

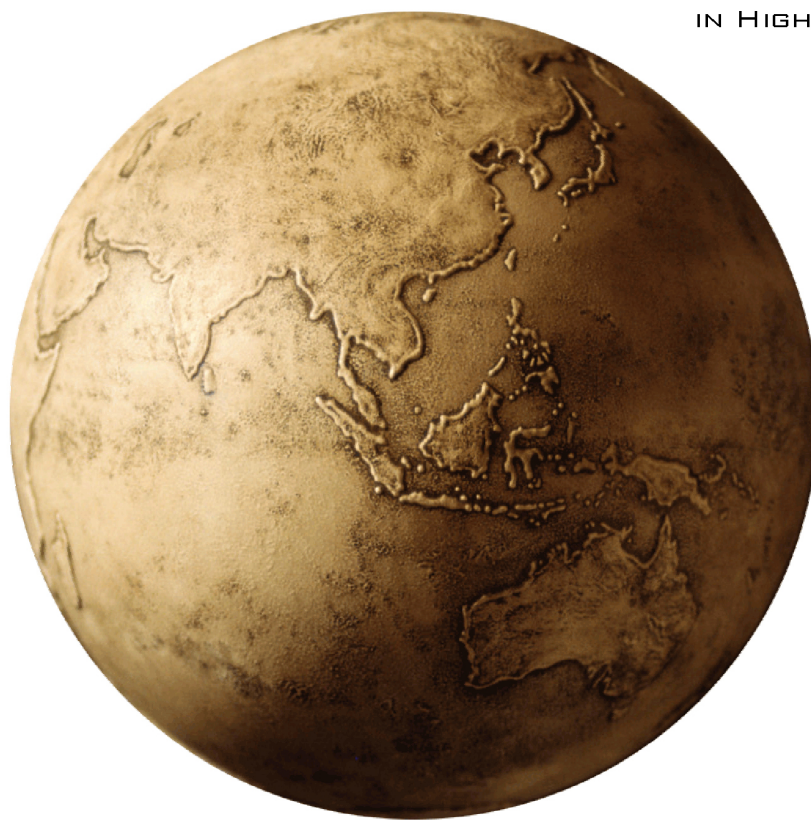
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IN HIGHER EDUCATION



The University of Georgia

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Purpose

The International Journal of Teaching and Learning in Higher Education (ISSN 1812-9129) provides a forum for the dissemination of knowledge focused on the improvement of higher education across all content areas and delivery domains. The audience of the IJTLHE includes higher education faculty, staff, administrators, researchers, and students who are interested in improving post-secondary instruction. The IJTLHE is distributed electronically to maximize its availability to diverse academic populations, both nationally and internationally.

Submissions

The focus of the International Journal of Teaching and Learning in Higher Education is broad and includes all aspects of higher education pedagogy, but it focuses specifically on improving higher education pedagogy across all content areas, educational institutions, and levels of instructional expertise. Manuscripts submitted should be based on a

sound theoretical foundation and appeal to a wide higher education audience. Manuscripts of a theoretical, practical, or empirical nature are welcome and manuscripts that address innovative pedagogy are especially encouraged.

All submissions to IJTLHE must be made online through the Online Submission Form. In addition, all manuscripts should be submitted in English and in Microsoft Word format. The following Submission Guidelines pertain to all manuscript types, that is, Research Articles, Instructional Articles, and Review Articles. Ultimately, authors should follow the guidelines set forth in the most recent edition of the Publication Manual of the American Psychological Association (APA).

Review Process

Following a brief editorial review, each manuscript will be blind reviewed by two members of the Review Board. The review process will take approximately 90 days. At the end of the 90-day review process authors will be notified as to the status of their manuscripts - accept, revise and resubmit, or reject - and will receive substantive feedback from the reviewers. Manuscript authors are responsible for obtaining copyright permissions for any copyrighted materials included within manuscripts.

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Student and Instructor Perceptions of a Flipped College Algebra Classroom

Robert W. Jaster
Odessa College

Each year about half a million students fail to make planned academic progress due to college algebra, hence the need for researchers to find ways of improving the quality of instruction in the course. Recent research suggests that flipping college algebra to allow time for active learning in the classroom may improve student performance. Also, the costs of college textbooks have skyrocketed in the last few years, preventing or discouraging students from obtaining crucial learning resources. To address both concerns, the researcher implemented a flipped college algebra classroom and based all lessons on a free textbook. Videos and corresponding problem sets were created and made available to students on the Internet. Outside class, students viewed videos, took notes, and completed video problem assignments. Inside class, students worked with other students to complete in-class problem assignments. Students described their experience in the flipped classroom in an anonymous essay and an online survey, and the researcher recorded field notes of his observations throughout the term. This study reports student and instructor perceptions of the flipped college algebra classroom.

A large number of students enroll in college algebra each year in the United States. Based on a Conference Board of Mathematical Sciences survey (Blair, Kirkman, & Maxwell, 2013), enrollment in college algebra for the 2010 academic year was estimated to be approximately 849,600 students (Jaster, 2013), and Overmyer (2014) estimated that annual enrollment now exceeds 1,000,000 students. Unfortunately, success rates in college algebra are typically only about 40-60% (Haver et al., 2007; Ogden, 2014), meaning that each year approximately half a million students fail to make planned academic progress due to college algebra.

An alternative to the traditional classroom structure that has become increasingly popular during the last few years is the flipped classroom (Amresh, Carberry, & Femiani, 2013). Lage, Platt, and Treglia (2000) defined an inverted (or flipped) classroom as a classroom in which “events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa” (p. 32). As explained by Baker (2000) at about the same time, “a key online component for the ‘flipped’ class is the movement of lecture material out of the classroom through online delivery” (p. 12) so that “the professor is freed from the ‘tyranny of the lecture’.... [and] is now free to use class time for other activities” (p. 13).

Recent research suggests that the flipped classroom is especially appropriate for college algebra. Van Sickle (2015) reported that the results of flipping four sections of college algebra over a period of two semesters were surprisingly positive, so much so that she now has a hard time denying the benefits of flipped instruction. In fact, Van Sickle found that “college algebra is a perfect fit for flipped learning” (p. 610), offering “all the opportunity to succeed and grow in their understanding of mathematics” (p. 610).

Learning in Flipped Classrooms

Most often in flipped classrooms, online videos are used to deliver course content outside class (Herreid & Schiller, 2013). Twenty-first century students may find videos appealing (Bergmann & Sams, 2012), and research has shown that students typically learn slightly more from visual-based instruction than from conventional teaching (Cohen, Ebeling, & Kulik, 1981).

But as explained by Sams and Bergmann (2013), flipped learning is not as much about using videos in the lessons as it is about how to best use in-class time with students. Replacing in-class lectures with outside-class videos makes time available inside the classroom for active learning. Student performance was compared in science, technology, engineering, and mathematics (STEM) classes taught under active learning versus traditional lecturing in the largest and most comprehensive meta-analysis of undergraduate STEM education published to date (Freeman et al., 2014). The meta-analysis found that in classes with active learning, the students performed better on final examinations and were less likely to fail than in classes taught with traditional lecturing. The meta-analysis also found that both results hold across STEM disciplines.

Research suggests that it is the presence of active learning, rather than the structure of the flipped classroom itself, that leads to higher student performance. Jensen, Kummer, and d. M. Godoy (2015) studied the effectiveness of the flipped model in biology instruction by comparing a flipped classroom to a non-flipped classroom. The researchers sought to vary only the role of the instructor and control for as many of the other potentially influential variables as possible. In the non-flipped classroom, the instructor facilitated content attainment. In the flipped classroom, the students were responsible for content attainment before class. Students in each of the two classes were engaged

in active learning (in the non-flipped class, students worked in groups of three or four using a prepared study guide with brief whole-class discussions interspersed between group work). In both flipped and non-flipped classes, the instructor acted more as a guide than an authority figure. The researchers found equivalent learning and student satisfaction between the classes, and they concluded that any learning gains are most likely a result of the active-learning style of instruction rather than the order in which the instructor participates in the learning process.

Van Sickle (2015) used videos to flip two sections of college algebra in fall 2013 and two sections of college algebra in spring 2014. During most of the class time students were actively involved in completing a problem set. Students were encouraged to work with other students but could work alone if preferred. Six college algebra sections taught in a traditional format served as control sections. A one-tailed *t*-test showed that the final examination scores in the flipped classes were significantly higher than in the traditional classes, with $p = 0.0143$.

Ogden (2014) noted that for college algebra instruction, "the flipped classroom teaching model enables teachers to promote active learning in the classroom and to cultivate confidence in students who typically lack it" (p. 138). As Ogden explained, the flipped teaching model allows the use of multiple instructional strategies which can mediate the effects of math anxiety and low self-efficacy and increase a student's motivation to learn.

Results obtained by Overmyer (2014) are consistent with the theory that active learning leads to higher student performance in flipped college algebra classrooms. For the purpose of analysis, Overmyer (2014) divided 11 sections of college algebra into three groups. The traditional group consisted of those sections taught using the traditional method of lecture and homework. The flipped (no inquiry) group consisted of those sections that were flipped and taught by instructors who did not have experience with inquiry-based or cooperative learning methods. The flipped (inquiry) group consisted of those sections that were flipped and taught by instructors who did have experience with inquiry-based or cooperative learning methods. The mean of the final examination scores in the flipped (inquiry) group was higher than in either of the other two groups. Analysis revealed that the difference in mean scores between traditional and flipped (inquiry) groups was statistically significant ($p < .05$). Analysis also revealed that the difference in mean scores between the flipped (no inquiry) and flipped (inquiry) groups was statistically significant ($p < .05$). No statistically significant difference in mean scores was found between the traditional group and the flipped (no inquiry) group.

Student Expense

While the flipped classroom may lead to instructional improvement in college algebra, students and families still face the high cost of textbooks. The cost of college textbooks has skyrocketed in the last few years (Student Public Interest Research Groups [SPIRG], 2014), preventing or discouraging students from obtaining crucial learning resources. Although publishers have increased cost-saving options like e-books and rental programs, because the price of rental, used, and e-books is dictated by the price of the new print edition, the cost-saving options have had limited impact (SPIRG, 2014).

In fall 2013, a survey was conducted of 2,039 students from more than 150 different university campuses concerning textbook cost (SPIRG, 2014). The survey found:

- "High textbook costs continue to deter students from purchasing their assigned materials despite concern for their grades" (SPIRG, 2014, p. 4).
- "High textbook costs can have a ripple effect on students' other academic decisions" (SPIRG, 2014, p. 5).
- "Students want alternatives, expressing support for textbooks that are available free online and buying a hard copy is optional" (SPIRG, 2014, p. 5).

Students not required to have a textbook for a class may nevertheless be required to purchase costly access to an online learning system.

Research Questions

A flipped college algebra classroom was designed to increase learning and reduce student expense. To better understand the experiences of the instructor and the students, and to aid in assessing classroom design, this study sought to answer the following research questions.

1. What are students' perceptions of a flipped college algebra classroom?
2. What are the instructor's perceptions of a flipped college algebra classroom?

Method

Context

A community college in west Texas (with an enrollment of about 5,000 students) served as a place of instruction for the college algebra course. A total of

twenty students remained enrolled in the course after the census date.

The college's summer semester consists of two consecutive terms, each approximately five weeks in length. The college algebra class met each morning, Monday through Thursday, for two hours and 15 minutes during the first term of summer 2015.

The class met in a newly constructed building dedicated to mathematics and science. The classroom was equipped with a computer and projector which the instructor used at the beginning of the term to demonstrate access to online course documents and videos. Desks were arranged to form five groups with four students per group so that students could work together in the classroom.

The Math Lab was located on the same floor as the classroom and was staffed with tutors and equipped with about 40 computers. Outside class time, students could visit the Math Lab to view videos, solve problems, and ask questions.

Course Preparation

Flipping the classroom required preparation prior to the beginning of the term. A textbook was chosen, and subsections of the textbook were selected for inclusion in the course. To reduce costs for the students, the lessons were based on the free textbook *College Algebra* (OpenStax College, 2015b) published by OpenStax College. An initiative of Rice University, OpenStax College is a nonprofit organization that develops free, peer-reviewed textbooks for higher education and is made possible through the generous support of several philanthropic foundations (OpenStax, 2015a).

The textbook was contained in a PDF file and made available to the students through the college's learning management system. The instructor used software to extract pages from the textbook and then merged those pages to create another PDF file that contained only the exercises from the textbook subsections included in the course. The file that contained only exercises was also made available to the students through the college's learning management system. If a student was able to access the file containing the exercises in class using a mobile device such as a smartphone, tablet, or laptop, then the student was not expected to have the exercises printed. Otherwise, students could pay about \$30 to have the exercises printed and spiral bound at one of the several businesses in town offering copying and printing services.

Videos and corresponding sets of video problems were produced and made available at a website that would be accessible to the students. Long videos may negatively impact student impressions of the flipped classroom (Amresh et al., 2013; Jaster, 2013), so one relatively short video was produced for each textbook subsection included in the course. A total of 92 videos were produced for the

course, with a mean length of 5 minutes 58 seconds and standard deviation of 4 minutes 8 seconds. The shortest video was 23 seconds in length, and longest video was 21 minutes 28 seconds in length. Only eight of the 92 videos were over 11 minutes in length.

In order to provide students with access to the videos quickly and as flexibly as possible, a website for the videos and video problems was created by the researcher. A screenshot of the website appears in Figure 1 and shows the instructor explaining content from one of the subsections of the textbook.

Other ways of providing students with access to the videos included having a webpage created as part of the college's website, or posting the videos at youtube.com or screencast.com. The video problems were contained in PDF files and could have been distributed from a location different than the instructor-created website, either online (perhaps through the college's learning management system) or as printed copies.

Producing each video involved first recording video clips of the instructor teaching at a whiteboard using a camcorder and wireless microphone. Video editing software was then used to concatenate the clips and delete any unnecessary or undesired footage. Once edited, the video was saved in MP4 format at a reduced resolution of 640 x 360 pixels to shrink file size. Video problems (usually only one or two) based on the video were created and saved in PDF format. Then both the video and the video problems were uploaded for delivery by the website.

Lesson Procedure

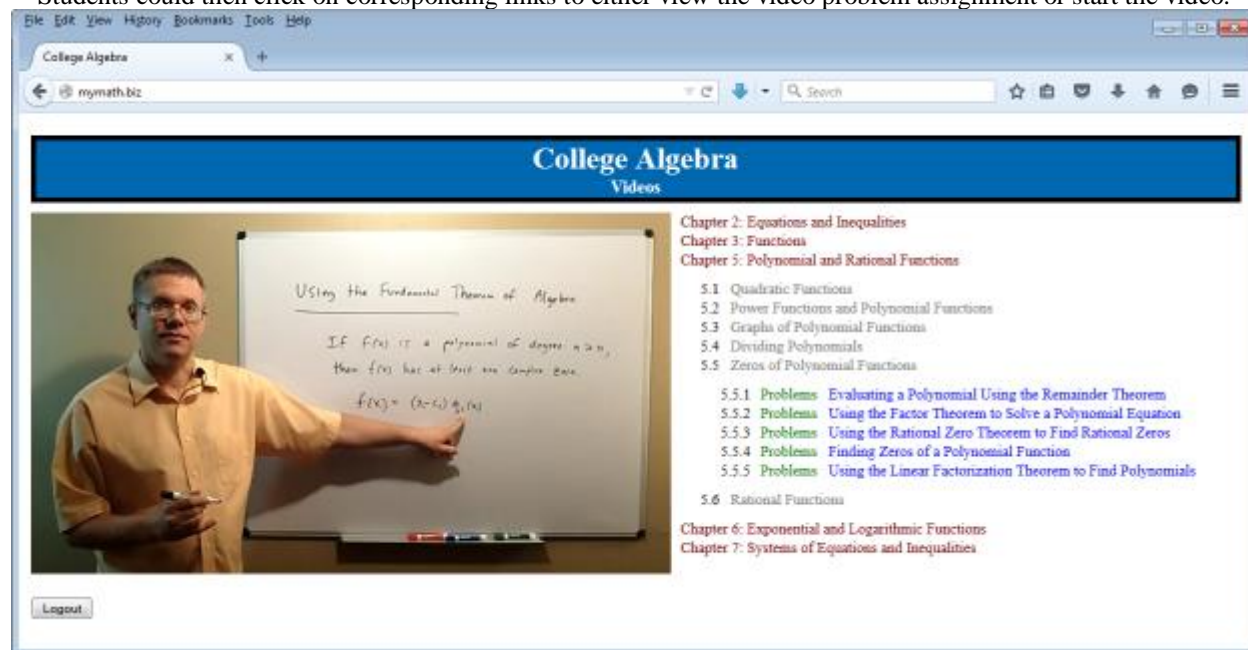
To learn the content of each textbook subsection, students engaged in learning activities both outside and inside class. Outside class, students viewed videos, took notes, and completed video problem assignments. Inside class, students worked with other students to complete in-class problem assignments.

