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# Blended versus Face-to-Face: Evidence from Graduate Corporate Finance Class

Maretno Agus Harjoto



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# **Blended versus Face-to-Face: Evidence from Graduate Corporate Finance Class**

## **Abstract**

This study compares students' perceptions on pre-lecture videos to replace face-to-face classes in blended and face-to-face (F2F) for graduate corporate finance class. Using 176 anonymous survey responses from eight F2F and two blended classes during 2014 to 2016, I find that students in blended classes have higher perceptions that pre-lecture videos could replace face-to-face classes than students in F2F classes. Students in blended classes seem to have greater understanding of a flipped lecture format and they perform better than F2F classes. Students in blended classes also tend to rate the instructor's teaching effectiveness lower than the F2F classes.

**Keywords:** Blended learning, pre-lecture videos, flipped lecture, teaching effectiveness

## **Introduction**

Distance learning and the use technology to facilitate students' learning has become increasingly topical subject in higher education. The skeptics of distance learning continue to debate whether students can learn from asynchronous videos (audios) and show evidence that face-to-face (F2F) communication cannot be completely replaced by the use of technology (Kerr and Hiltz, 1982; Hiltz, 1986). Earlier literature that examine the effectiveness of communication via videos (audios) conferencing have also shown that a video (audio) meeting is not as effective as a face-to-face meeting (Ryan, 1976; Williams, 1978). Yet, there has been an astounding growth of distance learning for higher education in the past two decades (Allen and Seaman, 2011; Arbaugh and Hwang, 2013).

One modality that has become popular in higher education is a blend between F2F and online or a *blended* learning (Allen et al., 2007; Garrison and Kanuka, 2004). Graham (2006) summarizes the definition of a blended learning as a combination online and face-to-face instructional methods. While the online component in blended classes could vary from 20% to 79% (Arbaugh, 2014), the most critical aspect of a blended learning is how the three aspects of learning (cognitive, social, and teaching presence) intersect (Garrison et al., 1999).

Research in blended learning is still relatively new (Halverson et al., 2012). Garrison and Kanuka (2004) indicates that it is critical to distinguish a blended learning from an online learning. Arbaugh et al. (2009) indicate that while there has been significant progress in current literature that compare online and blended learning in management discipline, literature in other disciplines outside of organizational behavior and strategic management courses are lagging. My study fills this void in the literature. I compare graduate students' perceptions on pre-lecture videos and

students' academic performance and satisfaction (rating) on their instructor's teaching effectiveness between blended and F2F in a corporate finance class.

## **Literature Review**

Extant research in blended learning environment is still limited. López-Pérez et al. (2011) indicate that blended learning reduces dropout rates and improves final course grades. Arbaugh (2014) argues that blended learning creates opportunities to enhance students' learning through self-paced learning and group collaboration. Halverson et al. (2012) find that very little research in blended learning has been done in business education journals. They find that most of blended learning are taking place in journals that focus on educational technology and distance education. Thus, we turn our attention to existing literature that compares online and F2F learning environments as well as extant research on integrating technology to facilitate students' learning.

Existing literature that examine students' academic performance in an online setting relative to the traditional face-to-face setting is still mixed. Calafiore and Damianov (2011) compare students' achievement in economics and finance courses between online (Blackboard) and F2F classes and find that online students have lower letter grade than F2F students. Farinella (2007) examines students' performance between online and F2F for undergraduate introductory finance courses and finds that students in online classes significantly perform worse than students in F2F classes. In contrast, Means et al. (2009) find that students who took part or all their classes online perform better than those taking the same course through traditional F2F classes. Ni (2002) finds that student performance is independent of the mode of instruction (online or F2F). However, she indicates that certain courses (i.e., research methods) are more challenging to students to perform well in an online environment.

Empirical evidence in students' satisfaction between online (distance) and face-to-face classes generally find that the average instructors' teaching effectiveness in an online class tends to be lower than a F2F class (Allen et al., 2002). Johnson et al. (2000) find that students in F2F courses have more positive perceptions about their instructors and overall course quality than online classes. Ni (2002) and Farinella (2007) find that instructor earns significantly lower students' evaluations in an online course compared to a traditional F2F course.

