b>Assessment:</b> <b>Note that assessments may be formative or summative, authentic or traditional.</b>	All 5 lesson plans have an appropriate assessment that assists the teacher in assessing student knowledge (50 Points)	Only lesson plans have an appropriate assessment that assists the teacher in assessing student knowledge (25Points)	No assessments were provided in the Handbook (0 or less Points)

## **APPENDIX C – Sample Lesson Plan**

Course Number  
Course Title  
Semester/Trimester Year  
Lecture # or Date

### **Title of Lesson:**

This should be the title – for example, “Determining Rations for Beef Cattle.” Note the action - “ing” – this is key

### **Situation:**

It is what it is! What is the situation that you are teaching? How many students, who they are, etc.

### **On Board:**

Notes for the students. For example: FFA meeting this week, test in this class on 1/10, etc.

### **Objective(s):**

These are the CTE and Academic Content Standards that you will address in the lesson plan (See Mager, 1997). Writing a good lesson objective with the appropriate information is very important.

### **CTE Standards:**

These are the CTE and Academic Content Standards that you will address in the lesson. Take a look at this Website and scroll through the appropriate CTE standards. Note that they are very broad: <http://ctenavigator.org/programs/list/442>. Also note that we will go over this as part of class.

### **Core Standards:**

Attached is a link to the MDE Biology Document.  
[http://www.michigan.gov/documents/BIOMMC\\_168213\\_7.pdf](http://www.michigan.gov/documents/BIOMMC_168213_7.pdf). Note that this link may change based on updated standards. Additionally, Biology Standards may not be the appropriate Core Standards. Perhaps Chemistry? Social Studies? English? OR NGSS Standards as appropriate. You are the professional, you decide what is appropriate.

**Materials:**

Self-Explanatory – This is a list of everything needed for the success of the lesson plan.

**References:**

If you use books, handouts, websites, papers, etc. Put the references here.

**Interest Approach:**

What will you do to spark their interest? An interest approach can be many things. For example, having gourds on hand for students to work with if you are talking about specialty crops. Having a leg-hold trap in the front of the room and showing a YouTube video on trapping if that is the lesson topic of the day. Questioning students about statistics related to grain markets and why they are relevant. Think about, how will I spark a students' interest?

**Student/Teacher  
Planning:**

This includes everything you say or want to say specifically to students during the lesson. For example, if you want to teach them a specific formula, have the formula and the relevant facts included in the student/teacher planning. On occasion, I have seen this done as a two-column table. The left column will be “What students do” and the right column will be “What you say.”

**Problem Solution:**

The best way for students to understand a topic or material is to put it in the form of a problem or a problem to be solved. So, what is the problem to be solved? We want students to learn about how grain markets fluctuate and the reason for changes in grain markets. How do we solve this problem? What do we teach students to do to help them learn more about the problem?

**Applying Solutions:**

How do we apply the problem-solving approach and what solutions should students come up with?

**Evaluation:**

How do we evaluate student understanding in the class? Often times we think of this as a traditional paper-pencil test. This is one form of assessment. Another form would be having student build a motor. The final assessment would be actually building the motor. Think broadly about ways to assess students in both formative and summative ways.