Videos and video problems. A set of one to four video problems accompanied each video. To learn the content of each textbook subsection, students were expected to view its corresponding video and solve the associated video problems prior to coming to class. The video problems could be solved using the methods shown in the video.

One of the purposes of requiring the students to solve video problems was to provide students with an opportunity to practice the problem solving techniques demonstrated in the video. Another purpose of requiring the students to solve video problems was to encourage video viewing. As Gannod, Burge, and Hemlick (2008) explained, the viewing of videos outside class "must be incentivized in order to provide motivation for students to prepare for in-class exercises" (p. 785). Students were told that credit would

Figure 1

Website with corresponding links. Students were able to expand a collapsible menu to locate a subsection of interest. Students could then click on corresponding links to either view the video problem assignment or start the video.



be awarded for the video problems only if solved using methods explained in the video.

Note taking. Students took notes while viewing the videos. Although note taking was not required, students seemed to understand the importance of having notes for solving the assigned problems in class. The instructor encouraged students to take notes and would sometimes refer to a student's notes when answering a question posed by the student.

In-class problem solving. The instructor wrote the in-class assignment on the board at the beginning of each class. Upon arriving to class, students signed an attendance sheet, submitted their solutions to the video problems, and started working on the in-class assignment.

Research suggests that it is active learning, rather than lecture or the structure of the flipped classroom itself that leads to increased learning in flipped classrooms (Freeman et al., 2014; Jensen et al., 2015; Ogden, 2014; Overmyer, 2014). Consequently, the instructor did not explain course content to the class as a whole or conduct question and answer sessions. Instead, the instructor used almost all available class time circulating throughout the room helping individual students and helping small groups of students that were working together.

The instructor strove to create a relaxed atmosphere in the classroom that would be conducive to learning. During class many students worked with

others in solving the assigned problems, while a few students chose to work alone.

Students were encouraged to solve as many problems as possible but were not prohibited from engaging in other activities during class. At times students would view videos (with earbuds) or send text messages on their phones. However, almost all students remained focused on problem solving until the quiz.

Assessments

Students were given daily quizzes and weekly exams. A final exam was administered at the end of the term.

Quizzes. A quiz, consisting of one to four problems, was given during the last 20-30 minutes of class and was based on the in-class assignment. Students were not allowed to refer to the textbook or any notes during the quiz.

The quiz served several purposes. First, the quiz allowed the instructor to see how well the students had learned the content of the textbook subsection(s). Also, the upcoming quiz likely helped students remain focused on the assignment during in-class problem solving. The quiz also served as a means of checking attendance at the end of class.

Exams. At the end of each of the first four weeks (on Thursday), instead of a quiz, students were given an exam over all the subsections taught during the week. The exams were designed to require about an hour to

Table 1
Survey Constructs and Corresponding Questionnaire Items

Survey Construct	Questionnaire Items
Learning contribution of video viewing with note taking	1
Learning contribution of video problem solving	2
Learning contribution of in-class problem solving	3
Video viewing engagement	4, 9, 14, 18
Learning opportunity afforded by the flipped college algebra classroom	5, 10, 15
Beneficialness of in-class problem solving	6, 11, 16, 19
Preference for the flipped format	7, 12, 17
Preparedness for the course	8, 13
Expected term grade	20

complete. At the end of the last week, students took a comprehensive final exam.

Instrumentation

Two instruments were used to gather data in this study. An essay assignment instructed students to provide data that described their perceptions of the flipped college algebra classroom. An online survey was used to gather additional data from students that also described their perceptions.

Essay assignment. To allow students freedom in describing their experience in the class, the only requirement of the essay assignment, other than formatting requirements, was that the essay describe what the student thought about the flipped college algebra classroom. A few questions were included in the assignment to provide students with ideas to write about, but it was clearly stated in the assignment that the student could answer all, some, or none of the questions. The complete essay assignment appears in Appendix A.

Reliability. One of the three types of reliability identified by Kirk and Miller (1986) was synchronic reliability, which “refers to the similarity of observations within the same time period” (p. 42). An observational protocol would be considered synchronically reliable if, within a given time period, it produces observations that are consistent with each other.

Students recorded their observations of the flipped classroom in anonymous essays. The consistency of those observations led to an identification of categories during qualitative analysis. Hence the essay assignment in this study could be considered a synchronically reliable instrument.

Validity. A valid instrument measures what it is supposed to measure (Carmines & Zeller, 1979). An

instrument is *apparently valid* if it “is so closely linked to the phenomena under observation that it is ‘obviously’ providing real data” (Kirk & Miller, 1986, p. 22).

The essay assignment required students to describe what they thought about the flipped college algebra classroom. In describing their thoughts students described precisely what was to be measured: their perceptions. Thus the essay assignment could be considered an apparently valid instrument.

Questionnaire. A questionnaire was developed as the survey instrument. The questionnaire included a total of twenty closed-ended ordinal scale items with responses given on a 5-point Likert scale ranging from 1 to 5. The questionnaire was designed to measure nine constructs. Those constructs, and the items that correspond with each construct, appear in Table 1 below. All items contained in the questionnaire appear in Appendix B.

Reliability. A central concept in traditional experimental research, reliability refers to the degree to which research findings can be replicated (Merriam, 2009). Because students may have different conceptions, feelings, impressions, insights, and opinions of the flipped classroom, replicability of survey results was not a concern in this study. More important for qualitative research is the question of “whether the results are consistent with the data collected” (Merriam, 2009, p. 221). Measures of constructs derived from the survey should not contradict any results derived from the other data collected.

Five of the constructs shown in Table 1 were measured with multiple questionnaire items, and the items for measuring individual constructs should be “homogeneous, or all measuring the same construct” (Carroll, 2015a, para. 4). Cronbach’s alpha tells the researcher “whether the individual subjects answered the questions consistently enough that their answers

form a cluster that can meaningfully be studied together” (Vogt, 2006, p. 116). For each of the five constructs, Cronbach’s alpha was calculated and used to estimate the internal consistency reliability of the responses to the corresponding items.

Validity. Determining whether the questionnaire measured what it was supposed to measure required determining whether the questionnaire measured each of the constructs listed in Table 1. Because there were no known measures of the constructs, such determination involved subjective estimation. As stated by Vogt (2006), “Another important difference between validity and reliability is that validity is often more a matter of judgment than statistics” (p. 118).

Carroll (2015b) explains “*face validity* is often used to indicate whether the instrument, on the face of it, appears to measure what it claims to measure” (para. 4). Table 1 lists four constructs that were measured by one item. Questions 1, 2, 3, and 20 asked students to provide a single measure of precisely what was to be measured. For example, Question 1 asked the student to estimate the degree to which viewing videos, and perhaps taking notes while doing so, contributed to their learning, and the construct to be measured was perceived learning contribution of video viewing with note taking. The portion of the questionnaire consisting of questions 1, 2, 3, and 20 appears to satisfy the requirements of face validity.

“*Content validity* is concerned with how well the content of the instrument samples the kinds of things about which conclusions are to be drawn” (Carroll, 2015b, para. 2). For example, to measure video viewing engagement students were asked to estimate the degree to which they tried to learn as much as possible while viewing the videos (Question 4), watched each assigned video at least once (Question 9), frequently paused or repeated segments of the video in order to increase understanding (Question 14), and watched all the videos that were assigned during the semester (Question 18). While it seems that each of the above items would provide some measure of level of engagement with video viewing, gauging the ability of those four items to provide an accurate measurement requires personal judgment.

Data Collection

This study sought to discover student and instructor perceptions of a flipped college algebra classroom. An essay assignment and an online survey were used to capture student perceptions. The researcher was the instructor of the flipped college algebra classroom, and recorded his observations in field notes as the term progressed.

Essay. At the end of the second week an essay assignment was distributed to the students. One week later, students were asked to submit their essay

anonymously by inserting it into a large envelope passed around during class. Students signed a roll sheet taped to the front of the envelope so that extra credit could be awarded to those students who submitted an essay. A total of nine students submitted an essay.

Survey. At the end of the third week of the term, the students were presented with an opportunity to earn extra credit by completing an online survey. The purpose of the survey was to gather additional data regarding perceptions of the flipped classroom. Students were given one week in which to complete the survey. A total of 10 students completed the survey.

Unknown to the students, the website maintained a count of the number of times each student logged in to the website to view videos and access the video problems. After the term ended, the researcher downloaded the login counts and compared them with the measure of *video viewing engagement* derived from the survey data.

Field notes. The instructor worked closely with the students, circulating throughout the classroom to answer any questions that students had. Conversing with the students, viewing students’ notes, and helping students solve problems gave the instructor opportunity to observe students and students’ situations in the classroom. During the term the instructor assessed preparedness, confidence, attitude, gregariousness, and work ethic. The instructor also observed interactions between students, as well as individual student actions, facial expressions, and overheard comments concerning the class. As a participant observer, the instructor blended informal interviews and conversations with observations of students.

Observations are a primary source of data in qualitative research (Merriam, 2009). Throughout the term, the instructor recorded interactions and observations in a set of field notes. The field notes served as a source of data for reconstructing and reporting the instructor’s perceptions.

Data Analysis

Two different types of data were collected: the essay data and field notes each consisted of text, whereas survey data were numerical. Thus both qualitative and quantitative analyses were performed to extract meaning from the data.

Essay data. The essays were qualitatively analyzed using the procedure described on pages 178 through 193 of Merriam’s 2009 book *Qualitative Research: A Guide to Design and Implementation*. In a qualitative study it can be important to begin analysis early, as data is collected (Merriam, 2009). However, to prevent the essays from having any effect on instruction or grading, the instructor/researcher did not read and begin

Table2
Survey Constructs, Questionnaire Items, and Cronbach's Alpha

Survey Construct	Questionnaire Items	Cronbach's Alpha
Learning contribution of video viewing with note taking	1	
Learning contribution of video problem solving	2	
Learning contribution of in-class problem solving	3	
Video viewing engagement	9, 18	1.000
Learning opportunity afforded by the flipped college algebra classroom	5, 10, 15	0.920
Beneficialness of in-class problem solving	6, 11	0.848
Preference for the flipped format	7, 12	0.910
Preparedness for the course	8, 13	0.652
Expected term grade	20	

analyzing the essays until after the grades for the term were reported to the registrar.

Essay analysis began with reading the first essay and writing notes and comments next to any bit of data that seemed relevant to the study. After working through the entire essay, the researcher went back over the notations and grouped those notations that seemed to go together into tentative categories. The researcher then continued to read essays, make notations, and group notations into an evolving common set of tentative categories. After analyzing all the essays, the name of each category was finalized. The categories formed the results of the essay analysis.

Survey data. The survey data were quantitatively analyzed to produce descriptive statistics for describing student perceptions. For each of the nine survey constructs, the descriptive statistics calculated included a measure of central tendency (the mean) and a measure of variability (the standard deviation).

Field notes. The qualitative design of a research study is emergent (Merriam, 2009). And indeed, findings gradually emerged from field notes as analysis was performed throughout the term.

After recording each set of field notes, the researcher read and reread the data while making notes in the margins. As with the essay data, notations for the perceptions that seemed to go together were grouped into tentative categories. A notation may have suggested that a perception belonged to an existing tentative category, or that a new tentative category should be created for the perception. At the end of the term, the field notes were reread and the tentative categories refined and finalized. The categories of the perceptions that occurred most frequently in the field

notes were identified and formed the results of the field note analysis.

Results

Quantitative analysis of survey responses led to a refinement of the data used in measuring three of the survey constructs. The first research question was then answered by describing student perceptions of the flipped college algebra classroom. Instructor perceptions of the classroom were described to answer the second research question.

Survey Instrument

As shown previously in Table 1, five constructs were measured by multiple items on the survey instrument. Cronbach's alpha was calculated for each of the five constructs to estimate the consistency of responses between the items corresponding with the construct.

Following the initial calculation of Cronbach's alpha for each construct, responses for different items were iteratively removed from the calculation to find the combination of items that resulted in the greatest value of Cronbach's alpha. For each construct, only the items that maximized the value of Cronbach's alpha were used in calculating the descriptive statistics for the construct. All constructs, the items used in calculating the descriptive statistics, and the resulting Cronbach's alpha (for the multiple-item constructs) are listed in Table 2.

Cronbach's alpha of 0.652 for the construct *preparedness for the course* is a little lower than the commonly accepted cutoff value of 0.700 (Vogt, 2006). Because the consistency between the responses to items

Table 3
Categorization of Perceptions Derived From Essays

Category of Perception	Percentage of Essays
In-Class Problem Solving	
In-class problem solving or working with other students is beneficial	33.3
In-class problem solving or working with other students is not beneficial	22.2
Amount of Work	
Requires more time or work outside class than a lecture-based class	55.6
Requires about the same amount of time or work as a lecture-based class	22.2
General Positive Perceptions	
Video viewing is beneficial	33.3
General Negative Perceptions	
Can't ask questions about video lessons without going to the Math Lab	66.7
Less learning occurs in a flipped classroom than in a lecture-based class	44.4
A flipped classroom requires self-teaching or is like an online class	33.3
Instructor not always available in class because he helps other students	22.2
Reluctant to ask other students for help, because either doesn't want to bother other students or others are not knowledgeable	22.2
Tutors in Math Lab may not be able to explain solution methods shown in the videos because they haven't viewed the videos	22.2
Overall Preference	
Prefer traditional lecture-based instruction over flipped classroom	77.8
Prefer flipped classroom over traditional lecture-based instruction	22.2

8 and 13 is somewhat weak, using those two items to measure the same construct is somewhat questionable.

Student Perceptions

Both qualitative and quantitative methods were used to capture and identify students' perceptions. Qualitative analysis of the essay data produced categories that described student perceptions, and quantitative analysis of the survey data produced descriptive statistics that further characterized the perceptions.

Essays. Table 3 lists the perception categories found through qualitative analysis of the essays. The categories listed describe how students felt about the flipped college algebra classroom. The table also shows, for each category, the percentage of essays in which perceptions were described that were determined to belong to the category. Only categories with a percentage of essays of at least 22.2% (representing at least two essays out of the nine collected) are reported.

Note that the most frequently mentioned perceptions suggest the students felt that the flipped college algebra classroom required more work, resulted in less learning, and was less preferred than traditional lecture-based instruction.

Also, several students pointed out that they were unable to ask questions while viewing videos.

Survey. Quantitative analysis of the survey data revealed additional information concerning student perceptions. For each survey construct, the mean and standard deviation of the responses to all associated questionnaire items were calculated and reported. Results of the analysis appear in Table 4.