Integrating technology into teaching has become a critical part of the instructional success especially in blended classes that have some online learning component. An emerging teaching method that is closely related to the adoption of technology to enhance students' engagement is a *flipped* teaching method. The main idea of a flipped teaching is to reverse the order of students learning by requiring students to learn the lecture at home and use the classroom time to do their homework and problems (Bishop and Verleger, 2013; Alvarez, 2012; Moravec et al., 2010). Arbaugh (2014) indicates that integrating the flipped lecture concept in blended learning would enhance students' transformational learning.

Arbaugh and Hwang (2012) indicate that there are extensive studies on the effectiveness of online MBA and students' assessment of online MBA delivery. However, there is a limited existing study that focuses on the impacts of pre-lecture videos on students' performance at the graduate level courses (Kim and Chen, 2011; Seery and Donnelly, 2012) and no existing study that examines interrelationships among students' perceptions on teaching effectiveness, their perceptions on pre-lecture videos, and a flipped teaching method in blended learning finance classes altogether (Arbaugh et al., 2009; Calafiore and Damianov, 2011). My study addresses these gaps.

## **Pre-lecture Videos, Blended Class, and Survey Methodology**

### **Pre-lecture Videos**

In order to examine students' perceptions of pre-lecture videos, the instructor created two types of videos (screencast and Youtube) in addition to face-to-face in-class lectures on whiteboards, in-class power point slide lectures, assigning reading on certain pages of the textbook, and other methods of learning such as study group and in-class and outside of the class discussions. Thus, students are simultaneously exposed and experienced six different methods of learning in every week.

The screencast videos contain pre-lecture recordings that show basic step-by-step lectures as the instructor manually handwrite and explain the lecture on blank power point slides using a tablet personal computer (tablet PC). Both handwritings and voices are recorded using the TechSmith® Relay (i.e., <http://www.screencast.com/t/xUehmsyT>). The instructor posted these handwritten videos on the screencast.com. The Youtube® videos are created by videotaping herself/himself in a classroom without students on pre-written whiteboards. The instructor explains the same basic step-by-step lectures as screencast lectures and posted these videos on the Youtube unlisted channel platform (i.e., <http://www.youtube.com/watch?v=oe6gdlK6zXw>). .

### **Blended Class**

The blended class consists of approximately 40 percent face-to-face classes and 60 percent online classes. Similar to the face-to-face class, the blended class is delivered in 14 weeks and exams in blended class were conducted during face-to-face classes. The class contents are identical and the instructor is the same for both F2F and blended classes. Student composition for blended classes tend to be older, more work experience, live within more distance proximities from one another compared to the students in F2F class, and they took less classes due to their intensive

work schedules. Most students in blended class indicated the reason for taking blended classes is the flexibility of schedules for a blended class that fit their work schedules but yet it still offers opportunities for face-to-face interactions with their instructor and classmates.

### **Survey Methodology**

In the beginning of each semester, graduate students who were enrolled in sections of corporate finance (financial management) core course both F2F and blended taught by the same instructor at a regional Western university, were informed that they are required to watch the pre-lecture videos prior to coming to in-class lectures and that the class will be taught in a flipped lecture format. Students were provided with screencast and Youtube videos. The instructor reminded students to watch their assigned videos every week prior to in-class lectures via email and an announcement in their course management system (Sakai<sup>®</sup>). Seven weeks after the class began, students took their midterm exam. The following week, their graded midterm exam was returned and students took a paper and pencil anonymous survey in-class in both F2F and blended classes (<https://drive.google.com/file/d/0B4cd03Rf6CzMOGRDTmk1b19hdUE/>). Anonymous (self-reported) students' surveys were collected across 10 different class sections in spring 2014 until spring 2016. The total number of students and the number of usable survey responses collected in each class section are summarized in Appendix A. The survey results are tabulated from paper and pencil (hardcopies) into an excel spreadsheet. The data is randomized and it is analyzed using the Stata<sup>®</sup> 12 statistical software.

[Insert Table 1 here]

## Descriptive Statistics

Table 1 present the descriptive statistics (means) from completed students responses for all sample and univariate analysis for blended and F2Fclasses and the variables descriptions are listed in Appendix B. On average, students in blended classes watch the pre-lecture videos more than students in F2F classes (2.3 and 1.3 respectively). This result is expected since blended students have to utilize the pre-lecture videos to replace their face-to-face lectures.

