

**Design, implementation, and
effectiveness of flipped classroom
and debate in ACF404 (Money and
Banking)**

Qing Ye and Jie Zhang

Issues in ACF404

- Diversity in student backgrounds
 - what is the appropriate teaching pace?
- Information intensive
 - not enough opportunities to pursue a deeper understanding
- Difficult to engage students
 - little class interaction

Consequences

- Unsatisfactory student performance
 - 52%-54% average marks for final exam
- High failure rate
 - over 30% for final exams
- Great diversity in student performance
 - over 18% s.d. in final exam marks

Solution

- Flipped classroom
 - lectures are presented as homework outside of class in online videos
 - class time is reserved for student-centered activities
- Group debate assessment
 - presupposes an established position, pro or con, on a controversial issue.
 - students work as a team to carry research on the debating topic and prepare arguments
 - ask cogent questions, listen to different perspectives and defend their own position based on logics and evidences

Benefits of flipped classroom

- maximize class time for student-centered activities without sacrificing the content
- increased interaction between teachers and students
- allow for personalization of learning
- smaller sections for knowledge acquisition
- improved learning achievement

Implementation of the flipped classroom in ACF404

- high set up costs
 - we created videos by a screen recorder “BB Flashback” and upload the videos to ICE one week before the class
 - half of the module is “flipped”
 - each lecture is divided into several parts
- students may be less self-disciplined
 - class activities are closely tied to the video contents
 - online videos are displayed for limited time
- no opportunities to ask questions
 - contents briefing and Q&A before class

Implementation of the flipped classroom in ACF404

- Students-centered in-class activities
 - *Group discussion on relevant topics*
 - *Numerical analysis and exercises*
 - *Case study and discussion*
 - *Documentary watching*
 - *Group debate*

Class activities

8

- Lecture briefing and Q&A
- **Group discussion:** Asymmetric information and financial crisis
- **Mock debate and feedback session**

9

- Lecture briefing and Q&A
- **Exercises:** Assets and liabilities in banks
- **Group discussion:** Bank capital management
- **Case study and group discussion:** Bank runs in Northern Rock

10

- Lecture briefing and Q&A
- **Case study and group discussion:** The interest rate risk of Fannie Mae and Freddie Mac

11

- Lecture briefing and Q&A
- **Numerical analysis** related to credit risk: equity capital and moral hazard problem; collaterals and adverse selection problem.
- **Debate:** Should the US central bank raise interest rates ?

12

- Lecture briefing and Q&A
- **Numerical analysis** related to credit risk: capital rationing and adverse selection problem
- **Debate:** Should the ECB expand its QE scheme?

13

- Lecture briefing and Q&A
- **Documentary watching:** Inside job (about subprime crisis)
- **Group discussion:** The root causes of the subprime crisis

Solution

- Flipped classroom
 - lectures are presented as homework outside of class in online videos
 - class time is reserved for student-centered activities
- Group debate assessment
 - presupposes an established position, pro or con, on a controversial issue.
 - students work as a team to carry research on the debating topic and prepare arguments
 - ask cogent questions, listen to different perspectives and defend their own position based on logics and evidences

Benefits of debate assessment

- promote active learning
- develop logical and critical thinking
- enhance communication skills
- audience also learns

Implementation of debate in ACF404

- **Grouping:** 4 groups (5-6 per group)
- **Topics:** two topics about monetary policies
- **Debate stages:** opening statement, rebuttal, free debate, audience discussion, closing statement
- **Assessments:** arguments, evidence, reasoning, logic thinking, effective communication; 20% mark is attributed to individual performance
- The division of groups, defending position of each group were decided randomly, speaking member in rebuttal stage is also randomly decided

Effectiveness of the innovations

- **Student satisfaction:** positive comments in the module questionnaire
- **Student performance:** increased average marks, declined standard deviation and failure rate
- **Student perception**
- **Attendance**

	Coursework	Presentation /Debate	Final Exam	Overall
<u>2013-2014 (No. students 20)</u>				
Mean	69.0%	65.2%	52.6%	56.9%
Standard deviation	9.8%	5.1%	18.0%	14.8%
Min	50.0%	55.0%	11.0%	23.5%
Max	86.7%	72.0%	81.0%	80.5%
No. students failed	0	0	6	4
Failure rate	0%	0%	30.0%	20.0%
<u>2014-2015 (No. students 14)</u>				
Mean	64.5%	65.8%	54.3%	57.5%
Standard deviation	2.9%	3.5%	18.2%	12.9%
Min	58.5%	60.0%	25.0%	36.3%
Max	68.9%	68.5%	85.5%	80.2%
No. students failed	0	0	5	3
Failure rate	0%	0%	35.7%	21.4%
<u>2015-2016 (No. students 21)</u>				
Mean	76.1%	67.9%	59.7%	63.4%
Standard deviation	11.8%	3.1%	15.4%	12.1%
Min	34.0%	64.0%	16.0%	26.1%
Max	89.0%	73.5%	80.0%	77.9%
No. students failed	1	0	3	2
Failure rate	4.8%	0%	14.3%	9.5%

Effectiveness of the innovations

- **Student perception on flipped classroom:**
 - all students believe (i.e., agree or strongly agree) that the online lectures allow them to study at their own pace
 - more than 81.25% of the students believe that online lectures are helpful in supporting students with varying needs, background knowledge, ability levels and learning styles
 - 75% believe that the flipped classroom approach allows more time for class activities which are effective for students to develop communication and analytical skills (87.50%) and to build a bridge between theories and practice (81.25%).
 - 81.25% and 62.50% of students indicated case study and debate are most effective in enhancing their learning experience; only 43.75% choose class discussion

Effectiveness of the innovations

- **Student perception on debate:**
 - 85.7% of the debaters indicated that they have learned a lot in preparing for the debate.
 - 71.4% of the debaters agree that debate is better than class discussion for controversial topics
 - 95% of the debaters agree that debate improved their critical thinking skills and communication skills
 - 95% of the debaters agree that debate preparation is a good teamwork experience
 - 50% of the audience changed their opinions after the debate
 - 90% of the audience suggest that they have learned and improved their understanding of the topic from the debate

Effectiveness of the innovations

- **Attendance**

	<u>week1</u>	<u>week2</u>	<u>week3</u>	<u>week4</u>	<u>week5</u>	<u>week6</u>
No. Students	19	19	20	19	19	19
Percentage	90.5%	90.5%	95.2%	90.5%	90.5%	90.5%
	<u>week8</u>	<u>week9</u>	<u>week10</u>	<u>week11</u>	<u>week12</u>	<u>week13</u>
No. Students	19	13	19	18	10	18
Percentage	90.5%	61.9%	90.5%	85.7%	47.5%	80.9%

Suggestions

- combining the class activities with assessment
- ways to increase the timely communication between students and teaching staff
- 81.25% of the students indicate that they prefer several short videos compared to a long video with the same total length. 68.75% of them indicate between 10 and 20 minutes is the ideal length of online lecture videos
- 87.50% of the students suggest that they prefer a combination of traditional lectures and flipped classrooms