For the first three constructs listed in Table 4, a mean of 1 would indicate that the stated activity made the least possible learning contribution, and a mean of 5 would indicate that the stated activity made the largest possible learning contribution. The statistics shown suggest that, overall, students felt that all three activities: video viewing with note taking, video problem solving, and in-class problem solving, contributed to learning, with in-class problem solving making the greatest contribution of the three.

The high mean of 4.800 and low standard deviation of 0.600 for *video viewing engagement* reflects the fact that most survey participants reported both viewing most of the videos assigned during the term, and viewing most of each video. The number of times that each student logged in to the website to view videos and access the video problems was available to the

Table 4
Descriptive Statistics for Survey Constructs

Survey Construct	<i>M</i>	<i>SD</i>
Learning contribution of video viewing with note taking	3.700	1.269
Learning contribution of video problem solving	3.700	1.005
Learning contribution of in-class problem solving	4.300	1.269
Video viewing engagement	4.800	0.600
Learning opportunity afforded by the flipped college algebra classroom	2.567	1.257
Beneficialness of in-class problem solving	3.700	1.418
Preference for the flipped format	2.300	1.308
Preparedness for the course	3.150	1.492
Expected term grade	2.900	1.136

researcher from the website, and indeed that data did show that almost all students logged in frequently during the semester.

The constructs *learning opportunity afforded by the flipped college algebra classroom* and *preference for the flipped format* have the lowest means, each between 2.3 to 2.6. Among the survey participants, the measure of each the two constructs was lower than the midpoint of the response range of 1 to 5, which is 3.

The construct *beneficialness of in-class problem solving* had a mean of 3.700. The data shows that, on average, the survey participants felt that in-class problem solving was beneficial.

The construct *preparedness for the course* had a mean which is slightly greater than the midpoint of 3 and had the greatest standard deviation shown in the table. The survey data suggest that there were differences in prerequisite knowledge among the students, possibly with some students being well prepared for the course and other students very underprepared.

The mean for the construct *expected term grade* was 2.900. A response of 1 corresponded with an expected term grade of A, and a response of 5 corresponded with an expected term grade of F or W. The data indicates that, on average, survey participants expected a term grade slightly higher than a C.

Instructor Perceptions

Qualitative analysis of field notes yielded categories of instructor perceptions. The categories described in the following paragraphs are the categories of perceptions found most frequently in the field notes.

Students initially embraced the flipped college algebra classroom. In the beginning of the term the instructor explained the lesson procedure: viewing videos, taking notes, and solving video problems outside class, followed by solving more problems and then a quiz or exam inside class. Students accepted the flipped classroom as a different, but perfectly valid, method of learning mathematics.

On the second day of class students arrived, quickly turned in their video problems, and started working on the in-class assignment. The instructor reminded students that they were allowed, and even encouraged, to work together and to help each other in understanding how to solve problems. Many students began speaking with each other and seemed to enjoy getting to know each other as they worked on problems.

The material at the beginning of the semester was not difficult for most students. Nevertheless, several students asked the instructor questions during class, giving the instructor and student a chance to interact with each other.

Other researchers have found that students reacted quite differently, with some students finding it difficult to accept the flipped classroom as a viable form of instruction. When Willis (2014) flipped a precalculus class, some of the students notified him within the first three class sessions that they did not think they would be able to succeed in the flipped environment. As Willis explained, "Before they even understood completely the expectations of the class, they had decided it would not work for them because it was not like their high school math classes" (p. 45). The next time Willis flips, he plans to provide a transition period for the students, in which he will lecture a short amount of time in the first few classes and then show the students where the same information could have been found in a video or the textbook.

Van Sickle (2015) also found that students did not immediately buy in to the idea of the flipped classroom. Van Sickle employed several strategies to help students become enthusiastic about the flipped model, beginning with an email sent before the first day telling students that the class would be a bit different from their other classes, thus making it essential to attend the first class session. On the first day of class, after explaining the inadequacies with the lecture model, Van Sickle showed the students a lecture video and a sample quiz. Van Sickle then cited research that shows the flipped model is effective, possibly more effective than a lecture model.

Some students were unable, or unwilling, to complete the class assignments. At the beginning of the semester the instructor met students that had full-time jobs, other classes, and/or families, and seemed unaware of that several hours of study would be required outside class throughout the week in order to do well in the class. During the first week, the instructor emphasized the necessity of taking time to view the videos and solve the video problems prior to coming to each class. On the first day of class 24 students were enrolled, and after the census date 20 students remained in the class.

As the semester progressed students became more aware of the amount of work required in keeping up in the five-week college algebra course. Several students found that they were unable to keep up, and by the end of the term only 14 students remained enrolled. Of the 14 students that remained enrolled, only 10 continued to submit video problems until the end of the term.

Both Moroney (2013) and Van Sickle (2015) reported difficulty in getting students to prepare for class. In college algebra Moroney flipped the teaching of the topic of radicals over two consecutive four-hour class sessions and used short quizzes at the beginning of class to determine whether students were prepared. Moroney reported that for the first flipped class session it appeared that only about a third of the class was prepared, and for second flipped class session about two-thirds of the class was prepared. Van Sickle (2015) offered two strategies to employ to ameliorate the situation: accountability and acceptance. Van Sickle describes giving quizzes, assigning points for notes, or requiring students to respond to the videos on a discussion board as means holding students accountable. The other strategy offered by Van Sickle is to accept that students will not prepare and to allow them to use their smartphones, laptops, and tablets in class to watch videos. Less-efficient students will likely have problems to take home, and “may see that they have not used their time wisely, and this may encourage them to prepare more in the future” (Van Sickle, 2015, p. 607).

Several students were underprepared for the course. The flipped classroom gave the instructor the opportunity to work with students individually, answering their questions and explaining topics that were not clear. Working with students individually allowed the instructor to determine exactly why students were having difficulty in solving problems.

The instructor found that several students were mathematically underprepared for the course. There were students in the class that were unable to perform basic algebraic manipulations, such as grouping like terms or applying basic rules of exponents. Many students were unable to factor quadratic polynomials. Underpreparedness, combined with the accelerated pace

of the five-week college algebra course, seemed to make the course overdemanding for several students.

Some students were unable to solve basic problems, even after taking a complete set of video notes. On several occasions a student would have a complete set of video notes in class but would still be unable to solve a basic pertinent problem. It appeared that some students had copied notes from the video without understanding the mathematics explained in the video.

Some students lacked confidence. Some students became discouraged with their ability to keep up in learning the course content and expressed concern that they might not be able to pass the class. The instructor sought to instill confidence in the students by making it clear to students exactly what they should do to have the best chance of succeeding in the class.

The instructor advised students to view the assigned videos, take notes, solve the video problems, and then to seek any help that might be needed in completing the video problems or understanding topics that were explained in the videos. The instructor reminded students that the video problems could be solved using the methods shown in the videos. The instructor also told students that he was always willing to answer any questions and that help was available in the Math Lab both before and after class.

Some students were hesitant to ask questions in class. Although most students seemed comfortable in asking the instructor questions as he moved throughout the classroom, a small number of students asked very few questions. The instructor was concerned because the students who asked very few questions were not doing well in the class.

Hoping to help the seemingly timid students feel more relaxed in the classroom, the instructor solicited questions from each of those students and patiently explained the topic or problem solution of interest in a calm and reassuring manner. Unfortunately, those students continued to ask very few questions for the remainder of the term.

Some students enjoyed working with other students, while others chose to work alone. Some students chose to work with the students in their group, while other students seemed to prefer working alone. Students were free to sit wherever they liked in the classroom, and during the five-week term many students moved to different locations in the classroom.

Students sitting together were free to socialize and discuss any topic they wished to discuss. Students were also allowed to remain working alone if they had chosen to do so. The learning theory of constructivism claims that people use both individual experiences and social interaction to create knowledge (Pelech & Pieper, 2010), so the instructor allowed students to learn in the manner in which they felt most comfortable.

Grading for the flipped classroom can be time consuming. In the flipped college algebra classroom, students submitted video problems at the beginning of class and submitted a quiz at the end of class. The instructor found that grading video problem assignments that included multiple problems and a multiple-problem quiz can be time consuming, especially during a condensed five-week summer term with classes meeting four consecutive days of the week.

Students performed well in spite of challenges. Of the 14 students that remained enrolled at the end of the term, six students received a semester grade of A, B, or C. The instructor is experienced in teaching college algebra, having done so over 30 times. Given that several students were underprepared for the course, and that the course was condensed from the typical 16-week long semester into a five-week summer term, it is the instructor's opinion that the students did as well as could be expected. In fact, the instructor was impressed at the level of understanding that was achieved by the six successful students in such a short amount of time.

Discussion

In the United States, college algebra is a difficult course for most students, as evidenced by its relatively low passing rates (Haver et al., 2007; Ogden, 2014). When the pace of the course is three times as fast as the pace of the course during the typical 16-week long semester, it is unsurprising that students find the course even more difficult, and many students are unable to keep up.

Flipping offers numerous advantages over traditional lecture-based instruction. Bergmann and Sams (2012) list the following reasons to flip a classroom—and benefits for doing so—in their book *Flip Your Classroom: Reach Every Student in Every Class Every Day*:

- Today's students grow up with Internet access, including access to websites for posting pictures, sharing videos, and online socializing. Students are comfortable with digital learning: "All we are doing is speaking their language." (p. 20).
- With lessons on video, students are able to pause and rewind their teacher. Lectures move too fast for some students and too slowly for others. The pause and rewind features of online video delivery given students the ability to process the lesson more slowly, and repeat it if necessary.
- Flipping increases student-teacher interaction by eliminating the need for in-class lecture. Bergmann and Sams point out that they "are not advocating the replacement of classrooms and classroom teachers with online instruction" (p.

25). Rather, the time made available inside the classroom by flipping gives students the opportunity for greater face-to-face interactions with their teacher. With increased student-teacher interaction, students and teachers have opportunity to build better relationships.

- Flipping increases student-student interaction because the role of the teacher changes. The teacher is no longer a presenter of content, but a facilitator of learning. Bergmann and Sams develop a culture of learning by getting students to identify learning as their common goal. Students then begin to form their own collaborative groups and help "... each other learn instead of relying on the teacher as the sole disseminator of knowledge" (p. 27).
- Flipping allows teachers to differentiate instruction. A flipped classroom allows an instructor to provide struggling students with help on basic concepts and explain more complex topics to advanced students in the same classroom.

Van Sickle (2015) lists the following benefits that she observed in flipping college algebra.

- Students spend class time thinking and doing problems, rather than listening to the instructor talk.
- The flipped model is very helpful for students with special needs, whether diagnosed or not.

Taking notes and recording lectures in class for students with learning disabilities is not necessary in a flipped classroom since the lectures are already recorded, and the student can pause and replay the video as many times as necessary.

- Students fearful of mathematics benefit from the flipped model. Instead of panicking, students can simply ask the instructor when they have trouble.
- Students who must be absent from class need not get behind. Students can view the videos and work on problems outside class and ask questions upon returning to class.
- Flipped instruction allows the instructor to forge better relationships with the students. This allows the instructor to better address the student's mathematical needs and helps the student feel more comfortable in coming to the instructor for help.
- In a flipped classroom, students have the opportunity to get to know and help each other. Even knowledgeable students benefit from explaining mathematics to other students.

- An instructor may be able to provide enough support for a hard-working student in need of remediation to pass the course.

Moreover, a survey of the research literature found that although student perceptions of the flipped classroom are somewhat mixed, overall they are generally positive (Bishop & Verleger, 2013).

A disadvantage of using online videos to flip a college algebra classroom, as noted in 66.7% of the essays in this study, is that students cannot ask questions about the video lesson outside class without going to the Math Lab. However, inside the classroom the instructor can answer questions concerning not only the video and video problems, but the problems assigned in-class as well. And the flipped classroom greatly increases the time available for student-teacher interaction, giving students much greater opportunity to ask questions, and allowing the instructor to take time to explain problem solutions, and underlying concepts, in as much detail as needed.

In this study some students asked very few questions during the term or usually worked alone. Those students did not seem to be aware of primary advantages of the flipped classroom, namely, the time made available inside the classroom for student-teacher and student-student interaction. Many students in the flipped college algebra classroom were either unable or unwilling to perform the work required outside class in order to succeed in the course. Many students were underprepared for the course. Also, the pace of the course was about three times faster than the pace of the typical 16-week college algebra course. Most likely it was a combination of such factors that resulted in less than favorable impressions of the flipped college algebra classroom.

Limitations of the Research

The findings that are reported in this study may have been influenced by factors not relevant to the flipped classroom itself. Such factors include those related to researcher bias, participant observation, participation bias, and the survey instrument.

Researcher bias. The researcher attempted to remain neutral regarding all aspects and activities of this study, including observation of the flipped classroom, analysis of data, and reporting of perceptions. Nevertheless, the possibility remains that results were influenced by the researcher's personal biases and idiosyncrasies.

Participant observation. Human perception is selective, and the perceptions recognized and recorded by the instructor might be different than perceptions that would be recognized by other instructors. In fact, even a single event or activity may be perceived differently by different individuals.

Participation bias. Students were awarded extra credit for submitting an essay and responding to the online survey. There were three students who earned a term grade of A or B and did not submit an essay, possibly because they did not feel that they needed the extra credit. Had those students submitted an essay, the reported student perceptions may have been somewhat more positive.

Survey instrument. It may have been possible to improve the survey instrument. Psychometric techniques may have found problems with the questionnaire and suggested changes to better capture student perceptions.

Recommendations

A flipped college algebra classroom, in which students view videos, take notes, and solve video problems outside class and then solve more problems in class under the guidance of the instructor, offers many advantages over a lecture-based class. The class may require as much work for the student as a lecture-based class, but in a flipped college algebra classroom, help is more readily available during problem solving, which is when the student will likely need it the most. The researcher anticipates more positive perceptions in the near future, when students will take the course during 16-week semesters and meet only twice per week.

Suggestions for flipping a college algebra classroom, as described in this article, follow. The recommendations are supported by the findings of this study.

Explanation of learning. In over half of the essays, students complained that they could not ask questions about video lessons without going to the Math Lab. This is a drawback inherent in learning from videos, but the time made available inside the classroom for both active learning and personal interaction between the instructor and student more than compensates for not being able to ask a few questions during a live lecture. During the class time made available in a flipped classroom, an instructor can more patiently and completely answer any questions that a student might have.

Nevertheless, it is important for students to understand that not being able to ask a limited number of questions during a live lecture does not prevent them from learning course content. As stated in Jaster (2013):

It should be explained that the purpose of each video is to give students a basic understanding of the concepts and an overview of the problem solving techniques taught in the section. Students should expect most of their learning to occur during [in-class] problem solving, which will take place in the classroom where help is available from peers and the instructor. True, the video cannot

answer questions, but it should be explained that *many* more questions will arise during problem solving. Students need to understand that help will be available where most learning will occur and where they'll have the most questions. (p. 177).

Such an explanation may allow students to better accept and benefit from a flipped classroom.

Instructor workload. To manage grading, instructors could consider grading only a subset of the submitted video problems and quiz problems. For example, the instructor could choose to grade only one randomly chosen video problem and the one randomly chosen quiz problem, or the instructor could choose to grade only one problem randomly chosen from all the submitted video problems and quiz problems.

Also, to save time for both the students and the instructor, quizzes could consist of only one problem. Even consisting of only one problem, the quiz would still help students remain focused on the assignment during in-class problem solving and serve as a means of checking attendance at the end of class.

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Appendix A

Essay Assignment

The instructional approach in our class is different than in other college algebra classes since students are expected to watch videos and take notes *outside* of the classroom, and then solve problems *inside* the classroom. This approach to instruction is an example of a *flipped classroom*.

A study is being conducted of our class for mathematics education research. By completing this extra-credit assignment you will be participating in the study and providing data that may be used to improve mathematics education. Participation is voluntary and participants may withdraw from the study at any time without penalty. Your grade in the class will in no way be negatively affected by any aspect of the study. Students who choose to participate in the study by submitting an anonymous essay will receive 10 points extra credit on the final exam.