I find that the traditional lecture on whiteboards (Whiteboard) where the instructor writes and explains the concepts using whiteboards during face-to-face classes (2.1) is still the most preferred method of learning for students in F2F classes. In contrast, I find that blended students prefer the Youtube (Youtube) pre-lecture videos (1.8) as the most effective way of learning relative to the whiteboards (2.2). I also find that blended students prefer the Youtube videos more than F2F students while F2F students prefer power point lectures (PowerPoint) more than blended students. Overall, I find evidence that blended students have different learning modalities compared to students in F2F classes.

I find that there is no difference in students' perception between blended and F2F classes regarding the effectiveness of the Youtube (YoutubeEffective) and the screencast (ScreencastEffective) to help students learn and understand the class contents. I also do not find any statistical difference between F2F and blended students' perception on Youtube and screencast helped them to earn a better grade. These findings are consistent with the fact that students still need to put effort to learn on their own and need to interact with their classmates (Balkin et al., 2005; Coogle and Floyd, 2015) regardless the medium of learning (synchronous or asynchronous). However, I find that students in blended classes favor both Youtube and screencast videos as substitutes for in-class face-to-face synchronous lecture (YoutubeReplace and

ScreenCastReplace). Additionally, I find that blended students have higher perception that their classes are flipped lecture class than F2F students while F2F students have higher perceptions than blended students that homework and practice quizzes problems helped them to earn a better grade in class. Again, these indicate that blended students tend to have different learning methods compared to F2F students.

I find that blended students spent significantly more hours to study (Hourstudy) and believe that they need to put more hours to study on their own (Reqhourstudy) than F2F students. Blended students are more likely to engage in a study group. Blended students also tend to have lower number of classes than F2F students because they need to spend considerable amount of time studying on their own. I also find that blended students tend to have slightly higher cumulative grade point average (GPA), higher percentage of female students, less percentage of international students, older students, and have more work experience.

I also find that blended students seems to have higher midterm exam and seems to indicate that they like the class. This indicates that blended students' academic performance seem to be higher and that they also perceived more positively with their class instructional processes than F2F students. The Cronbach's alphas are between 0.67 and 0.79 which indicate that internal consistency and reliability of psychometric tests for the variables and data used in my study are considered acceptable (0.6) to good (0.8) (Cronbach, 1951; Nunnally, 1979).

[Insert Table 2 here]

## **Multivariate Regression Analysis**

In order to carefully examine the systematic difference of students' perceptions on pre-lecture videos, academic performance (midterm exam and expected grade), and their perception on instructor's teaching effectiveness in blended versus F2F classes while controlling for other attributes and students' demographic factors, I conduct multivariate regression analyses. First, I conduct the Akaike Information Criterion (AIC) test (Akaike, 1974) to determine the most relevant independent variables that explain students' perceptions on Youtube videos, screencast videos, midterm exam, expected grade, and teaching effectiveness. Then, based on the AIC tests (Lindsey and Sheather, 2010), I use twelve independent variables (covariate) that are considered as the most relevant in our multivariate regression analysis in Table 2.

Our first dependent variable is the students' perception on whether Youtube pre-lecture videos could potentially replace the in-class (synchronous) lectures (YoutubeReplace). Since this variable has ordinal values based on the five point Likert scale, I use the ordered probit regression. The first column of Table 2 shows that students in blended class (Blended) significantly have stronger beliefs that Youtube pre-lecture videos could potentially replace the in-class lectures (YoutubeReplace) by 1.12 points higher than students in F2F class (a lower value of the dependent variable indicates that students are moving toward strongly agree that Youtube video can replace an in-class lecture). Given that the average F2F students' perception on Youtube pre-lecture videos to replace the in-class lectures (YoutubeReplace) is between agree and neutral (2.79), this 1.12 points higher indicates that blended students agree to strongly agree that Youtube pre-lecture videos could potentially replace the in-class lectures (YoutubeReplace).

I find that students who perceived homework and practice quizzes problems helped them to earn a better grade (HWQuizGrade) have lower perception that Youtube videos could replace in-class synchronous lectures. I also find that students who strongly believe that their classes are

structured as a flipped lecture (Flipped) is positively related with their beliefs that the Youtube videos could potentially replace the in-class synchronous (face-to-face) lectures. This finding indicates that there is a positive relation between students' understanding of flipped lecture format and their perception that Youtube pre-lecture videos could potentially replace the in-class synchronous lectures. I find older students tend to have lower perceptions while international students are more likely to have greater perception that Youtube videos could replace in-class lectures.

