

Student perceptions of a flipped classroom management course

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Abstract

Purpose – The purpose of this paper is twofold: first, to assess student perceptions of a flipped classroom model used in an introduction to management course; and second, to determine the relationship between student perceptions and student grades.

Design/methodology/approach – A quantitative approach was used, and a survey was created to assess student perceptions of their flipped classroom experience. Correlation analysis was used to explore the possible association between student performance (measured by test scores) and perceptions of the flipped classroom experience.

Findings – Results indicate several significant differences in student perceptions of a flipped classroom model between successful (grades A-C) and unsuccessful (grades D-F) students.

Originality/value – During the past several years, an active learning approach called the “flipped classroom model” has begun to be applied to higher education. Research on the effectiveness of the flipped classroom model in higher education has focussed on either grade outcomes or student perceptions, and is recent and limited. Findings can contribute to educators using a flipped classroom model, as well as to researchers investigating the impact of key factors related to student perceptions of their flipped classroom experience. Implications for applying the flipped classroom model are discussed along with implications for much-needed future research.

Keywords Impact on grades, Introduction to management course, Student perceptions of flipping the classroom

Paper type Research paper

Introduction

For many years, educators have known that active learning environments are generally more effective in students learn than are passive, lecture-dominated learning environments. Research on active learning has shown that it contributes to student learning, achievement, and engagement (Hake, 1998; Prince, 2004; Knight and Wood, 2005; Freeman *et al.*, 2007; Chaplin, 2009). During the past several years, an active learning approach called the “flipped classroom model” has begun to be applied to higher education. This approach, initially referred to as “inverted instruction” (Lage *et al.*, 2000), emphasizes creating a more active learning environment by moving passive learning activities outside the classroom, and utilizing classroom time for active learning activities, such as interactive discussions, solving application-oriented problems, participating in group exercises, and more (Strayer, 2007, 2012; Bergmann and Sams, 2012; Bergman, 2013). The work of the European Commission on creative classrooms over the past decade has identified the flipped classroom as an important model supporting informal learning, which has the potential to lead to more innovative teaching (Bocconi *et al.*, 2012). Inverted (flipped) classes often use pre-recorded video lectures assigned to students to watch as pre-work (aka homework), and focus class time on practicing applications of course concepts. Passive learning activities are



pushed out of the classroom so that limited class time can become more active, in order to facilitate higher level understanding and develop skills in the application of key concepts. The flipped classroom is potentially more learning-centered as the instructor focusses class time and face-to-face interactions on deepening students' initial conceptual understanding attained from preparing for class (watching videos, reading assigned texts, etc.). In essence, the home – or wherever the student views the video lecture – is transformed into the lecture space, and the classroom is flipped and becomes a space to facilitate higher level understanding and application of key concepts. Moreover, a flipped classroom is specifically redesigned to be more learning-centered where the instructor focusses on using class time to add value to the understanding the students has attained from watching the recorded video material and completing the assigned readings. In this regard, Strayer (2012, p. 171) states that the flipped classroom “moves the lecture outside the classrooms and uses learning activities to move practice with the concepts inside the classroom.” Emerging definitions of the flipped classroom indicate that activities such as practice exercises, group-based problem solving, and Q&A sessions occur during classroom-based meetings, with video lectures occur outside of class (Arbaugh, 2014; Bishop and Verleger, 2013; Bruff *et al.*, 2014). Although there are various ways that educators implement flipped instruction, flipped classrooms share five key characteristics: first, the instructional process transforms students from passive to active learners; second, technology facilitates the approach; third, class time and traditional homework time are inverted so that homework is completed first; fourth, content is given context so that it relates to real-world scenarios; and finally, class time is used to help students engage in higher order, critical thinking and problem solving and to help students grasp particularly challenging concepts (Bergmann and Sams, 2012).

Purpose of the study

The primary purpose of the study is twofold: first, to assess student perceptions of a flipped classroom; and second, to determine the relationship between student perceptions and student grades.

Review of the literature

Research focussing on the effectiveness of the flipped classroom approach in higher education has focussed on either grade outcomes or student perceptions, and is recent and limited (Albert and Beatty, 2014; Arbaugh, 2014; Davies *et al.*, 2013). Few published studies have focussed on the impact of a flipped classroom on grades. Of the four studies we identified that focussed on grades, two focussed on core business courses and found no difference between the flipped classroom and the lecture class (Davies *et al.*, 2013; Findlay-Thompson and Mombourquette, 2014). Two other studies focussed on a pharmacy and an electrical engineering course, and found higher grades in the flipped classroom (Ferrerri and O'Connor, 2013; Papadopoulos and Roman, 2010). Albert and Beatty (2014) assessed the impact of a flipped classroom vs a lecture class on grades in an introduction to management course. Compared to the prior lecture class taught by the same instructor using the same text and tests, results indicated that grades on all three exams were higher, and grades on two of three exams were significantly higher.