To receive extra credit the essay submitted must be at least one full page and no more than two pages in length, typed double spaced in a 12-point font on 8½ x 11 paper, and have one-inch margins on all four sides. The first line may be used for a title for the essay; all remaining lines must be used for the body of the essay. Each paragraph may be indented by ½ inch, and there should not be any extra spacing between paragraphs. This statement of the extra-credit assignment that you are reading conforms to these requirements.

Each student will be able to submit their essay anonymously by inserting it into a large envelope to be passed around during class. Students will sign a roll sheet taped to the front of the envelope so that extra credit can be awarded to those students who submit an essay. If any essay fails to meet any of the formatting requirements it will be rejected, and the essays will be returned and recollected. Rejected essays may not be resubmitted.

The study is primarily concerned with student perceptions of a flipped college algebra classroom. Besides the formatting requirements previously described, the only other requirement is that the essay describe what you think about the flipped college algebra classroom. In doing so you may answer all, some, or none the following questions.

- What do you think about learning college algebra by viewing videos and taking notes outside of class, and solving problems in class?
- What do you like or dislike about the flipped classroom?
- Which component(s) of the flipped classroom (video viewing, note taking, video problem solving, in-class problem solving, and/or quizzes) do you find the most or least beneficial in terms of learning?
- If you were to take the class again, would you prefer a flipped format or the traditional lecture format?
- Do you believe that you are learning better in the flipped classroom than if the class were being taught using traditional lecture?
- Does the flipped classroom require more or less work than a lecture-based class?
- Does learning in a flipped classroom result in a more efficient use of time, so that you can learn as much (or more) with less effort? Or is the opposite true?
- How can the flipped college algebra classroom be improved?

Only hard copies of the essay will be accepted. Essays may be submitted early, but no essays will be accepted late. **The essay is due at the beginning of class on Thursday, June 25, 2015.**

Appendix B Questionnaire

For each item, except items 9, 18, and 20, the student indicated her or his level of agreement with the statement by choosing one of the following responses.

1 Strongly Disagree 2 Disagree Somewhat 3 Neutral 4 Agree Somewhat 5 Strongly Agree

For items 9, 18, and 20, the student chose one of the responses shown with the item below.

-
1. I feel that viewing videos, and perhaps taking notes while doing so, contributes to my learning.
 2. I feel that solving video problems contributes to my learning.
 3. I feel that solving problems in class contributes to my learning.
 4. I try to learn as much as possible while viewing the videos.
 5. I find it helpful to view videos and solve video problems before coming to class, so that in class I can ask and get answers to non-basic questions.
 6. Solving problems in class instead of outside class allows me to better focus on the assigned problems.
 7. I prefer the flipped classroom format to the traditional lecture format.
 8. I feel that I had sufficient knowledge of mathematics at the beginning of the semester for taking this course.
 9. On average, I've watched about _____ of each assigned video at least once.
1: 0%-19% 2: 20%-39% 3: 40%-59% 4: 60%-79% 5: 80%-100%
 10. I believe that I am able to learn college algebra better with flipped classroom instruction than with traditional lecture-based instruction.
 11. I like being able to speak with my instructor during class and receive individual help when solving problems.
 12. I would like my future mathematics instructors to teach using a flipped classroom approach.
 13. I have previously taken a College Algebra course within the last two years AND had already been exposed to most of the mathematics taught in the course prior to the first day of class.
 14. I frequently pause or repeat segments of the videos in order to increase my understanding of the material.
 15. I feel the flipped classroom offers me greater opportunity to learn college algebra than the traditional in-class lecture with outside-class problem solving.
 16. Giving and receiving help with other students in my group increases my learning.
 17. The flipped classroom, with content delivery outside class, and problem solving in class, is an instructional method especially appropriate for mathematics.
 18. I've watched approximately _____ of the videos that have been assigned this semester.
1: 0%-19% 2: 20%-39% 3: 40%-59% 4: 60%-79% 5: 80%-100%
 19. I enjoy being able to work with other students in the classroom.
 20. At the end of the semester, I expect to receive a grade of _____.
1: A 2: B 3: C 4: D 5: F or W

Using Critical Thinking Teaching Methods to Increase Student Success: An Action Research Project

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Numerous studies and United States Department of Education reports indicate that university graduates lack critical thinking and problem solving skills that are needed for success in both the classroom and the modern workplace. Success in the classroom and workplace is a function of many attributes that change with the situation, but the ability to synthesize complex relationships and identify potential solutions to problems or innovation is a core competency. In this action research project, the curriculum in three business courses were modified to include and emphasize activities that research suggests help develop critical thinking. The Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, & McKeachie, 1991) was used to assess changes in 15 learning constructs during a class and correlated with grades. A modified MSLQ (Boyer & Usinger, 2012) was administered at the beginning and end of eight-week courses to provide insight into how students self-assess constructs for success. Results from classes over a 15-month period in 2013 and 2014 indicated improvement in 14 of 15 elements for success with three (intrinsic goal orientation, self-efficacy, and critical thinking) statistically significant.

Developing critical thinking skills needed for success beyond the classroom has been recognized as a primary goal of colleges and universities (Astin, 1993; Gellin, 2003; Stedman & Adams, 2012). In a survey of 433 institutions of higher learning 95% of the chief academic officers identified critical thinking as one of the most important skills for students and noted that 81% of employers wanted universities to place a stronger emphasis on developing critical thinking skills (AAC&U, 2011). The emergence of a knowledge-based economy over a once dominant manufacturing economy means that positive outcomes are dependent on critical thinking abilities (Abrami et al., 2008; Ahuna, Tinnesz & Keiner, 2014; Meepian & Wannapiroon, 2013).

While no universal definition of critical thinking has been identified, Liu, Frankel, and Roohr (2014) evaluated seven critical thinking frameworks to identify common elements. Critical thinking involves much more than accumulating information or processing information, rather critical thinking involves identifying, analyzing, synthesizing, and evaluating information to yield actionable knowledge to make effective decisions (Argyris, 1996; Giancarlo & Facione, 2001; Liu et al., 2011; Scriven & Paul, 2005). Alwehaibi (2012) summarized critical thinking as the ability not just to acquire knowledge but also to make sense of new information. Yet despite critical thinking being identified as an important educational objective, strong evidence exists indicating that many college graduates lack critical thinking skills needed for success in the modern workplace (Ahuna et al., 2014; Gellin, 2003; Shim & Walczak, 2012; U.S. Department of Education, 2006). Further, even though developing critical thinking is generally recognized as an important educational objective, evidence exists suggesting that

many college faculty do not fully understand how to effectively teach critical thinking or develop higher order cognitive abilities and are not able to incorporate critical thinking exercises into course curricula (Ahuna et al., 2014; Lauer, 2005; Paul, Elder & Bartell, 1997; Shim & Walczak, 2012). Many college faculty proclaim to encourage students to develop higher order cognitive skills and critical thinking yet use a lecture format and focus student assignments and efforts on memorization and lower level cognitive tasks which do not encourage critical thinking (Ahuna et al., 2014; Duron, Limback, & Waugh, 2006). A literature review by Beyer (2001) found that many high school and college students lack higher order critical thinking skills needed to be successful in postsecondary education or in chosen careers.

While general mental ability including critical thinking is one of the strongest predictors of long-term success in the workplace, many other factors determine success such as motivation, confidence, and time management skills that exist in a dynamic system that changes with every situation (Rode, Arthaud-Day, Mooney, Near & Baldwin, 2008). In the action research project being reported, methods identified in research that help develop critical thinking and higher order cognition were incorporated into business classes, and constructs identified for success in the classroom and workplace were assessed in a pre- and post-course assessment.

Background

Prior Research on Critical Thinking

The pressure on educational institutions and educators at all levels to provide quantitative assessment of educational progress through

standardized testing has been building for decades (Snyder & Dillow, 2012). Compliance with the federally mandated No Child Left Behind legislation is based on the ability of educational institutions to demonstrate that all students are academically “proficient” using state-mandated standardized tests by the 2014-2015 school year (Bigham & Riney, 2014). Faculties at colleges are now being required to supply documentation demonstrating that learning is taking place. While logical on the surface, measuring and documenting learning is a difficult task, but the simplest and easiest way is to assess the accumulation of facts or figures. Whether because of pressure for quantifiable assessments, simple effort for efficiency, or a tradition of lecture, faculty at institutions of higher learning tend to use lectures as the primary means of communicating content and focus tasks on memorization and lower-order cognitive assignments (Duron et al., 2006). Many teachers claim to indirectly attempt to teach students critical thinking skills; however, most students do not master the skill (Fisher, 2007). Paul and colleagues (1997) found that many instructors in California possess only a vague understanding of what critical thinking is and, not surprisingly, little knowledge on how to develop critical thinking skills in students. The Paul, Elder, and Bartell study found that while 89% of the sampled instructors identified critical thinking as a primary objective, only 9% included tasks in class that were clearly designed to promote critical thinking on a typical day in class. More current, numerous studies have found that high school teachers and university faculty lack basic knowledge or understanding of critical thinking or how to incorporate such thinking into lesson plans so that critical thinking can be developed in students (Bataineh & Alazzi, 2009; Innabi & El Sheikh, 2007; Lauer, 2005; Stapleton, 2011; Thurman, 2009). Yet, Alwehaibi (2012) found that critical thinking and overall student success could be improved if institutions of higher learning adopt and integrate strategies and techniques that have been identified as helpful in developing critical thinking into various courses. Additionally, Abrami and colleagues (2008) found that instructors who received specific training on methods to teach critical thinking were more effective in developing critical thinking in students than instructors who had no prior training.

The Basic Question

Boyer and Usinger (2013) administered a modified Motivated Strategies for Learning Questionnaire (MSLQ) to 1,513 first and second year students at a four-year public college in multiple subject areas with both face-to-face and online classes. The MSLQ is a self-assessment instrument aligned to a particular learning context providing insight into 15 constructs,

including critical thinking. Taken as a whole, the MSLQ constructs identify skills or attributes that are necessary for success in school and the workplace. By correlating MSLQ scores with success in school, as measured by grades, the Boyer and Usinger study offered insight into the effectiveness of college faculty in developing critical thinking and other attributes that are keys for success both in school and the workplace. Results from the Boyer and Usinger study indicated that two of the 15 MSLQ constructs have an impact on grades—self-efficacy and time/study management—with just self-efficacy emerging as a significant predictor of success i.e. grades. Further:

...[C]ritical thinking or meta-cognitive self-regulation play an insignificant or negative role in predicting course outcomes. It appears that students are producing positive course outcomes without utilizing these learning strategies for their course success. Furthermore, while this might reflect a general absence of some underlying and more advanced learning concepts, it might also indicate that faculty cultivates students who are successful as compliant learners rather than questioning “why” a concept of principle is correct (p. 18).

This condition should not be surprising considering the evidence that most college faculty lack understanding on critical thinking or how to help students develop this important ability. If one accepts the findings of Alwehaibi (2012), then the question becomes, “What practices should college faculty integrate into course tasks to help students improve in critical thinking and other key attributes for success?” The action research project described in this paper was designed to provide insight into the question of whether integrating critical thinking tasks into course designs will help students improve attributes needed for success both in the classroom and in the workforce.

Prior Studies on the Basic Question

Multiple researchers have explored educational practices that help develop critical thinking and higher order cognitive skills. Smith (1977) identified three kinds of classroom interactions that consistently yield positive results in critical thinking: faculty members positively reinforcing students with encouragement, praise, or use of student generated ideas; student participation in class with high levels of cognitive questioning and answering; and student interaction during a course. Astin (1993) went further to identify specific assignments to be beneficial in promoting self-reported critical thinking, such as making presentations in class and providing detailed critiques and positive feedback on written assignments. Tsui (1999) offered additional insight into

self-reported growth in critical thinking. Tsui found that detailed feedback from the instructor on written assignments, conducting of independent research, work on group projects, presentations in class, and essay exams are positively related to critical promoting critical thinking, while multiple-choice exams are negatively related to critical thinking.

Ritchhart and Perkins (2008) advanced the idea of thinking routines, which are classroom tools designed to help students practice and perfect deeper thinking. Thinking routines lead students into deeper reflection on questions needing further exploration by asking how and why. Day (2011) proposed the use of progressively complex case studies as a method to help students develop critical thinking skills. Day found that working in groups with presentations to the class for further questioning to be effective in developing critical thinking skills. Shim and Walzack (2012) summarized course activities and assignments that have been identified as helping to promote critical thinking. Assignments that require introspective thinking and analysis rather than retrieving or describing information include group projects, classroom presentations, written assignments with detailed feedback from the instructor, and independent research.

The use of threaded discussion forums has become a common use of emerging technology for educational purposes. Entire course programs are now administered online, and some faculty use online discussion forums to supplement face-to-face interactions. Arend (2007) investigated the online, asynchronous classroom environment and found written assignments and papers with instructor feedback and discussions to be positively related to critical thinking while multiple choice midterm and final exams and non-graded assignments were negatively related to critical thinking. In a subsequent investigation, Arend (2009) identified methods of questioning or interacting with students in online discussions that positively influenced critical thinking. Arend reasoned that questioning and discussion in face-to-face classroom environments, while helpful, do not allow students time for reflection or research, both of which have been positively associated with critical thinking. Arend found that frequent engagement by the instructor in online threaded discussion, in which the instructor remained neutral but questioned or challenged the student's statement or offered additional viewpoints, was positively associated with critical thinking.

Many researchers have indicated that teaching techniques like writing papers and making presentations facilitate the development of critical thinking skills, but Arend (2009) demonstrated that how the instructor interacts with students is a key factor in addition to the mode of interaction. Paul and Elder (2006) found that effective critical thinkers ask crucial questions, gather

and evaluate relevant information, approach a question objectively, communicate effectively, and derive well-reasoned, logical conclusions for complex problems. It becomes apparent that type and quality of interaction from the instructor, as well as the mode of interaction, are critical parts of developing critical thinking skills in students. Alwehaibi (2012) found that structuring questioning and dialogue along the following five avenues of thinking to be effective in stimulating critical thinking:

- Compare and contrasting
- Determining parts-whole relationships
- Determining the reliability of sources
- Causal explanation
- Prediction

Examples of questions on some of these areas follows:

- Finding out what caused something is called "causal explanations" (p. 197). This involved thinking about the possible causes of a problem, for example, to find the best solution to it.
- Prediction is an important skill you need to practice in making decisions. What predictions could you make before accepting a new job offer?
- Consider your college, what smaller things make up the whole? What is the function of each part?
- How do you decide what source of information is unreliable?

Alwehaibi concluded that critical thinking programs using multiple teaching techniques, strategies, and questioning that promotes deeper thinking of cause/effect relationships, parts-whole relationships, the reliability of sources, and prediction effectively help students develop critical thinking skills.