The second dependent variable is the students' perception on whether screencast pre-lecture videos could potentially replace the in-class (synchronous) lectures (ScreencastReplace). Again, I use the ordered probit regression since the dependent variable has ordinal values. I find that blended students have significantly stronger perception that screencast pre-lecture videos could potentially replace the in-class lectures (ScreencastReplace) by 1.08 points higher than students in F2F class. Given that the average F2F students' perception on screencast pre-lecture videos to replace the in-class lectures (ScreencastReplace) is close to neutral (2.97), this 1.08 points higher indicates that blended students agree that screencast pre-lecture videos could potentially replace the in-class lectures (ScreencastReplace). I also find that there is a positive relation between students' understanding of flipped lecture format and their perception that screencast pre-lecture videos could potentially replace the in-class. I find that students' age is less likely to believe that screencast pre-lecture videos could potentially replace the in-class lectures while international students are more likely to believe that screencast pre-lecture videos could potentially replace the in-class lectures.

The third and fourth dependent variables are their self-reported midterm exam scores (MidtermExam) and expected course grades (ExpectGrade) as measures of students' academic

success. Since these two dependent variables are continuous variables from 0 to 100, I used the ordinary least square method to estimate these regressions. I find that on average, blended students earned 5.82 points (percent) higher in their midterm exam than F2F students. Given the average midterm exam scores for F2F students is 82.46 (B minus), then 5.82 higher represents a significant increase in students' average midterm scores from B minus (82 to 85 points) to a B or B plus (88) for blended students. I also find that blended students have higher expectation on their course grade by 0.30 points. Since the average expected grade for F2F students is 3.54 (B plus), this 0.30 points represents an increase in students' expectation of their course grade from a B plus to an A minus (above 3.75).

I find that students' cumulative grade point average (GPA) is positively related to their midterm exam and expected grade in the class. I find international students tend to have higher midterm exam and higher expected grade in the class. I also find evidence that students who believe that homework and practice quizzes helped them to earn a better grade are more likely to have higher midterm exam.

Last but not least, I examine the structural difference in blended versus F2F students' perception on overall instructor's teaching effectiveness (TeachingEffectiveness). Since this dependent variable has ordinal values, I use the ordered probit regression. I find that blended students tend to rate their instructor 0.43 point lower than F2F students. Given the average students' rating on teaching effectiveness is between effective to very effective (1.4), this 0.43 point lower in instructor's teaching effectiveness represent a reduction in teaching effectiveness from very effective (1) to effective (2) or effective (2) to neutral (3). This finding is consistent with existing studies which indicate that students in online learning environment tend to rate their instructors' teaching effectiveness lower than F2F classes because students have less interactions

with their instructors in an online learning environment than a F2F environment (Allen et al., 2002; Farinella, 2007; Johnson et al., 2000; Ni, 2002).

I find that students who believe that assigned homework and practice quizzes helped them to earn a better grade, students who have better understanding that their classes are taught in flipped lecture format, those with higher GPA, international students, and those who like the class tend to give a higher rating on their instructor's teaching effectiveness while students who take more classes concurrently tend to give a lower rating.

## **Discussion and Conclusion**

The landscape of delivering lectures and courses that are considered effective to students in higher education has evolved due to changes in students' lifestyle, learning preference, technology (i.e., cloud), and the landscape of market competition in higher education. Advancement in the technology has made it easy and less costly to deliver lectures to students via the internet. Many schools and universities, especially business schools, have responded to these changes by offering online and blended courses that offers video lectures to students at no cost. However, some research studies indicate that the effectiveness of these online video lectures, measured by students' overall grade and students' level of learning is still questionable.

In this paper, I examine the difference in students' perceptions on pre-lecture videos using a bite-size short videos (Youtube) and a longer pre-lecture videos (screencast) in blended classes versus face-to-face (F2F) classes. I find that blended students tend to have higher preference toward pre-lecture videos, especially short videos (Youtube), than F2F students. Blended students believe that pre-lecture videos could potentially replace the in-class synchronous lectures. Blended students also tend to have a strong perception that their classes are structured as a flipped lecture

than F2F students. Overall, blended students tend to have a better understanding for the role of pre-lecture videos and flipped lecture format than F2F students. However, I find that blended students tend to provide a lower rating on their instructor's overall teaching effectiveness.