The literature focussing on the impact of the flipped classroom model on student perceptions is also limited. A recent review by Bishop and Verleger (2013) found

11 studies focussed on student perceptions of the flipped classroom. They report that results have been consistent; student opinion in general is positive, with a significant minority having some negative views. Bates and Galloway (2012) found that 80 percent of first-year physics students preferred the flipped classroom to lecture. Schullery *et al.* (2011) found a generally positive response from students in a flipped introductory business course, although many (32 percent) preferred a traditional lecture course. Enfield (2013) found that students in a multimedia course reported that the flipped class approach was an engaging learning experience, and that it helped students learn the content and increased their ability to work independently. A recent meta-analysis of 12 case studies of flipped classroom in Asian classrooms[1] found that 90 percent of student preferred the flipped classroom to traditional (lecture-oriented) classes (Chua and Lateef, 2014). It is important to note that these studies have not connected student perceptions to student performance.

Warter-Perez and Dong (2012) flipped an introduction to digital engineering course in order to increase opportunities for collaborative project-based learning. They report the flipped classroom helped students better understand the course material and develop design skills. In addition, over 70 percent of the students stated the flipped class environment was more interactive than traditional engineering classes. All students reported that the flipped classroom allowed them to acquire hands-on design skills and learn content better.

Strayer (2012) used a flipped classroom in an introductory statistics course and assessed the impact on the class-learning environment. One interesting finding for this course was that a flipped classroom may not be the preferred design for an introductory class, since students may have not yet developed a deep interest in the particular course content. When they encounter difficult assignments beyond their skillset, or problems that have not been well defined, they may experience frustration and dissatisfaction. Butt (2014) surveyed students enrolled in a final-year actuarial course in Australia, both at the start and the end of the semester, to assess views on lectures and the flipped classroom approach. He found that student views became far more positive at the end of the semester. At the beginning of the semester, 50 percent of the students thought the flipped classroom was beneficial to their learning. By the end of the semester, this increased to 75 percent. Butt further states that the finding – 25 percent of the students who viewed the flipped classroom as not being beneficial to learning – is relatively consistent with findings from several past studies.

Assessing student perceptions of the flipped classroom model: introduction to management course

University and course background

A flipped classroom model was applied to an introduction to management course at a large, urban, highly diverse, AACSB-accredited business school in fall 2013. This introduction to management course (MGMT) is one of 12 required core-courses required of all business majors. Students need junior standing to enroll; there were 325 students in the class. This class was chosen for this preliminary exploratory study for convenience; it happened to be the class being taught by the primary author who was very interested in implementing a flipped classroom course model and reporting the results for other higher education faculty to learn from, especially those teaching similar students in large lecture courses. The flipped classroom model may be particularly useful for improving instruction in large lecture courses because active learning approaches, such as those applied in this flipped classroom approach,

are believed to lead to more effective student learning than passive lecture-oriented approaches commonly used in large courses.

The class is taught over a traditional 15-week semester and addresses one major topic each week. In this class, students are assigned textbook readings and several short video lectures[2] to review during each week of the course. Videos were captured and produced by the course instructor using the Echo360 personal capture software and a laptop computer provided by the university. Average time for each of the 15 weekly video chapter topics was 76 minutes; organized into 3-4 video segments for each chapter. During the week, students were required to meet in person in a large lecture hall twice for 75 minutes of in-class discussion focussed on applications of key concepts from one's work experience or through brief interviews with managers, as well as other applications. In this regard, discussion of video cases, brief movie clips, and other multimedia segments also were used. In all, the instructor used four types of content to promote active learning through discussion of the assigned readings and viewed video lectures: first, application questions of key concepts for each chapter that appeared in the *Course Notebook*; second, video cases with application questions; third, movie clips focussed on key concepts; and finally, other multimedia material created by the author or edited from business-oriented cable channels. Of these four, the application questions accounted for 50-65 percent of class time. Video lectures are linked in the class website, which is hosted by the university learning management system.