Methodology

Classroom Interaction

Three courses in a Bachelor of Business Administration program at the college taught by one instructor between October 2013 and December 2014 were selected for intervention. The courses were Strategic Planning and Management, Operations Management and Decision-Making, and Business Ethics. Each course is what the institution calls "fast track," which means that the courses are accelerated and condensed from the traditional 16-week semester into eight weeks. Two of the courses (Strategic Planning and Ethics) were in a hybrid format, meaning

that odd numbered weeks consist of three hours of classroom instruction while even numbered weeks are online. The third class (Operations Management) met face-to-face every week for three hours. All of the courses have an online discussion component in each week where students are required to answer questions and respond to other students' responses or the instructor's responses. Prior to beginning the project, each course was redesigned by the instructor to incorporate methods that were identified in the literature as being effective in helping develop critical thinking skills. Specific elements that were incorporated were:

- At least two required written assignments, case studies, or papers using APA format. Detailed feedback from the instructor using MS Word track changes and comments features identified errors in formatting, tone and language, organization, logic, and substance.
 - Students' unsubstantiated claims or unfounded statements were challenged with students directed to do additional research to provide evidence and avoid bias or personal opinion.
 - From 60% to 70% of the assessment on papers was evaluated for scholarship/critical thinking, organization, readability and style, and APA format (see appendix A for a sample rubric and assignments guidelines).
 - Each paper received 30 to 60 minutes of attention from the instructor to provide detailed feedback.
- Online discussion forums and weekly written assignments – These encouraged research beyond the textbook using peer reviewed or credible online sources to support positions in both written weekly assignments and online discussion posts as suggested by Arend (2009).
 - Students were required to respond to the initial question from the instructor then respond to at least two other students' posts or to the instructor with a substantive post. With two questions, students were required to submit six posts to receive full credit.
 - Students had a window of seven days, three before the class date and four after to submit all posts.
 - Students were encouraged to draft responses to assignments and online posts in MS Word and take the time to provide evidence to support positions.
- Students were allowed to use the same substantive post more than once in the online forum if relevant.
- Instructions were for students to spend 30 minutes developing one substantive post and using it five times, if relevant, rather than spending six minutes doing five meaningless posts that do not advance the discussion or challenge thinking. Two points of extra credit were awarded for each new event that demonstrated outside research to support observations or positions. Total points for the class were 1,000.
- The instructor blocked out one to two hours daily from four to six days each week to engage with students in online forums.
- Classroom Sessions - Classroom sessions were modified to increase debate and sharing of experience using the 5-Why approach by the instructor to operationalize the thinking routines proposed by Ritchhart and Perkins (2008). The 5-Why methodology follows the theory that asking why five times will lead to the root cause of any problem or question.
- Presentations – Class presentations were mandatory in Strategic Planning with teams of 4 to 6 students presenting 5-year strategic plans to the erstwhile Board of Directors, which is similar to the process suggested by Day (2011). Opportunities for collaboration and presentations were available and encouraged in other classes but not required.

Due to differences in subject matter, the courses differed in several significant ways. Strategic planning and ethics contain multiple papers that require research and compliance with APA format standards along with required group presentations. The focus of operational decision-making is interpreting data, then synthesizing the data in order to make an informed management decision in areas such as forecasts, quality control, inventory control, productivity, and more. Operational decision making relies heavily on using Excel to organize data to assist in the decision-making process and included two written assignment in the form of a report to the boss and, thus, APA is not required. Additionally, while opportunities for presentations are offered, they are not required as in strategic planning and ethics.

Demographics

Demographics of the student population in the Bachelor of Applied Science (BAS) program at the college are different from a traditional university. The college is a

former junior college and is part of the State College System in Florida offering baccalaureate degrees in several disciplines, including business. The non-traditional students in the bachelor programs have an average age of 33 with a range from 19 to 60. About 67% of the students in the bachelor program are female while many are veterans who have completed military service and most have jobs and families. Consequently, all classroom sessions are in the evening from 6:00pm to 9:00pm.

Instrumentation

A modified Motivated Strategies for Learning Questionnaire (MSLQ) was chosen as the instrument to evaluate multiple dimensions of success. The original MSLQ developed by Pintrich and colleagues (1991) was designed to be modular such that researchers may choose all or some of the 15 constructs that apply to specific research questions. Consequently, the MSLQ has been widely used, modified, and adopted for many studies (Boyer & Usinger, 2012; Daura, 2015; Niroomand, Behjat & Rostampour, 2014; Opdecam, Everaert, Keer, & Buysschaert, 2014). Two primary considerations drove the decision to use the modified MSLQ: first, the belief that success both in the classroom and the workplace is driven by dynamic interactions of multiple attributes like critical thinking ability, goal orientation, self-efficacy, etc. which are components of the MSLQ; and second, the desire to build on research performed by Boyer and Usinger (2012) who found no correlation between critical thinking and success as measured by grades in a sample of lower level first and second year students at the college. The MSLQ is a self-assessment instrument originally consisting of 81 questions with 15 constructs grouped into two scales: motivation and learning strategies (Pintrich et al., 1991). Boyer and Usinger modified the original 81-question instrument by eliminating questions that were no longer relevant or not applicable in the current educational environment. For example the original MSLQ, developed before the Internet, contained questions with language assuming classroom attendance. Thus many questions did not apply to online classroom settings. The resulting 61-question instrument can be completed more quickly online than the original MSLQ, making responses more easily completed by current students (see Appendix B: MSLQ Item by Construct List). Table 1 compares the construct reliability of the original MSLQ with the modified MSLQ employed by Boyer and Usinger showing that the modified MSLQ retains construct reliability similar to the original instrument.

Pintrich and colleagues (1991) described the 15 constructs as self-assessments of the degree to which a student perceives his or her use of the attribute as follows:

- **Intrinsic Goal Orientation** – Provides insight into the reasons why a student is engaged in a course as a whole. Intrinsic goal orientation gauges the strength of perception that the student is participating for reasons such as challenge, curiosity, and mastery and perceives participation as an end to itself rather than a means to an end. High scores indicate that the student is internally motivated.
- **Extrinsic Goal Orientation** – Extrinsic goal orientation refers to the degree to which a student perceives himself or herself as participating in a course as a whole for reasons such as grades, rewards, performance, evaluation by others, and competition. High scores suggest that the student perceives the learning task as a means to an end rather than the end itself.
- **Task Value** – Task value refers to the student's evaluation of how interesting, how important, or how useful a task is. High task value scores suggest that students perceive course material as important, interesting, and useful.
- **Control of Learning Beliefs** – Control of learning beliefs scores provide insight into the strength of student's belief that effort to learn will yield positive outcomes. High scores indicate the strength in student's belief that success is contingent on their own effort rather than on external factors, like the teacher, and that the student can control academic performance.
- **Self-Efficacy for Learning and Performance** – Self-efficacy reflects the student's perception of their ability to master a task and in the confidence in their ability to perform assigned tasks. High scores suggest a greater level of self-confidence in their abilities.
- **Test Anxiety** – Test anxiety has been shown to have a negative effect on academic performance. Worry about tests introduces negative thoughts that degrade performance, while the emotional component of anxiety may trigger affective or physiological conditions that negatively affect academic performance on tests. Lower scores suggest that the student perceives less anxiety for taking tests.
- **Rehearsal** – Rehearsal strategies for learning refer to memorizing, reciting, or naming names from a list. Rehearsal strategies do not appear to help students identify or build connections among the multiple pieces of information or integrate and synthesize the information with prior knowledge. High scores

Table 1
MSLQ Item by Construct Reliability Comparison (Chronbach's Alpha)

	Original MSLQ		Modified MSLQ	
	Items	α	Items	α
MSLQ Motivationaal Constructs				
Intrinsic Goal Orientation	4	.74	4	.75
Extrinsic Goal Orientation	4	.62	2	.63
Task Value	6	.90	2	.89
Control of Learning Beliefs	4	.68	3	.75
Self-Efficacy for Learning & Performance	8	.93	8	.96
Test Anxiety	5	.80	4	.76
MSLQ Learning Strategies Constructs				
Rehearsal	4	.69	2	.69
Elaboration	6	.75	2	.58
Organization	4	.64	2	.54
Critical Thinking	5	.80	5	.81
Metacognitive Self-Regulation	12	.79	10	.84
Time/Study Environmental Management	8	.76	7	.82
Effort Regulation	4	.69	4	.72
Peer Learning	3	.76	3	.78
Help Seeking	4	.52	3	.72
Total Items in Questionnaire	81		61	

indicate that students rely heavily on rehearsal strategies to complete learning tasks.

- **Elaboration** – Elaboration strategies assist students to implant information into long-term memory by constructing internal connections between multiple pieces of information. Elaboration strategies include paraphrasing, summarizing, creating analogies, and note-taking which assist the student to synthesize and integrate new information with prior knowledge. High scores indicate a perception that the student is relying more on elaboration strategies than on rehearsal strategies to learn.
- **Organization** – Organization strategies help students choose appropriate and relevant information, then identify meaningful connections between multiple pieces of information. Clustering, outlining, and identifying main ideas in passages are examples of organizing strategies. High scores suggest that students rely on organization strategies to learn.
- **Critical Thinking** – Critical thinking provides insight into the frequency and degree that students synthesize and apply prior knowledge to new situations to solve problems, make decisions, or make critical evaluations. High scores indicate greater reliance on critical thinking skills.
- **Metacognitive Self-Regulation** – Metacognitive self-regulation includes three primary learning

activities: planning, monitoring, and regulating. Planning involves goal setting and task analysis to identify relevant prior knowledge that is applicable to a current task. Monitoring involves tracking or focusing attention as a student reads, self-testing, and questioning. Regulating activities are those adjustments the student makes to check and improve performance as a task unfolds. High scores indicate greater reliance on metacognitive self-regulation skills.

- **Time and Study Environment** – Time and study environment gauges the student's perception of their time management skills, which include scheduling, planning, and managing study time effectively. High scores in time and study environment suggest that students believe they are effective in time management.
- **Effort Regulation** – Effort regulation refers to students' ability to control levels of effort and attention when confronted with distractions and uninteresting tasks. High scores indicate perceive they are able to focus attention and effort on tasks by ignoring distractions or uninteresting tasks.
- **Peer Learning** – Peer learning refers to collaboration or interaction with other students to complete assignments. High scores indicate that students engage and collaborate with other students to complete assignments.

Table 2
Descriptive Statistics and t-test Results

	Mean		Diff.	Standard Deviation	t-Value	Sig
	Survey 1	Survey 2				
MSLQ Motivational Constructs						
Intrinsic Goal Orientation	5.039	5.183	.145	0.992	1.750	
Extrinsic Goal Orientation	5.528	5.283	-.245	1.301	-2.250	*
Task Value	4.892	5.038	.146	1.330	1.320	
Control of Learning Beliefs	5.592	5.270	.963	1.590	1.780	
Self-Efficacy for Learning & Performance	5.263	5.450	.187	0.917	2.440	*
Test Anxiety	4.666	4.645	-.021	1.384	-0.180	
MSLQ Learning Strategies Constructs						
Rehearsal	4.270	4.101	-.169	1.583	-1.270	
Elaboration	5.399	5.458	.059	1.529	.560	
Organization	4.773	4.734	-.039	1.333	-.440	
Critical Thinking	4.376	4.565	.189	1.036	2.180	*
Metacognitive Self-Regulation	3.773	3.812	.039	0.702	.660	
Time/Study Environmental Management	5.191	5.245	.054	0.859	.740	
Effort Regulation	5.280	5.294	.014	1.047	.160	
Peer Learning	3.123	3.238	.115	1.400	.900	
Help Seeking	3.795	3.783	-.012	1.122	-.130	

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

N=143 Students who took both surveys

- Help Seeking – Help seeking refers to the willingness of students to ask other students or instructors for help when needed. High scores indicate a greater willingness to engage with other students or instructors for help when needed.

The Process

All of the classes were eight weeks in length. Students were asked to participate in the study during the first class session. The instructor explained that the survey was part of a process improvement project at the college, participation was voluntary, and it would not influence grades beyond 10 points of extra credit or 1% of the 1,000 points in the course. A link to the modified MSLQ was sent to each student by email from the college's Department of Institutional Research. Students clicked on the link and entered responses that were immediately transmitted to the Department of Institutional Research database. Emails were sent out in weeks one and eight, thus allowing for a comparison between the beginning and the end of the class of the MSLQ constructs, as well as a variety of correlations with grades and other variables.

The Sample

In total, 316 students were asked to participate in the three courses over a 15-month period. All three courses are upper level for juniors or seniors, with Strategic Planning typically the last or next to last course taken before graduation. A total of 143 students (45.3% participation) completed both the beginning and end of class MSLQ (Survey 1/Survey 2). Participation by class breaks down as follows; Strategic Planning – 64, Operations Management & Decision-Making – 71, and Ethics – 8. Of the total number of students, 86 were females, and 57 were males.

It is significant to note that the average numerical grade on a 4-point scale with 4 points for an A and 0 for an F for the 173 students who did not participate was 2.63, while the average grade for the 143 participants was 3.15. An unstacked ANOVA using Minitab statistical software of these two groups revealed that the difference between the two groups is statistically significant ($p < .001$). This condition should be considered when evaluating the results because the participating sample does not represent the total population, but rather is comprised by the top students who would be expected to enter the classes with higher scores on many of the MSLQ constructs than the general population.

Results

Paired t-tests comparing the beginning and end of term change in the self-assessed perception by students of the 15 MSLQ constructs indicate that students perceive improvement in 14 of the 15 constructs. The lone exception to improvement was organization. Change in three of the MSLQ constructs were statistically significant: extrinsic goal orientation, self-efficacy for learning and performance, and critical thinking. Table 2 contains descriptive statistics and t-test results for the beginning of class and end of class MSLQ results.

While improved perception of student's motivational and learning strategies is good, the ultimate goal of education is to increase the probability of success. Success in the study was approximated by grades with letter grades converted to numerical values—A = 4, B = 3, C = 2, D = 1, F = 0—making a search for correlations with survey results possible. Pearson's correlation coefficient was calculated comparing the end-of-class Survey 2 results and the amount of change that students experienced between Survey 1 and Survey 2 with grades that students earned in the respective class. Table 3, shows correlations between Survey 2 and the difference between Survey 1 and Survey 2 with grades. Results for three constructs—*intrinsic goal orientation, self-efficacy for learning and performance, and time/study management*—

generated statistically significant correlations for both the final survey and the change with grades. Analysis of variance (ANOVA) tests were performed to determine if there were significant differences between several meaningful groups in the study sample. ANOVA tests were performed comparing the strategic planning with operations management result both for the end of class or survey 2 results and between the change from the first to the second survey. No ANOVA was performed for the ethics class because only eight students in two classes participated; this was too small of a sample to yield valid results. Table 4 shows which course or gender recorded higher scores on survey 2, which group recorded greater change, and whether the results were statistically significant. Scores on the end of term survey for two constructs, control of learning beliefs and effort regulation, revealed significant correlation with grades while the increase in extrinsic goal orientation correlated significantly with grades.

Table 4 shows that students taking the strategic planning course recorded higher scores on all but two MSLQ constructs. Students in operations management generated statistically significant improvement from survey one to survey two in intrinsic goal orientation and time/study environmental management. Associating statistically significant improvement in intrinsic goal orientation and time/study management operations management with the strong correlation in these constructs with grades is a meaningful finding.