There are four main implications of my findings. First, students in blended classes tend to have different learning modalities compared to students in F2F classes. Second, students in blended classes tend to have a better understanding than F2F students that their classes are structured in a flipped lecture format since they have significantly less face-to-face engagements with their instructors. Therefore, blended students recognize the importance of pre-lecture videos to enhance their learning in a flipped lecture environment. Third, students in blended class earn a better academic performance (grade) than F2F class. However, I find evidence that they tend to rate their instructor's overall teaching effectiveness lower than students in F2F class because students have less direct interactions with their instructor and the role of instructors in students' learning experience for blended class has shifted away from the instructors centric learning modality (King, 1993; Moore, 1993).

There are several limitations of my study. First, my study examines students' perceptions on required (non-elective) corporate finance course. Second, this study is drawn from a survey that is done in a single instructor throughout three academic years. Students' responses may not reflect the average students' perceptions across different cohorts and instructors. Future research can address these limitations by expanding this study to different programs (i.e. blended, online, and executive programs), different finance courses, and different instructors.

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**Appendix A**  
**Data Collections from anonymous Students' Surveys**

Semester/Class Section	Number of Students	Number of Usable Responses
Spring 2014/Section 12	17	10
Spring2014/Section 13	15	10
Spring 2014/Section 17	18	9
Summer 2014/Section 35Blended	14	11
Spring 2015/Section 03	25	24
Spring 2015/Section 07	27	27
Fall 2015/Section 11	25	23
Fall 2015/Section 13	25	24
Fall 2015/Section 14	25	17
Spring 2016/ Section 35Blended	24	21
Total	215	176

## Appendix B

### Variables Descriptions

Variables	Descriptions
Frequency	How many times students watched each pre-lecture video
PowerPoint	Rating on the effectiveness of PowerPoint slides as a learning method relative other 5 methods
Whiteboard	Rating on the effectiveness of Whiteboard as a learning method relative other 5 methods
Screencast	Rating on the effectiveness of Screencast pre-lecture videos as a learning method relative other 5 methods
Textbook	Rating on the effectiveness of reading the textbook as a learning method relative other 5 methods
Youtube	Rating on the effectiveness of Youtube pre-lecture videos as a learning method relative other 5 methods
Other	Rating on the effectiveness of other methods (i.e. tutoring, study group, chat room, etc.) as a learning method relative other 5 methods
YoutubeEffective	Rating on the effectiveness of Youtube pre-lecture to assist students learning and understanding of class contents
ScreencastEffective	Rating on the effectiveness of Screencast pre-lecture to assist students learning and understanding of class contents
YoutubeReplace	Perception that Youtube pre-lecture videos can replace the F2F in-class lecture
ScreencastReplace	Perception that Screencast pre-lecture videos can replace the F2F in-class lecture
YoutubeGrade	Perception that Youtube pre-lecture videos help them to earn a better grade
ScreencastGrade	Perception that Screencast pre-lecture videos help them to earn a better grade
HwQuizGrade	Perception that homework, exercises, and quizzes help them to earn a better grade
Flipped	Perception that their current class is considered as a “flipped lecture” class
Hourstudy	Number of hours students spent to study for this finance class per week
Reqhourstudy	Number of hours students believe they should spend to study for this finance class per week
Studygroup	How often students engaged in study group with their classmates
CumGPA	Students’ current cumulative grade point average (GPA) in the program
NumClass	Number of classes students are currently taking including this finance class
Undergrad	Students’ undergraduate majors (Art/Language, Science, Math/Stats, Engineering, Business/Econ, or Other)
Age	Students’ current age
Gender	Students’ gender equals one if students are female and zero otherwise
International	Whether students are international students (equals one) or not (equals zero)
WorkExperience	Number of years of students’ work experience
Midterm Exam	Midterm exam grades that students received
Expected Grade	Students’ expectation of their course grades at the end of the semester
Teaching Effectiveness	Rating on teacher/instructor effectiveness from (1) very effective to (5) very ineffective
LikeClass	Whether students like the class (equals one) or not (equals zero) to measure students’ personal preference or biases toward their current finance class/instructor
LikeVideo	Whether students like the pre-lecture videos (equals one) or not (equals zero) to measure students’ personal preference or biases toward the pre-lecture videos