Methodology

A survey was created to assess student perceptions of their flipped classroom experience. The survey consisted of 14 items and was based on a survey created by Enfield (2013)[3] to assess student perceptions of a flipped classroom. The survey was completed voluntarily, due to university regulations, during the 14th week of the 15-week semester. In total, 189 students completed the survey, 58.2 percent of the enrolled students. Of the 189 students who chose to participate, 174 also volunteered their names – 53.5 percent of the class. This sample of 174 students was used to determine relationships between student perceptions of the flipped class experience as self-reported in the survey and course performance measured by student scores on three multiple-choice exams.

Data analysis and results

Students were asked to indicate their level of agreement with 14 statements (see, Table I for survey items). Answers options included: strongly agree (scored as 5), agree (scored as 4), neutral (scored as 3), disagree (scored as 2), and strongly disagree (scored as 1). In order to explore whether the reported perceptions of successful students differed from those of unsuccessful students, students were categorized into two groups. Those with a grade of C- or above were placed in the "PASS" group, and those with grades below C- were placed in the "FAIL" group[4].

Survey items and results

In Table I, we list each survey item, followed by the mean score and the standard deviation for that item. Table I also reports the level of student agreement – disagree or strongly disagree (D/SD), neutral (NEU), and strongly agree or agree (SA/A) – to the statement categorized by level of student success (PASS or FAIL). Significant differences

Table I.
Student survey
responses

Student category Survey items	Response	ALL (<i>n</i> = 174)		PASS (<i>n</i> = 139)		FAIL (<i>n</i> = 35)	
		Count	%	Count	%	Count	%
1. I would prefer a flipped class to a lecture class (mean: 3.29, STD: 1.122)	D/SD	40	23.0	33	23.7	7	20.0
	NEU	59	33.9	44	31.7	15	42.9
	SA/A	75	43.1	62	44.6	13	37.1
2. I would prefer an online class to a flipped class (mean: 2.87, STD: 1.277)	D/SD	72	41.4	55	39.6	17	48.6
	NEU	45	25.9	40	28.8	5	14.3
	SA/A	57	32.8	44	31.7	13	37.1
3. I would have preferred the instructor present the lecture material himself in class ... (mean: 3.78, STD: 1.113)	D/SD	24	13.8	22	15.8	2	5.7
	NEU	41	23.6	34	24.5	7	20.0
	SA/A	109	62.6	83	59.7	26	74.3
4. I would enroll in another flipped class (mean: 3.11, STD: 1.137)	D/SD	49	28.2	35	25.2	14	40.0
	NEU	56	32.2	44	31.7	12	34.3
	SA/A	69	39.7	60	43.2	9	25.7
5. Discussions in class helped me understand real-world applications of management (mean: 3.90, STD: 0.959)	D/SD	13	7.5	10	7.2	3	8.6
	NEU	38	21.8	28	20.1	10	28.6
	SA/A	122	70.1	101	72.7	21	60.0
6. My interest in management increased from taking this flipped class (mean: 3.51, STD: 0.992)	D/SD	20	11.5	12	8.6	8	22.9
	NEU	61	35.1	50	36.0	11	31.4
	SA/A	92	52.9	77	55.4	15	42.9
7. I would recommend this flipped class to another student (mean: 3.51, STD: 1.038)	D/SD	25	14.4	15	10.8	10	28.6
	NEU	57	32.8	49	35.3	8	22.9
	SA/A	91	52.3	75	54.0	16	45.7
8. The CourseStream videos helped me learn the key course concepts (mean: 3.60, STD: 1.066)	D/SD	23	13.2	16	11.5	7	20.0
	NEU	47	27.0	34	24.5	13	37.1
	SA/A	103	59.2	89	64.0	14	40.0
9. The class discussions helped me learn the key course concepts (mean: 3.69, STD: 0.985)	D/SD	20	11.5	14	10.1	6	17.1
	NEU	46	26.4	36	25.9	10	28.6
	SA/A	107	61.5	89	64.0	18	51.4
10. I found the content of the CourseStream videos to be interesting (mean: 3.41, STD: 0.982)	D/SD	5	2.9	3	2.2	2	5.7
	NEU	21	12.1	16	11.5	5	14.3
	SA/A	124	71.3	98	70.5	26	74.3
11. The average time of the CourseStream videos (25 min) was about right for me (mean: 3.53, STD: 1.065)	D/SD	21	12.1	16	11.5	5	14.3
	NEU	64	36.8	53	38.1	11	31.4
	SA/A	88	50.6	70	50.4	18	51.4
12. I would prefer shorter CourseStream videos (mean: 3.81, STD: 1.002)	D/SD	14	8.0	12	8.6	2	5.7
	NEU	49	28.2	39	28.1	10	28.6
	SA/A	110	63.2	88	63.3	22	62.9
13. I would prefer longer CourseStream videos (mean: 1.99, STD: 0.958)	D/SD	122	70.1	99	71.2	23	65.7
	NEU	42	24.1	34	24.5	8	22.9
	SA/A	9	5.2	6	4.3	3	8.6
14. Overall, my rating of this flipped class is: (mean: 3.75, STD: 0.930)	Fair/poor	18	10.3	11	7.9	7	20.0
	AVE	36	20.7	25	18.0	11	31.4
	Exc/good	119	68.4	103	74.1	16	45.7

