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# Does Flipping the Classroom Lead to Learning Gains & Increase Student Satisfaction: CFANS Example-U. of Minnesota

Ward E. Nefstead  
Assoc. Professor & Extension Economist  
Dept of Applied Economics, U. Of Minnesota

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Ward E. Nefstead, Assoc.Professor & Extension Economist, Dept of Applied Economics, U. Of Minnesota

## Objectives:

1. To determine whether flipping the lecture results in learning gains
2. To investigate the conceptual basis for flipping lectures/practice
3. To determine if flipping is applicable

## Methodology:

1. Design course modules that would be amenable to flipped concept-video/online w. Moodle.
2. To execute the course modules in several courses-ApEc 3551,3451&AIM 4011.
3. To evaluate results of flipped activities in terms of course evaluations, grades earned and mastery of material.

## References:

1. Berret, Can.(feb.19,2012). How :Flipping the Classroom Can Improve the Traditional Lecture. Chronicle of Higher Education.
2. Lage MJ,,Platt GJ,Treglia M(2000).Inverting the Classroom: A Gateway to creating an inclusive learning environment. The Journal of Economic Education 31:30-

## What is Flipped Classroom Instruction?

*\*Blooms Taxonomy(2001)-students do lower levels of cognitive work outside the classroom and focus on higher forms of cognitive work in class(application/synthesis/analysis)*

## What is a Flipped Classroom?

First exposure is accomplished by readings,videos,powerpoints w. voice overs and other materials prior to class(called Inverted). Class time is spent on worksheets/mini-lectures,experiments, and small group discussions.

## Examples of Current Curricula Efforts

1. Videos in ApEc 3451, small groups discussion & worksheets.
2. Powerpoint lectures in ApEc 1251, ApEc 3451 .
3. Research readings and small group discussion in ApEc 3821, 3551.

## Assessment of “Flipped Learning”-survey

### 1. ApEc 3451/3821/3551&AIM 4011

Student satisfaction:

SOS rating- 2012-5.40/6

SOS rating -2011-5.28/6

Learning gain/grades earned.

Ave .grade-2012-A-

Ave grade- 2011-B+

Other comments:deeper understanding/more fun

**\*\*Survey- 2012/13 classes**

Appendix- B .  
Student Classroom Survey- Flipped

1. What is your grade level? Senior \_\_\_\_\_ Junior \_\_\_\_\_ sophomore \_\_\_\_\_ Freshman \_\_\_\_\_
2. Class lectures not flipped
  - During the lecture, the pace was too slow and I was bored
  - During the lecture , the pace was adequate, so I was able to concentrate on the material
  - During the lecture , the pace was too fast so I was unable to take meaningful and complete notes.
  - During the lecture, I was distracted by other students in the class.
  - During the lecture, I find it difficult to take notes and listen at the same time.
3. Class lectures (not flipped)- How often were the lectures? Once per week \_\_\_\_\_ several times per week \_\_\_\_\_ every day \_\_\_\_\_ Infrequent \_\_\_\_\_
4. Flipped classroom- How often were the following items used in class.
  - Video lecture- Once \_\_\_\_\_ two /three times \_\_\_\_\_ More than three times \_\_\_\_\_
  - Did you take notes during the video lecture? Yes \_\_\_\_\_ No \_\_\_\_\_
5. What class activities were used for the Flipped Classroom?
  - Video lectures
  - Demonstrations
  - Labs
  - Homework
  - Peer tutoring
  - Teacher-student tutoring
  - Enrichment activities-research and other
  - Class discussions/small group assignments
6. Which of these activities was the most useful in conveying the course material?
7. Homework completion
  - Were you able to easily complete the homework assignments in class? Yes, always \_\_\_\_\_ yes,sometimes \_\_\_\_\_ No \_\_\_\_\_