Table 3
Correlation Between Survey 2 and Change with Grades

	Correlation with Grades			
	Survey 2	Sig	Diff	Sig
MSLQ Motivational Constructs				
Intrinsic Goal Orientation	0.287	***	0.228	**
Extrinsic Goal Orientation	0.066		0.228	**
Task Value	0.119		0.060	
Control of Learning Beliefs	0.331	***	0.112	
Self-Efficacy for Learning & Performance	0.484	***	0.240	**
Test Anxiety	-0.145		-0.081	
MSLQ Learning Strategies Constructs				
Rehearsal	-0.086		-0.094	
Elaboration	0.156		-0.014	
Organization	0.007		-0.030	
Critical Thinking	0.127		0.116	
Metacognitive Self-Regulation	0.113		0.139	
Time/Study Environmental Management	0.446	***	0.175	*
Effort Regulation	0.242	**	0.068	
Peer Learning	0.006		0.137	
Help Seeking	-0.110		-0.007	

Note. *p<.05; **p<.01; ***p<.001

Table 4
MSLQ Item by Construct Reliability Comparison (Chronbach's Alpha)

	ANOVA by Course				ANOVA by Gender			
	Survey 2	Sig	Diff	Sig	Survey 2	Sig	Diff	Sig
MSLQ Motivational Constructs								
Intrinsic Goal Orientation	SP		OM	*	M		M	
Extrinsic Goal Orientation	SP		SP		M		M	
Task Value	SP		SP		M		M	
Control of Learning Beliefs	SP		OM		M		F	
Self-Efficacy for Learning & Performance	SP		OM		M	*	F	
Test Anxiety	OM		OM		F	*	F	
MSLQ Learning Strategies Constructs								
Rehearsal	SP		OM		F		F	
Elaboration	SP		OM		F		F	
Organization	SP		SP		F		F	
Critical Thinking	SP		SP		M		M	
Metacognitive Self-Regulation	SP		SP		M		F	*
Time/Study Environmental Management	OM		OM	*	F		M	
Effort Regulation	SP		SP		F		M	
Peer Learning	SP		SP		M		F	
Help Seeking	SP		SP		F		F	

Limitations and Discussion

Any discussion or conclusions to be derived from the results must consider multiple limitations. The sample is not a typical group of traditional college students. The average age of students in the baccalaureate program at the college is 33, and nearly all students have families and jobs. All participants were juniors or seniors with many at the very end of the program, taking the last or second to last class before graduation. Additionally, the students who volunteered to participate represented the upper end of the scholastic spectrum with grades that were significantly higher than the group who did not participate. It seems logical to expect that participants were more highly motivated and possess higher levels key skills needed for academic success at the beginning of the class and dedicated more effort to improving those skills during the eight weeks than students who did not participate. Additionally, techniques were incorporated into a small number of courses (3) taught by just one instructor. All of these factors suggest caution in generalizing the results over a larger, more representative population of students and faculty.

At the outset of the action research project, some internal debate emerged at the college about whether eight weeks was adequate time to expect significant changes in any of the MSLQ constructs or whether eight weeks was adequate time to show correlations with success as measured by grades. Improvement in 14

of the 15 MSLQ constructs with three—extrinsic goal orientation, self-efficacy, and critical thinking—statistically significant indicate that progress is possible, at least with a population such as the sample.

Coursework was created to incorporate methods that a large body of research suggest have positive effects on helping students develop critical thinking skills (Alwehehaibi, 2012; Arend, 2007; Arend 2009; Beyer, 2001; Day, 2011; Ritchhart & Perkins, 2008), and statistically significant improvement in MSLQ scores provides support for the prior research. The data also suggests that other essential skills are also positively affected, particularly in the areas of extrinsic goal orientation and self-efficacy. Significant decrease in dependence on extrinsic goals orientation combined with the increase in intrinsic goal orientation suggest that students' orientation shifted from extrinsic to intrinsic goals which is particularly relevant given the strong correlation of goal orientation with grades. Students who are more internally motivated seem to be more successful, which also supports prior research (Adnan, Mohamad, Buniamin, & Mamat, 2014; O'Reilly, 2014).

Similarly, statistically significant increases in self-efficacy, along with control of learning beliefs with the strong correlation with success in both areas, suggest that methods being used helped students develop stronger self-confidence in themselves and their ability to control their own destiny. Both of these skills are essential for success both in the classroom and the

workplace (Adnan et al., 2014, de la Fuente, Justicia, Sander, & Cardelle-Elawar, 2014).

While increases in students' time and study management skills did not reach levels to be significant, the correlation with time management skills with grades is significant. Balduf (2009) found that poor time management is a major contributor to underachievement or failure for college students. The data suggests that even modest improvements in time and study management skills can yield significant improvement in success both in the classroom and the workplace. Many volumes have been published on the need for managers to be more effective in managing competing schedules and the hectic pace in the workforce (Fischer & Lehman, 2005; Mitchell, Skinner & White, 2010). Results in this study suggest that the educational methods used might benefit students in ways beyond the school environment and in successful careers in the workforce.

ANOVA analysis of results by course shows that while students recorded favorable scores on all but two constructs in Strategic Planning, students taking Operations Management showed greater improvement, with the differences between the two surveys statistically significant in intrinsic goal orientation and time and study management. Operations Management is a notoriously difficult course in many business programs because success requires strong math skills, as well as Excel familiarity to aid in organizing the data, analyzing the data, then generating logical management actions in response to the data in written form. Many students demonstrated high levels of anxiety over one or more of the components, particularly math and Excel, and they provided feedback that completing many assignments took hours. Successfully completing the assignments and the course required time rationing and internally generated perseverance, particularly with the sample of students with families and full time jobs. The strong correlation of intrinsic goal orientation and time and study management with grades suggest that methods used in operations management contribute significantly to success.

ANOVA analysis of results by gender yielded two significant results. Self-assessment of self-efficacy was significantly greater for males than females while test anxiety was significantly higher for females. Kukul, Korukcu, Ozdemir, Bezci, and Calik (2013) observed similar results in college nursing students while Rezaei (2012) added to a body of literature suggesting that the results observed in the study may be linked to cultural expectations for women. While not rising to significant levels, females showed greater improvement in both areas than male participants did.

Conclusion

Given that the sample in the study is composed of higher-performing, nontraditional students being subjected

to various methods to improve critical thinking by just one instructor in a small number of courses, results indicate that it is possible to improve students' self-assessed skills in multiple key abilities that have been linked to success both in the classroom and workplace. At the outset of the study, there was some skepticism on whether eight weeks was adequate time to significantly affect any of the MSLQ constructs. Results clearly indicate that eight weeks is adequate time to positively affect both constructs and outcomes linked directly with success. Instructors desiring to have a positive influence on critical thinking skills and other key skills that are related to success should consider including multiple written assignments and emphasizing research, then providing detailed feedback on scholarship, logic, and style. Other methods to consider include using online discussion forums to extend classroom discussion to promote deeper thinking and scholarship through questioning and challenging student posts and individual or team presentations to the class.

Further research is warranted with a more representative sample of all college students in multiple subject areas using techniques in the study applied by multiple faculty. Results of the study suggest that significant improvement is possible at least with highly motivated, non-traditional, students by faculty who have been trained in the concepts of critical thinking and methods needed to develop critical thinking in classes. Extending the results of the study across a more representative sample in multiple subjects would require extensive education of faculty and commitment to making significant time and effort allocations to the project. College administrators desiring to promote critical thinking and the other related constructs should consider requiring, or at least strongly recommending, that faculty include established methods for developing critical thinking in course curricula. College administrators would necessarily have to include extensive training and education programs for faculty to fully understand the dynamics of critical thinking and how to properly develop those skills with students.

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Appendix A
Example Guidelines and Rubric for Papers

GEB4891 Strategic Planning & Management INTELLECTUAL ASSETS

INTELLECTUAL ASSETS PAPER DUE: 11 June 2015*

GUIDELINES:

1. Based on Case Study 21 – Southwest Airlines (pg. C137).
2. Instructions – Analyze and summarize the key attributes of Southwest’s culture and its intellectual assets. Discuss how the Company can use these attributes to adapt, change, and continue to grow as the environment in which the Company does business changes. You may supplement your argument and add strength to it by citing other sources.
3. Length – 750 – 1,000 words (typically 3 – 4 pages of text) (standard 8.5” x 11” paper). Title page and references are not included in the word count.
4. Layout - Must include: Title page**; Introduction ***; the body of work; and conclusion.
5. References - Minimum number of references: One at least, in addition to the textbook, with more as needed to support your observations. Points will be deducted if sources are not cited and referenced. You may use books, articles from periodicals or newspapers, and peer reviewed journals. Wikipedia is none of these and is not an acceptable reference.
6. Graphics - Graphics, charts, pictures, art are ok if they add to your discussion and help clarify some point. APA says black & white only but color is OK for this paper.
7. Format - Double spaced; typewritten or computer printed
8. Font – 12 pt. (Times New Roman)
9. Margins - 1” margins all around per APA
10. Citations/References – Give credit for work that is not yours by citing the source in the body of the paper and providing the complete reference in the reference section. See APA lite for guidance. The professor is available to provide additional guidance during office hours.
11. Grade/Point Value – 70 pts. (7% of total)...grading rubric on the next page

Suggested Guide: (APA Lite – 2009. Located in PAL, under contents, Course Information.)

*Late submissions will lose grade points at the rate of 10% per any portion of a day up to 3 days. After which, the paper will not be graded.

** Title page must include – at minimum: Title of your work; Course number (GEB4891); Course Name (Strategic Planning and Management); Your name; Name of college (); Name of your professor (); Date of submission.

***Your introduction will act as a lead in to the rest of the essay and provide a general statement about the case and your findings. A good introduction also contains some “hook” statement that captures the reader’s interest and encourages him or her to read on. May be typically 100-200 words in such a short essay.

GE4891 Strategic Planning & Management - Intellectual Capital Paper		
Maximum Total Points = 70		
Content and Scholarship 40 Points	Points Earned	Comments:
Content/Subject Matter (30 Points)		
<ul style="list-style-type: none"> All key elements of the assignment are covered in a substantive way 		
Instructions This paper will be based in the Southwest Airlines case study number 27, pages C194 to C203 in the text. You read the case study then discuss elements of the organizational culture at Southwest answering the		
<ul style="list-style-type: none"> What are the key attributes of Southwest's culture and it's intellectual assets? 		
<ul style="list-style-type: none"> How can the Company use these attributes to adapt, change, and grow as the business environment changes? 		
<ul style="list-style-type: none"> Write a 750 - to 1,000-word paper in which you discuss and answer the questions above based on the case study. 		
<ul style="list-style-type: none"> The content is comprehensive, accurate, and/or persuasive 		
<ul style="list-style-type: none"> Displays an understanding of relevant theory 		
<ul style="list-style-type: none"> Major points supported by specific details/examples 		
Scholarship/Critical Thinking (10 Points)		
<ul style="list-style-type: none"> Writer compares/contrasts/integrates theory/subject matter with work environment/experience 		
<ul style="list-style-type: none"> Research is adequate and timely with at least 1 reference 		
<ul style="list-style-type: none"> Writer has gone beyond the textbook and course materials 		
<ul style="list-style-type: none"> The writer appropriately analyzes and synthesizes theory/practice to develop new ideas, concepts, or applications 		
Clarity of Logic and Presentation 20 Points	Points Earned	Comments:
Organization (10 points)		
<ul style="list-style-type: none"> The introduction provides a sufficient background on the topic and previews major points 		
<ul style="list-style-type: none"> Central theme/purpose is immediately clear 		
<ul style="list-style-type: none"> Structure is clear, logical, and easy to follow 		
<ul style="list-style-type: none"> Subsequent sections develop/support the central theme 		
<ul style="list-style-type: none"> Conclusion/recommendations follow logically from the body of the paper 		
Readability and Style (10 Points)		
<ul style="list-style-type: none"> Paragraph transitions are present and logical and maintain the flow throughout the paper. 		
<ul style="list-style-type: none"> The tone is appropriate to the content and assignment 		
<ul style="list-style-type: none"> Sentences are complete, clear, and concise. 		
<ul style="list-style-type: none"> Sentences are well-constructed, strong and varied 		
<ul style="list-style-type: none"> Sentence transitions are present and maintain the flow of thought. 		
Grammar and Adherence to APA Format and Guidelines 10 Points	Points Earned	Comments:
<ul style="list-style-type: none"> The paper, including the title page, reference page, tables, and appendices, follow APA guidelines for format. 		
<ul style="list-style-type: none"> Citations of original works within the body of the paper follow APA guidelines. 		
<ul style="list-style-type: none"> The paper is laid out with effective use of headings, font styles, and white space. 		
<ul style="list-style-type: none"> Rules of grammar, usage, and punctuation are followed. 		
<ul style="list-style-type: none"> The paper is free of spelling errors. 		
<ul style="list-style-type: none"> Timeliness (Penalty for being turned in late or premium for being early) 		
Total Grade	0	

Appendix B
MSLQ Item by Construct List

Motivational Constructs
Intrinsic Goal Orientation
I prefer course material that really challenges me so I can learn new things.
I prefer course material that arouses my curiosity, even if it is difficult to learn.
The most satisfying thing for me in classes is trying to understand the content as thoroughly as possible.
When I have the opportunity, I choose course assignments that I can learn from even if they don't guarantee a good grade.
Extrinsic Goal Orientation
Getting a good grade is the most satisfying thing for me right now.
The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.
Task Value
I am very interested in the content area of this course.
I like the subject matter of this course.
Control Beliefs about Learning
If I study in appropriate ways, then I will be able to learn the material in this course.
It is my own fault if I don't learn the material in this course.
If I try hard enough, then I will understand the course material.
Self-Efficacy for Learning and Performance
I believe I will receive an excellent grade in this class.
I'm certain I can understand the most difficult material presented in the readings for this course.
I'm confident I can understand the basic concepts taught in this course.
I'm confident I can understand the most complex material presented by the instructor in this course.
I'm confident I can do an excellent job on the assignments and tests in this course.
I expect to do well in this class.
I'm certain I can master the skills being taught in this class.
Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.
Test Anxiety
When I take a test I think about items on other parts of the test I can't answer.
When I take tests I think of the consequences of failing.
I have an uneasy, upset feeling when I take an exam.
I feel my heart beating fast when I take an exam.
Learning Strategies Constructs
Rehearsal
When I study, I practice saying the material to my self over and over.
When studying for classes, I read my class notes and the course reading over and over.
Elaboration
When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.
When reading for classes, I try to relate the material to what I already know.
Organization
When I study, I go through the readings and my class notes and try to find the most important ideas.

When I study, I go over my class notes and make an outline of important concepts.
Critical Thinking
I often find myself questioning things I hear or read in this classes to decide if I find them convincing.
When a theory, interpretation, or conclusion is presented in class or in readings, I try to decide if there is good supporting evidence.
I treat the course material as a starting point and try to develop my own ideas about it.
I try to play around with ideas of my own related to what I am learning in a class.
Whenever I read or hear an assertion or conclusion in classes, I think about possible alternatives.
Meta-cognitive Self-Regulation
When reading for classes, I make up questions to help focus my reading.
When I become confused about something I'm reading, I go back and try to figure it out.
If course materials are difficult to understand, I change the way I read the material.
Before I study new material thoroughly, I often skim it to see how it is organized.
I ask myself questions to make sure I understand the material I have been studying in class.
I try to change the way I study in order to fit the course requirements and instructor's teaching style.
I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying.
When studying, I try to determine which concepts I don't understand well.
When I study, I set goals for myself in order to direct my activities in each study period.
If I get confused taking notes, I make sure I sort it out afterward.
Time and Study Environmental Management
I usually study in a place where I can concentrate on my course work.
I make good use of my study time.
I find it hard to stick to a study schedule.
I have a regular place set aside for studying.
I make sure I keep up with the weekly readings and assignments for my courses.
I often find that I don't spend very much time on school work because of other activities.
I rarely find time to review my notes or readings before an exam.
Effort Regulation
I often feel so lazy or bored when I study that I quit before I finish what I planned to do.
I work hard to do well even if I don't like what we are doing.
When course work is difficult, I give up or only study the easy parts.
Even when course materials are dull and uninteresting, I manage to keep working until I finish.
Peer Learning
When studying for a class, I often try to explain the material to a classmate or a friend.
I try to work with other students to complete the course assignments.
When studying for a class, I often set aside time to discuss the course material with a group of students from the class.
Help Seeking
I ask the instructor to clarify concepts I don't understand well.
When I can't understand the material in a course, I ask another student in this class for help.
I try to identify students in my classes whom I can ask for help if necessary.

Music Instrument Teachers in Higher Education: An Investigation of the Key Influences on How They Teach in the Studio

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In higher education music instrument teaching, there is a strong tradition of high-level performers being recruited to teach advanced students within the private studio despite the fact these educators often have no training in pedagogy. The studio environment also continues to be dominated by the one-to-one lesson format and the master-apprentice tradition. While the literature overviews a long history of the master-apprentice tradition in various fields, there is to date minimal empirical research that specifically evidences the extent to which it is cyclical in nature. This paper reports on survey data from 54 current tertiary educators across four countries who were asked to identify the key influences on how they work within the music studio. The data point not only to the influence of the master-apprentice tradition, but also to the fact that most current educators rely on previous teachers and experiences of teaching to inform their pedagogy.