(based on an independent samples test for equality of means, *p* < 0.05) in level of agreement between student success groups are noted Table I.

Findings from the survey include (listed by survey item):

- (1) Overall, students reported a slight preference for a flipped class over a lecture class.
- (2) Overall, students reported a slight preference for a flipped class over an online class.

- (3) Overall, students would have preferred the instructor provide lectures in class. This preference was significantly more pronounced in the unsuccessful student group compared to the successful student group ($p < 0.05$).
- (4) Successful students agreed that they would take another flipped class; unsuccessful students disagreed ($p < 0.05$).
- (5) Overall, students reported that the discussions in the flipped class helped them understand real-world applications of management[5].
- (6) Overall, students reported that their interest in management increased as a result of this class. Successful students reported this more strongly than did unsuccessful students ($p < 0.05$).
- (7) Generally, students reported more agreement with this question than disagreement. Successful students reported that they would recommend this course more than unsuccessful students would ($p < 0.05$).
- (8) Overall, students reported that the pre-recorded videos helped them learn course concepts. Successful students reported this much more strongly than did unsuccessful students ($p < 0.05$).
- (9) Overall, students reported that the class discussions helped them learn course concepts.
- (10) Overall, students strongly agreed that the content of the videos was interesting.
- (11) Students reported slight agreement that the length of the videos was “about right for me.”
- (12) Students reported strong agreement that they would prefer shorter videos.
- (13) Students reported strong disagreement that they would prefer longer videos.
- (14) Students rated this course most often as excellent or good. Successful students rated this course more favorably than unsuccessful students ($p < 0.05$).

Survey component analysis

Factor analysis was used to determine the major components of the survey, since we wanted to determine possible correlation patterns among survey items in order to reveal the simple structure of the survey. The factor analysis was generated in SPSS using principle component analysis with a promax rotation with Kaiser normalization. Promax rotation, an oblique rotation method, was used since we expected that several survey items would be correlated into identifiable factors. The rotation converged in three iterations. The two major components identified were: first, survey items S1, S4, S5, S6, S7, S9, and S14; and second, survey items S8, S10, S11, S12, and S13 (see, Table I for specific survey items). Component 1 consists of items associated with the specific activities implemented in this flipped class instruction. Component 2 consists of items associated with the length and perceived value of the pre-recorded lecture videos (see Table II).

We further tested the reliability of the survey instrument for items clearly associated with student perceptions of satisfaction with the flipped class design and activities. For this analysis, we including items S1, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, and S14, and excluded only items S2 and S3 since those items asked students about their preference for other types of instruction other than a flipped class. Internal consistency

Table II.

Student survey
component analysis

	Pattern matrix ^a	
	1	2
1.	0.709	-0.134
2.	-0.355	0.279
3.	-0.361	-0.063
4.	0.832	-0.155
5.	0.747	-0.028
6.	0.742	0.097
7.	0.799	0.110
8.	0.227	0.635
9.	0.678	0.080
10.	0.145	0.667
11.	-0.103	0.804
12.	0.114	-0.564
13.	-0.117	0.629
14.	0.862	-0.005

Notes: Extraction method: principal component analysis; rotation method: promax with Kaiser normalization. ^aRotation converged in three iterations

reliability was performed on these 12 items, resulting in a Cronbach’s α reliability coefficient of 0.824, indicating a high level of internal reliability (Cortina, 1993; Cronbach, 1951) (see Table III).