**Table 1: Descriptive Statistics**

Variable	All Sample	Blended	F2F	T-test
Frequency	1.476	2.313	1.290	8.72***
PowerPoint	3.335	3.781	3.236	2.26**
Whiteboard	2.114	2.188	2.097	0.35
Screencast	3.210	2.969	3.264	-1.06
Textbook	5.057	5.313	5	1.34
Youtube	2.574	1.813	2.743	-3.62***
Other	4.670	5	4.597	1.36
YoutubeEffective	1.705	1.531	1.743	1.31
ScreencastEffective	2.091	2.094	2.090	0.02
YoutubeReplace	2.608	1.781	2.792	-4.14***
ScreencastReplace	2.864	2.375	2.972	-2.34**
YoutubeGrade	1.807	1.594	1.854	-1.43
ScreencastGrade	2.165	2	2.201	-1.05
HwQuizGrade	1.438	1.781	1.361	3.12***
Flipped	2.381	2.031	2.458	-2.06**
Hourstudy	6.259	10.813	5.247	7.61***
Reqhourstudy	8.622	13.813	7.469	6.50***
Studygroup	3.455	3.094	3.535	-1.93*
CumGPA	3.475	3.544	3.460	1.77*
NumClass	4.040	2.125	4.465	-18.44***
Undergrad	4.352	3.938	4.444	-1.81*
Age	25.750	28.563	25.125	5.17***
Gender	0.506	0.781	0.444	3.55***
International	0.534	0.063	0.638	6.56***
WorkExperience	3.495	7.953	2.505	8.32**
Midterm Exam	83.224	86.656	82.462	2.44**
Expected Grade	3.557	3.538	3.561	0.27
Teaching Effectiveness	1.420	1.531	1.396	1.23
LikeClass	0.153	0.344	0.111	3.39**
LikeVideo	0.199	0.25	0.188	0.79
Cronbach's Alpha	0.732	0.671	0.795	
Sample size	176	144	32	

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. See Appendix B for variables descriptions.

**Table 2: Multivariate Regression Analysis**

	<b>Youtube Replace</b>	<b>Screencast Replace</b>	<b>Midterm Exam</b>	<b>Expected Grade</b>	<b>Teaching Effectiveness</b>
Blended	-1.1156 (3.38)***	-1.0779 (3.03)***	5.8177 (2.64)**	0.2980 (2.26)**	0.4298 (2.93)***
Youtube	0.2901 (4.51)***	0.1809 (6.07)***	-0.2851 (0.41)	-0.0352 (1.55)	-0.0257 (1.08)
Screencast	-0.0551 (0.80)	0.2549 (6.56)***	0.2394 (0.47)	0.0062 (0.29)	0.0522 (0.74)
HWQuizGrade	-0.1864 (3.17)***	-0.0237 (0.27)	-1.9036 (1.93)*	-0.0562 (1.34)	0.5842 (3.80)***
Flipped	0.2675 (1.96)*	0.1525 (1.85)*	0.7946 (0.88)	-0.0013 (0.05)	0.1611 (2.67)***
CumGPA	-0.2472 (0.86)	-0.3582 (1.16)	11.7111 (2.64)**	0.5786 (4.71)***	-1.1800 (2.14)**
NumClass	-0.1184 (0.97)	-0.1733 (1.32)	-0.2075 (0.13)	0.0354 (0.67)	0.9767 (2.62)***
Undergrad	0.0403 (0.81)	0.0195 (0.42)	-0.1020 (0.27)	-0.0057 (0.27)	0.1057 (1.89)*
Age	0.0407 (2.07)**	0.0596 (5.50)***	0.0265 (0.14)	-0.0034 (0.35)	0.0156 (0.55)
International	-0.5570 (2.04)**	-0.4494 (2.39)**	4.1401 (2.15)*	0.4884 (6.59)***	-0.5952 (1.74)*
LikeClass	-0.3152 (1.51)	-0.1472 (0.80)	0.3412 (0.19)	-0.0600 (0.71)	-0.6419 (2.60)***
LikeVideo	0.0264 (0.19)	0.1869 (0.93)	0.1891 (0.14)	0.1420 (1.85)*	-0.1104 (0.61)
Intercept	-	-	40.5738 (2.04)*	1.3365 (2.26)**	-
Observations	176	176	176	176	176
R-squared	0.1008	0.0929	0.2004	0.3562	0.1668

Robust t statistics in parentheses with clustered standard errors by class section. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. See Appendix B for variables descriptions.