In terms of the broad field of education, formal accreditation is normally required in order to teach at the early childhood, primary, and secondary level schools or colleges. At the tertiary or university level, however, the requirement to be formally accredited to teach is less common. This is currently the case in the area of the creative and performing arts in higher education, with many tertiary educators recruited on the basis of their reputation and skills rather than their training in, or understanding of, pedagogy. In terms of the specialized area of music instrument teaching at advanced levels, this is typically the norm in the majority of higher education institutions worldwide.

Across the global higher education sector, there is a tradition of high-level music performers being recruited to teach students who are learning an instrument in conservatories or university/college music departments. In addition, music instrument teaching has been underpinned by the “master-apprentice” tradition, with the highly trained music performer assuming the role of expert or “master” and the developing learner the role of “apprentice” (Burwell 2013, 2015; Long, Creech, Gaunt, & Hallam, 2014; McPhail, 2010; Rakena, Airini, & Brown, 2015). The master-apprentice relationship has in fact a long history and influence in the western art music field. This framework for learning has underpinned the training of musicians for centuries, from beginner through to advanced stages, not only in music performance (Burwell, 2015; Daniel, 2006; Duffy, 2013; Nielsen, 1999; Thorgersen, 2014; Vieira, Fabbri, Travieso, Oliveira, & Costa, 2013), but also in composition (Vieira et al., 2013) and postgraduate research (Harrison, 2012; Harrison & Grant 2015). The master-apprentice relationship dominates the one-to-one or studio lesson in music, which remains the most common format by which students learn an instrument and regardless of level (Burwell, 2015; Carey & Grant, 2014, 2015; Daniel 2006, Gaunt & Westerlund, 2013;

Nielsen, 1999). The one-to-one or studio lesson is, however, an elusive area of music education, given that it occurs behind closed doors and with minimal public or educational scrutiny (Carey & Grant 2014; Carey, Lebler & Gall, 2012; Collens & Creech, 2013; Gaunt, 2011; Gaunt & Westerlund, 2013; McPhail, 2010; Persson, 1996; Wexler, 2009).

While the one-to-one lesson and the master-apprentice relationship that underpins it continue to dominate the music instrument teaching and learning landscape, there are no regulatory or other requirements for the teacher as “master” to formally study the art of pedagogy (Parkes & Wexler, 2012). In fact, Persson (1996), Purser (2005), McPhail (2010) and Watson (2010) all argue that most higher education music instrument teachers have not received any training in pedagogy, with McPhail (2010) describing this cohort as “musicians who happen to teach” (33). Nevertheless, in recent years this situation has started to change. For instance, recruitment practices in some higher education institutions have included the need for prospective teachers to demonstrate – or at least explain – their pedagogical skills and know-how (Abeles, 2011; Hanken 2008), higher education courses often include one or more units in pedagogy for students (Parkes & Daniel, 2013), and communities of pedagogical practice have also been promoted and developed within some institutions for staff working in the studio (Carey & Grant, 2014; Carey, Grant, McWilliam, & Taylor, 2013).

Nevertheless, the music instrument teaching field continues to feature minimal barriers to entry and no regulatory requirements to have studied pedagogy, with most current higher education practitioners being highly trained performers who chose to move into a teaching role (Burwell, 2013; McPhail, 2010; Persson, 1996). Hence, those that progress through to teaching music instruments at the tertiary (university) level are likely to be influenced by previous teachers and learning

experiences, thereby perpetuating the master-apprentice cycle, a view which continues to be referenced in recent literature (Carey & Grant, 2014; Harrison & Grant, 2015; Juntunen, 2014; Parkes & Daniel, 2013).

Literature Review

The one-to-one lesson has, in recent years, attracted significant research attention and focus (Burwell, 2015; Carey & Grant, 2015; Carey et al., 2012; Gaunt, 2011; Perkins, 2013). This has, to some extent, been due to its elusive nature, the difficulties in evidencing the specific educational outcomes that occur within this format for learning, as well as the growing need to justify its very high cost to the institution in an increasingly pressured funding environment (Carey et al., 2013; Carey & Grant 2015; Grant, 2013). More specifically, Carey and colleagues (2013) describe how “the case for arguing the quality of pedagogical practices in the conservatoire [can] no longer rely on the untested but widely held assumption that greater performer – the “maestro performer” – would be *ipso facto* “the maestro teacher” (149). In recent years there have been numerous studies that analyze the interactions that occur within the studio lesson, be this through video analysis, observation, surveys, or interviews (for example Burwell, 2015; Daniel, 2006; Henninger, Flowers, & Councill, 2006; Juntunen, 2014; McPhail, 2010; Nielsen, 1999, 2006). There is, however, a lack of research that specifically explores the views of current higher education music instrument teachers in terms of what they describe as the key influences that reinforce their work in the studio.

The notion of the master-apprentice relationship playing a key role in the studio setting in music has been acknowledged and considered by a number of authors in recent years. For example, in exploring practices at one music conservatoire in Scandinavia, Nielsen (1999) engaged in an in-depth theorization and analysis of apprenticeship on the basis of Lave and Wenger’s (1991) theory of situated learning and the community of practice that is common to these types of institutions. In foregrounding his research, Nielsen (1999) refers to the tradition in music where current teachers have learned from previous great teachers, describing how the master serves “as a role model ... [and] as a source of identification” (105), with students typically engaging in imitation of the master’s demonstrations or actions. Similarly to Nielsen (1999), Burwell (2013, 2015) and Johansson (2012, 2013) refer to demonstration and imitation as being frequent in the studio and a key influence on how teaching and learning take place. On the other hand however, Burwell (2015) describes how the master-apprentice relationship “gives rise to a paradox: that the development of critical or evaluative thinking would

seem to conflict with the trust and authority essential to success” (10-11). McPhail (2010), Johansson (2013), Thorgersen (2014) and Long and colleagues (2014) agree, the latter describing how critics of the master-apprentice learning model “argue that independent learning, interaction, and creativity are stifled” (176).

The master-apprentice relationship is not unique to music, given it has a history and application in such diverse areas of practice including design (Bender & Vredevoogd, 2006; Ghassan, Diels, & Barrett, 2014), creative writing (House, 2015), crafts (Calvert, 2014), cuisine (Stierand, 2014), sciences (Dysthe, 2002; Lam & De Campos, 2014), visual arts (Simonton, 1984), higher degree research supervision (Frankland, 1999), medicine (de Vries et al., 2015; Van Bodegom, Hafkamp, & Westendorp, 2013,) and tailoring (Lave, 1982). The master-apprentice tradition and process is also cyclical, for example Lave (1982) refers to how in the field of tailoring the apprentice “moves from the status of novice to that of master tailor” (182). Recent literature, however, demonstrates that the master-apprentice model of learning is being placed under increasing scrutiny (Allsup, 2015; Rakena et al., 2015), given students learning in this system typically have “little control over the content, pace and direction of learning” (Harrison & Grant 2015, 558). Harrison and Grant (2015) go on to argue that, given the increasingly diverse student body undertaking higher degrees by research for example, there is a need to “break down the hierarchical master-apprentice model” (563) and in fact consider horizontal approaches to learning.

In terms of when students who are learning to become advanced music performers move into teaching, the literature demonstrates that many commence while studying or shortly after they finish (Burwell, 2015; Mills, 2004). Others are invited to start teaching by peers or by institutions seeking to recruit high-level performers (Haddon, 2009; Parkes & Daniel 2013; Wexler, 2009). In three recent studies that canvassed tertiary level music students’ views on their future, each demonstrates that many students view teaching as being a definitive part of their career (Fredrickson, 2007; Rickels et al., 2010; Welch, Purves, Hargreaves, & Marshall, 2010). In another study, Parkes and Daniel (2013) found that of 171 current higher education music instrument teachers sampled at the time, not all were in fact planning on commencing a teaching career, with the majority focused on being performers during their studies at the higher education level. Of the 171 teachers in their study, Parkes and Daniel (2013) found that previous teachers were a major motivational influence for those deciding to work in the studio, although in the study Parkes and Daniel did not explore current influences for this group of teachers.

In general, there is consensus in the literature that as generations of apprentices move into teaching, they rely on previous experiences to inform their

pedagogical strategies (Burwell, 2015; Carey & Grant, 2014; Gaunt, 2008; Slawsky, 2011). Georgii-Hemming, Burnard, and Holgersen (2013) also describe how music instrument teachers are influenced by their know-how as performers and musicians rather than specific skills in pedagogy. Johansson (2013) agrees, describing how “musicians who go through the master-apprentice system of one-to-one tuition and continue as performers/teachers rely on their role models, on their experience and ability for developing a pedagogical practice” (58). More explicitly, Juntunen (2014) argues that music instrument teachers “tend to teach as they were taught” (158). In addition, for those that are recruited to teach in higher education, Burwell (2015) refers to how the isolated nature of the one-to-one studio means there is limited opportunity for those in the role to “identify and share good practice” (12-13), hence they rely on previous and current experiences to guide what they do in the studio.

While there are recent moves to place a stronger emphasis on the importance of research and evidence-based practice in higher education music instrument teaching (Carey & Grant, 2015), the history and traditions that underpin the master-apprentice learning relationship result in a current point of tension within the sector. Zhukov (2012) is of the view that there is an “unwillingness to embrace effective 21st-century teaching strategies” (467), which Duffy (2013) explains as a general resistance to change and which Perkins (2013) argues stems from the traditions, hierarchies, and power structures that are common to conservatories in particular. In addition, in the area of K-12 music teaching in schools, the literature (Nichols, 2013) points strongly to the fact that teachers should not in fact teach how they were taught, but rather ensure they are up to date with the latest pedagogical methods and technological developments. Hence, Johansson (2012, 2013) continues to argue the need for ongoing research to better understand the complex nature of the one-to-one relationship and master-apprentice tradition in music, reflecting an earlier view by Nielsen (1999) who described “the general neglect of issues of apprenticeship learning in educational psychology” (232). Carey and Grant (2014) agree, arguing that despite progress in the sector, there remains a need to explore “better systems of professional training and development for instrumental and vocal teachers” (43).

Method

The literature continues to evidence the fact that many current music instrument teachers in higher education have no formal training in pedagogy and that the studio lesson remains strongly influenced by the master-apprentice tradition. The authors therefore set out to explore music instrument teaching in higher

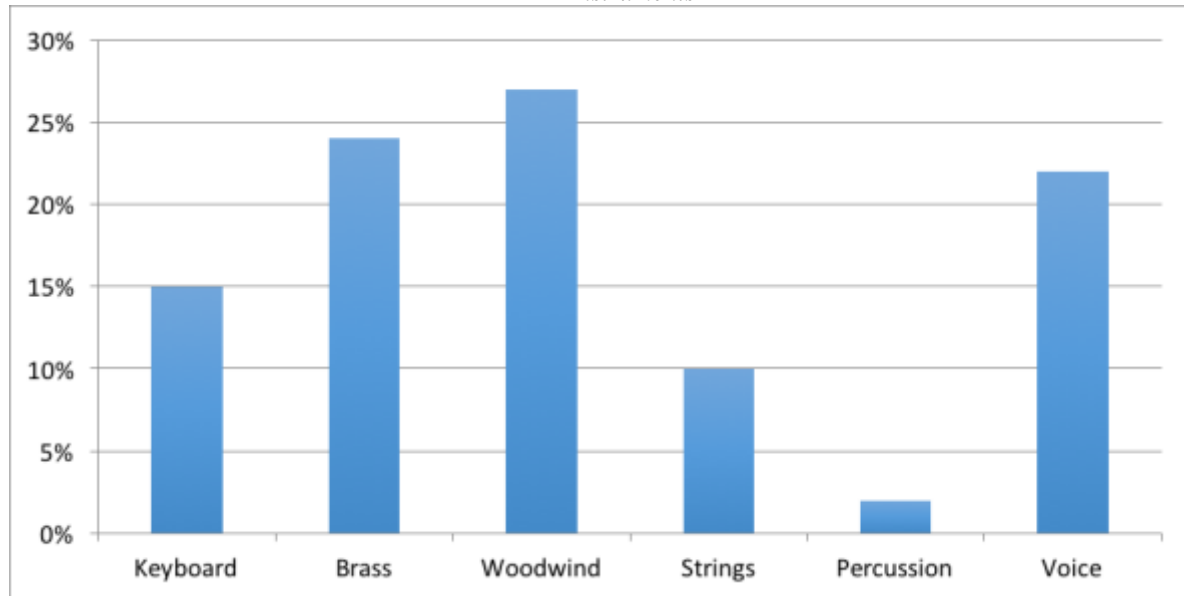
education further, and in order to do so and reach a wide population we devised a survey that would enable a response to the following two research questions:

1. Against the backdrop of the master-apprentice tradition, to what extent is there direct evidence that music instrument teachers in higher education do in fact teach the way they were taught?
2. In describing the key influences on how they teach, to what extent are there any noticeable differences between those with formal training in pedagogy and those without?

The survey was constructed in two parts: the first containing items about teaching, and the second part asking demographic questions. This study reports specifically on the analyses and findings of a subset of survey items (please see Appendix) designed to enable a response to the above two research questions. After being granted ethics approval in June 2014, the authors constructed a list of email addresses of studio music instrument teachers teaching at major music performance institutions. These institutions were listed as nationally well-known for their music performance degrees and teachers. This list of email addresses was drawn from four main regions: USA, Australia, New Zealand, and Southeast Asia.

The initial list for the USA included 2493 teachers, so a randomized stratified list was generated by assigning all cases a random number. The entire list was ordered first alphabetically by stratum (school name), then by random number assigned to the cases, smallest to largest. This put them in random order within an alphabetized school/institution list. We wanted 10% represented from each school, so 10% were pulled from each stratum. A new randomized list of 250 was used to contact studio music instrument teachers in the USA. We included all teachers on the lists for Australia (n=180), New Zealand, (n=46), Thailand, (n=42) and Korea (n=20). This allowed us to directly contact 538 teachers. Eighty-three teachers responded to the survey, and 54 actually completed all questions, giving us a response rate of 10%. This rate was an improvement on our previously reported rates of 6.4% (Daniel & Parkes, 2015; Parkes & Daniel, 2013; Parkes et al, 2015), with this population of respondents who are notably difficult to engage in research studies. Of the fifty-four responses, the most responses came from Australia (n=25, 46%) and the USA (n=22, 41%). Thailand had four responses (8%), New Zealand had two (4%), and Korea had one respondent (2%). This mirrors the numbers of individuals solicited from these five areas, and while our findings are not generalizable—especially for the Thailand, New Zealand and Korean areas—we can have some confidence in the trends seen across this sample. Given the differences in sample sizes between the countries and

Figure 1
Instruments



our research questions, we did not analyze the data to examine between-country differences.

Throughout the latter half of 2014 we reminded and encouraged teachers on six occasions to complete our survey over a six-month period, and we undertook analyses early in 2015. The data relevant to this study were divided into quantitative or qualitative findings. The quantitative data provided demographic and descriptive rankings of issues pertinent to music instrument teachers in higher education which are presented as descriptive data with mean scores and percentages. The qualitative data (open-ended responses to our items) were analyzed first with a basic content analysis (Patton, 2002) and then a further analysis of phenomenological reduction. This can also be described as horizontalizing, a process that requires giving each statement equal value. We developed a list of non-overlapping and non-recurring statements, which have been called horizons by Moustakas (1994). From the horizons, we developed themes which were formed from the data. The themes developed from working independently and together as co-authors; we labeled themes separately in word documents as lists, then we met to discuss and refine the themes as they emerged from the lists. The essential layers emerged (Moustakas, 1994) as theme categories, and from there we also completed some basic frequency counts to determine how many teachers expressed a statement in each theme. To establish trustworthiness, we debriefed at regular intervals to discuss the themes and how we were categorizing them to be sure we were in agreement of the intention of the participants' words.