Survey correlation analysis: student perceptions and student academic performance

A correlation analysis was completed to explore the possible association between student performance (measured by test scores) and perceptions of the flipped class experience. Key statistically significant ($p < 0.05$) correlations include[6]:

- (1) Test scores and student perception: students who performed worse on Test 1 reported a preference for traditional (in-person) rather than pre-recorded lectures (S3: Pearson’s $r = -0.179$). Students who performed better on Test 2 reported more agreement that the pre-recorded videos helped them learn key course concepts (S8: $r = 0.153$).
- (2) Students who reported that they would enroll in another flipped class (S4) also reported:
 - preference for flipped class over a lecture class (S1: $r = 0.540$) or online class (S2: $r = -0.232$);
 - discussion activities (S5: $r = 0.485$; S9: $r = 0.424$) and pre-recorded videos (S8: $r = -0.271$) helped them learn;

Table III.

Reliability of student
satisfaction with
flipped class
and activities

Cronbach’s α	Reliability statistics	
	Cronbach’s α based on standardized items	No. of items
0.824	0.824	12

- video content was interesting (S10: $r = 0.245$);
 - interest in course topic (management) increased (S6: $r = 0.475$); and
 - they would recommend the flipped class to others (S7: $r = 0.582$).
- (3) Students who reported they would have preferred an online class (S2) also reported:
- they would neither enroll in another flipped class (S4: $r = -0.232$) nor recommend this flipped class to others (S7: $r = -0.253$).
- (4) The strongest correlation between survey items was among the overall rating of the class (S14) and the likelihood to recommend this class to others (S7) ($r = 0.719$).

Discussion of results

Findings regarding the overall effectiveness of the flipped classroom approach in this course have been reported previously (Albert and Beatty, 2014), and can be summarized as: “Compared to the prior lecture class taught by the same instructor using the same text and tests, results indicate that grades on all three exams were higher, and grades on two of three exams were significantly higher” (p. 419).

Several patterns in student perceptions emerge from the findings. Students who performed better in the class, based on test scores, were generally more positive about the flipped class experience than were students who were academically unsuccessful. It is unclear, however, whether the design of the flipped class was a better fit to the learning preferences of the successful students than it was to the learning preferences of the unsuccessful students. If students do not prefer to learn by watching videos they may not be as engaged nor learn as much from pre-recorded lectures as students who do prefer to learn by watching videos. If students do not prefer to learn through live class discussions (potentially for a variety of reasons, e.g., personality, language skills, hearing and speaking ability, cognitive processing abilities), they may not find this form of instruction useful in learning content and may be less academically successful.

Shorter lecture videos are preferred by, and therefore may be more effective for, a majority of students. However, this preference is less pronounced in more successful students. Perhaps academically successful students are either able to learn more effectively from longer videos – average time 25 minutes – (related to their ability to process information) or rely less on pre-recorded lectures for learning.

To what extent our findings can be generalized to other business courses in management – and to other business courses – cannot be determined due to several limitations of our research. The large class size (325 students) may be a factor. It may be that students in smaller classes (30-50 students) have different perceptions of a flipped classroom approach. Moreover, assessment of academic success in this study was limited to performance on three multiple-choice exams. To what extent student perceptions and grades would be different in a flipped class if assessment included written responses to management situations, mini cases, descriptions of key concepts, etc. cannot be determined from this study. We also do not know the extent that selection bias may have had an impact on our results since only students attending class in person (rather than viewing lectures remotely) completed the survey, and one could contend that students attending a class might have more positive views than those who did not attend.

Implications and future research

As faculty and administrators (in schools of business and throughout an institution) learn more about flipped classroom approaches and consider whether or not these pedagogical approaches will improve their students' learning, they will rely on a mix of information and experiences to guide their decision-making and classroom practice. The results presented in this paper provide faculty, teaching in the USA and internationally, with a better understanding of the perceptions of US students toward the flipped classroom approach. Although it may be that the flipped classroom model impacts students from different countries and cultures differently, our study found that students did value the experience and report that it supports their learning. Whereas this finding has been supported by other research, there is not universal student satisfaction with this approach. Faculty realize that student satisfaction with instruction is not the only measure that matters when assessing instructional effectiveness, but faculty also acknowledge that student perceptions of value are important and should be considered when considering or assessing pedagogical changes.

Administrators charged with serving students and faculty by providing the environment, tools, and supports needed for effective learning may also take into account student perceptions of the flipped classroom approach. In many institutions, resources are available for course redesign efforts that target student success measures. Faculty are often encouraged by their department chairs and deans and supported with tangible resources (stipends, course release, technical assistance) to pursue innovative pedagogical approaches such as the flipped classroom. An important measure that many administrators pay attention to is student perception of pedagogical effectiveness as reported by teaching evaluations, program assessments, anecdotal reports, and other expressions of student opinions. The key institutional student success measure of student retention may also be connected to student perceptions of pedagogical effectiveness.

The research on the flipped classroom approach has generally shown it to be effective in improving student learning, and is consistent with findings around improved learning in blended and hybrid learning environments overall (US Department of Education, 2010). Indeed, a comprehensive meta-analysis on comparing online to face-to-face and blended environments concluded that improvements in student learning in blended environments which include face-to-face and online activities were superior: "[...] larger in those studies contrasting conditions that blended elements of online and face-to-face instruction with conditions taught entirely face-to-face. Analysts noted that these blended conditions often included additional learning time and instructional elements not received by students in control conditions. This finding suggests that the positive effects associated with blended learning should not be attributed to the media, *per se*." The important conclusion relevant to flipped classroom is that improvements in student learning (that many report) is most likely due to increased time on task (aka learning time) and not on any specific media being used.

As more educators teaching in international settings apply the flipped classroom model to develop flipped courses, we suggest several research areas be targeted to provide greater understanding of the impact of the flipped classroom approach on student perceptions, and ultimately, on student learning. Since the body of research on flipped classroom approaches is growing but still largely

underdeveloped, there are many potential areas for researchers to focus on. We mention three primary areas directly related to this study, though there are many other areas that could also be studied, such as, how content videos are used by students in flipped classrooms and how effectively do these videos support student learning in flipped classrooms (This is a topic we plan to address in a forthcoming paper.).

Research investigating the impact of a flipped classroom on business student perceptions should focus on a variety of courses, both introductory and advanced, at both the undergraduate and graduate level. Discussing this potential difference among different course or student levels, Strayer (2012) and Hamdan *et al.* (2013) comment that it may be that students in an introductory class have not yet developed a deep interest in the particular course content. It may be found that the flipped classroom has greater impact on student perceptions in advanced classes or at the graduate level if students enrolled at this level are more invested in their educational experience. Perhaps these students complete assignments before class (watching pre-recorded video, reading articles, etc.) and attend class better prepared and more interested in applied discussions.

Research should also build on the modest survey research that has been conducted in this area. Enfield (2013) reports the results of a survey developed to assess student perceptions of a flipped classroom. We created our survey with many similar items, but revised and added several that focussed on particular aspects of this course, such as the content (management) and design features of the video lectures. Other surveys (or other research protocols) that educators develop to assess perceptions of flipped classrooms would add to the limited extant literature. For example, Findlay-Thompson and Mombourquette (2014) describe the methodology focussed on in-depth, case study interviews of students related to their experience in the flipped classroom. Strayer's (2012) mixed-methods research comprised of field notes, interviews, focus groups, and the CUCEI also provides a comprehensive framework for future research.

Research could also focus on the impact that a country's educational system and its cultural values may have on student perceptions and learning with a flipped classroom model. Although this line of research would require the development of a cross-cultural educational model applied to the flipped classroom model, researchers from different continents with an interest in this area could collaborate on this ambitious area of inquiry. One possible starting point could focus on differences among university students in Europe, Asia, and the USA, in light of the literature summarized in this paper. A meta-analysis of the international literature on the flipped classroom model could also provide an important conceptual foundation for subsequent theory development.

Concluding perspective

It is clear that the flipped classroom instructional model is beginning to be utilized more intentionally in higher education institutions, and that this approach may lead to increased student success. The overall effectiveness of a flipped classroom approach depends not only on well-designed instructional materials and activities, but also on students choosing to engage in those activities and review prepared course material before an in-class session. Understanding student preferences and levels of satisfaction with various aspects of the flipped classroom should inform faculty and institutions about how they can better meet both the legitimate instructional needs and the personal

learning preferences of students. Equipped with this understanding, faculty should be able to more confidently shift their instruction to an active, student-centered flipped classroom model.

Notes

1. These case studies are largely exploratory reports on initial implementations of new pedagogy; characteristic of most flipped classroom research currently published.
2. A full analysis of student use of lecture videos is in preparation for a forthcoming publication.
3. Enfield's survey was the only existing survey we identified in the flipped classroom literature, and targeted many of the same aspects of student perception that we were interested in.
4. The university and its governing system often describe student success as students receiving "non-repeatable" grades of C- or above.
5. Understanding real-world applications of management is one of the most important desired learning outcomes for this class.
6. A full report of the correlation analysis exceeds the scope of this paper. Additional information is available from the first author.

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