Findings

We asked several demographic questions of the participants, which illustrate their instrument, type of institution, level of education, and teaching load. Figure 1 illustrates the types of musical instrument they teach.

The respondents were mixed in terms of the types of institutions they worked within: public university music departments ($n=22$, 41%), conservatoriums ($n=21$, 39%), private university music departments ($n=5$, 9%), private music schools ($n=3$, 6%), and other types such as conservatoriums within public universities or music colleges ($n=3$, 6%). The respondents reported that their studio teaching took an average of 39% of their work week, with administration an additional 16% of their time. Other teaching (ensembles, classes) used 15% of their remaining time, as did personal practice (15%); performing (13%) took up least time in their schedules, but this may not have reflected rehearsal time outside of personal practice. Respondents reported how many hours they spent teaching and nine percent ($n=5$) reported a heavy load of 21-30 hours a week. Forty-six percent ($n=25$) reported 11-20 hours each week, and forty-four percent ($n=24$) spent 1-10 hours teaching. Over half of the respondents had more than 10 years teaching experience teaching at the tertiary level in the studio, as illustrated in Figure 2.

We asked them about their level of education, and Figures 3 and 4 reveal that just over half had a degree in

Figure 2
Years Experience

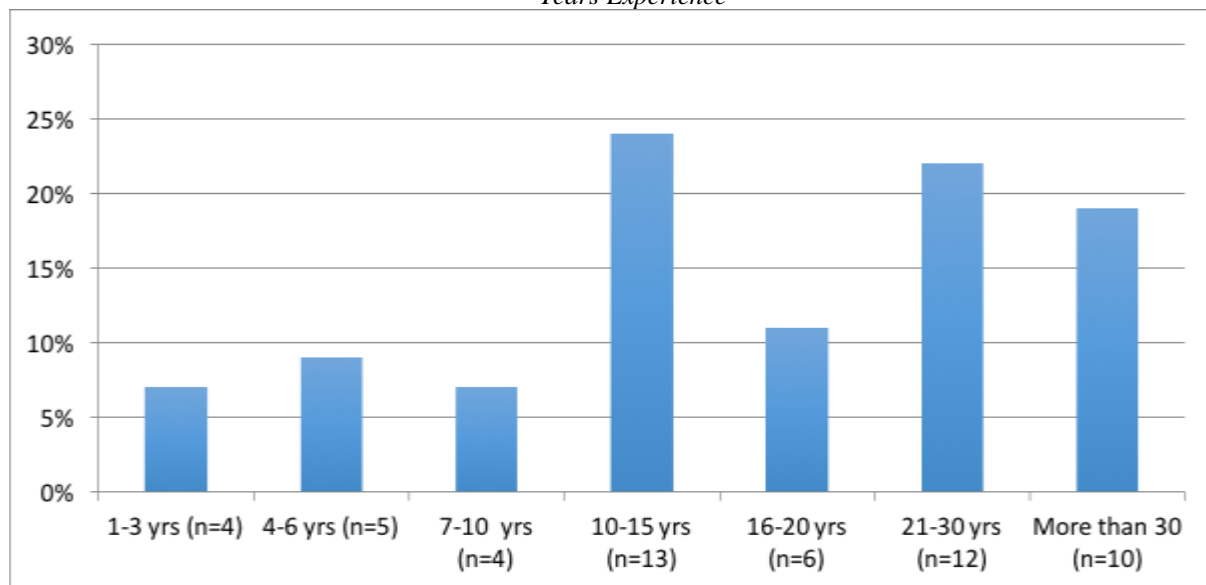
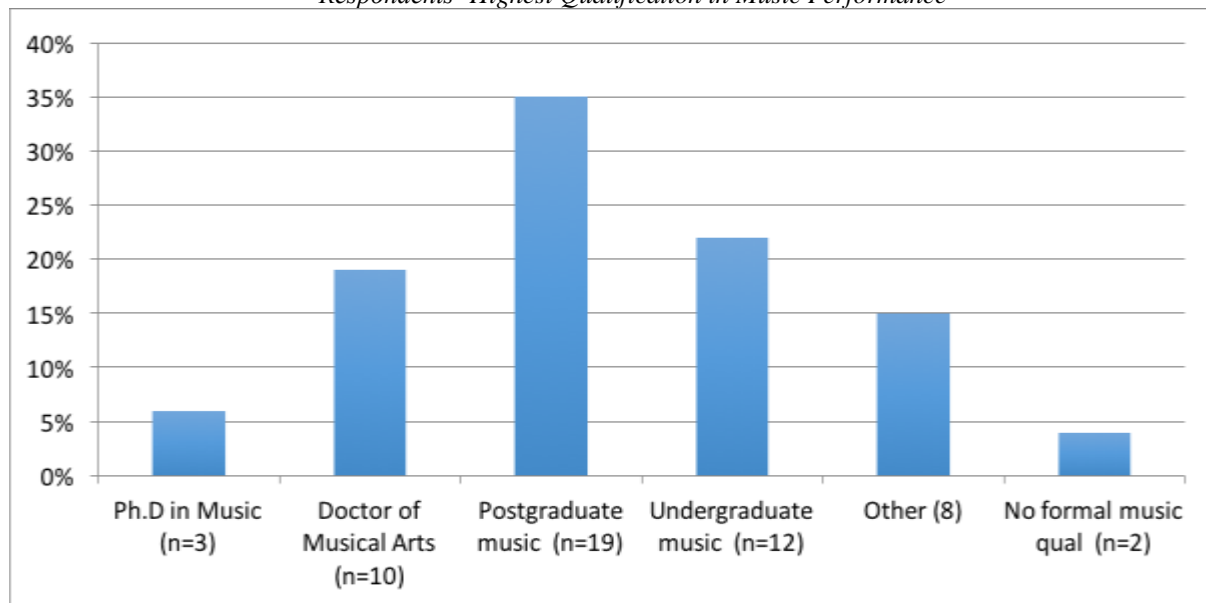


Figure 3
Respondents' Highest Qualification in Music Performance



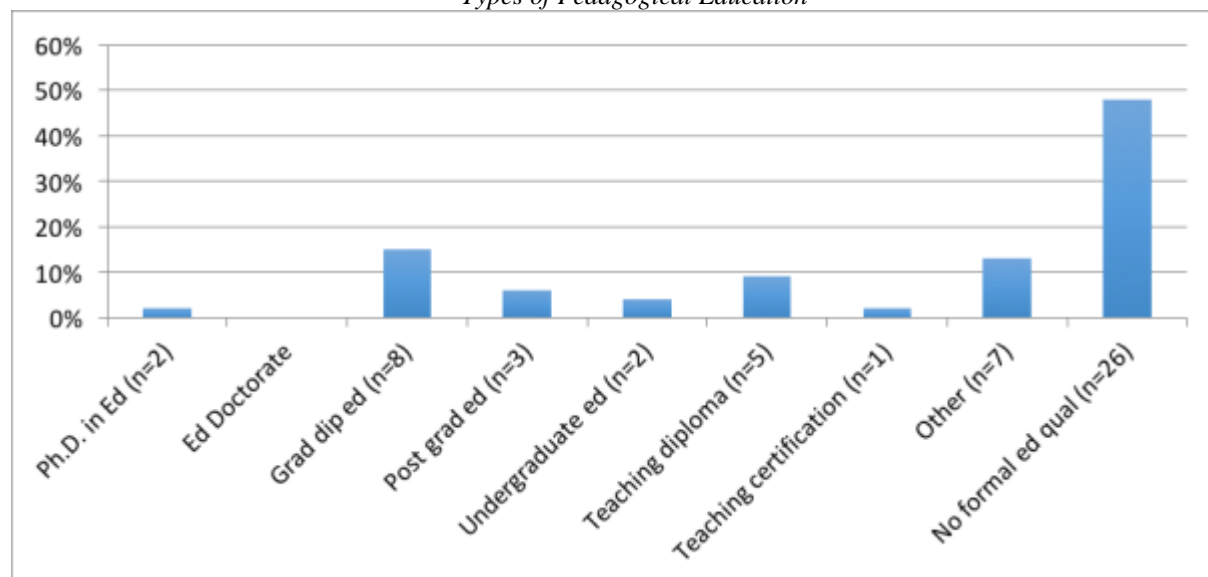
performance only (n=28), while 26 had additional education in pedagogy. Figure 3 overviews the respondents' highest qualification in music performance.

The types of degrees listed for "other" included PhD in music (not performance) and European labels for post-graduate degrees in music (for example, Hochschule work and Statsdiplom), along with institution-specific language for a music degree. There

were only two individuals without formal music performance qualifications. Figure 4 below then overviews the highest level of training the respondents received in the area of pedagogy.

As illustrated in Figure 4, twenty-eight respondents (52%) had specific pedagogical training. The types of "other" pedagogical training or education that the respondents (n=7) reported were mixed. Some reported

Figure 4
Types of Pedagogical Education



coursework at the undergraduate level or in learning about musician injuries. Conferences and workshops were also listed as “experiences” where respondents learned how to teach. Courses about education taken as part of doctoral music performance degrees were reported as were experiences such as teaching junior students as a teaching assistant. While the seven (13%) who cited “other” reported mostly informal forms of pedagogical education, 39% of respondents indicated they had formal training through degrees or other forms of certification. The data also clearly show that forty-eight percent (n=26) of the respondents had no formal training in pedagogy.

To specifically answer the first research question, “To what extent is there direct evidence that music instrument teachers in higher education do in fact teach the way they were taught?” we analyzed data from two key survey questions. The first required respondents to rate a series of potential influences on their teaching using a scale. As part of the analysis we examined differences between teachers with pedagogical training and those without; we therefore report the data as a whole and for the two groups. Following an analysis of this quantitative data, we then analyzed the qualitative data provided by the respondents when asked to give a written explanation further unpacking the key influences on their teaching approach within the studio. These data were coded and are presented by themes.

The quantitative data (Table 1) reveals respondents’ rankings of influences on their current teaching, using a rating scale of 1 as the strongest

influence to 10 as the least influence. The data is presented in terms of the overall mean, as well as for those with and without pedagogical training.

In terms of those respondents that provided additional “other” influences, these were:

- Reading journal and books on teaching and performance issues (self-education)
 - New research into applied research in learning and teaching historically informed performance “guided exploratory learning” even in studio model. Studio teacher as research supervisor even at UG level rather than old apprentice model.
 - Experience gained as a performer*
 - Learning from and observing great teachers in other fields*
 - My years as a professional performer*
- *These respondents had no formal training in pedagogy.

Table 1 reveals that the most important influence was, “My years as a student – previous teachers who I wanted to emulate”; of second importance was, “Learning on the job by doing it”; and of third importance was, “My years as a student – one particular teacher that I have modeled my teaching after.” Therefore, there is clear evidence that former teachers have a major influence on the ways in which current practitioners work in the studio. In addition, there were no major differences between the two groups in terms of how they rated the various influences, although those

Table 1
Influences on Teaching

Influences	Min value	Max value	Variance	SD	Overall M n=54	M (Ped training) n=28	M (no ped training) n=26
My years as a student – previous teachers who I wanted to emulate	1	8	3.12	1.77	2.46	1.92	2.42
My years as a student – one particular teacher that I have modeled my teaching after	1	8	4.23	2.06	3.19	3.07	2.69
My years as a student – bad teaching experiences that I now strive to avoid in my own style	1	8	3.78	1.95	4.91	5.03	5.27
Education – specific classes or training in pedagogy	1	8	3.42	1.85	5.11	4.55	5.58
Learning on the job by doing it	1	7	2.79	1.67	3.04	3.16	3.00
Professional development – specific conferences or classes/workshops	2	8	2.37	1.54	5.17	5.17	5.35
Observing colleagues teaching	2	7	2.26	1.50	4.76	5.25	4.62
Other (please describe)	1	8	3.18	1.78	7.37	7.64	7.08

Note: all 54 participants ranked all influences.

*Weighted means for each category of pedagogy training were calculated and averaged for Pedagogical Training mean

Table 2
Influences on Teachers with Pedagogical Training Separated by Level of Pedagogical Training

Influences	Ph.D n=2	Grad Dip n=8	Post Grad n=3	Undergrad n=2	Diploma n=5	Teaching Method n=1	Other n=7
My years as a student – previous teachers who I wanted to emulate	3.50	1.75	2.33	2.00	2.00	1.00	2.43
My years as a student – one particular teacher that I have modeled my teaching after	5.00	4.00	3.00	2.00	2.00	2.00	2.71
My years as a student – bad teaching experiences that I now strive to avoid in my own style	3.50	5.13	4.33	5.00	5.00	6.00	5.57
Education – specific classes or training in pedagogy	3.00	4.00	4.67	4.50	4.50	8.00	5.14
Learning on the job by doing it	6.00	3.38	3.00	2.50	2.50	3.00	2.86
Professional development – specific conferences or classes/workshops	4.50	4.50	5.67	6.00	6.00	7.00	4.86
Observing colleagues teaching	6.50	5.25	5.00	6.00	6.00	4.00	4.43
Other (please describe)	4.50	8.00	8.00	8.00	8.00	5.00	8.00

with pedagogy training did rate “education” more highly than those without training. In order to further explore if there were any major differences amongst those with pedagogical training, Table 2 shows the results for the 28 respondents separated by degree or level of certification.

An interesting finding from the analysis in Table 2 is that the two individuals with PhD’s actually cite their pedagogy training as the main influence. While acknowledging that this reflects the view of only two participants, these individuals also have the smallest

range of ratings (3-6.5), potentially suggesting that they see a more balanced set of influences on their approach.

The open-ended question we analyzed required the respondents to describe to whom or what they attribute the main influences on their current approach to teaching. In many cases respondents' explanations covered more than one theme. Each statement was therefore coded accordingly. After we coded and decided on themes, we grouped them respectively into those who had pedagogical training and those who did not. Results are presented in Table 3.

As expected, the qualitative data in Table 3 show there is a strong influence of previous teachers and experiences of teaching among the cohort. For example, when explaining the main influence(s) on their current approach in the studio, respondents were often explicit in references to former pedagogues, e.g., "my previous singing teacher who studied this with her German-trained teacher," or, "those magnificent Maestros I had in music and life", or "learned it from many master teachers." Notable, however, is that only those with pedagogical training included details about how this had an impact on their approach, with statements such as "research about teaching methods," "study in psychology, including psychology of expertise acquisition," or "new leading edge research in learning and teaching." Experience in teaching and/or performing was also cited by many respondents as a current influence and regardless of level of training, with references to "many years of teaching and performing," a "25 year period of private teaching," or "my own experiences preparing for performances." Finally, some respondents specifically referred to their own personality or attributes as being a key influence on their teaching, for example "my personality," or "thought of it myself," or "my passion for music in general."

Discussion

It should initially be acknowledged that the sample of respondents involved is relatively small, and the Southeast Asian region participation was very limited. We are not claiming that our population represents all teachers in this setting. However, given the fact that the data comes from 54 current music instrument teachers in higher education from several countries, there is an opportunity to present a response to the two main research questions. In terms of RQ1—"Against the backdrop of the master-apprentice tradition, to what extent is there direct evidence that music instrument teachers in higher education do in fact teach the way they were taught?"—both the quantitative and qualitative data clearly evidence the influence of previous teachers and teaching experiences on the way in which practitioners currently work in the studio. Regardless of whether the respondents had training in pedagogy or not, previous teachers and/or one teacher in particular were ranked as two out of the three

strongest influences on how they currently teach. The other highest ranked influence was 'on the job' experience and the development of a practice through the nature of the work itself. Therefore, this study points clearly to the fact that the master-apprentice cycle remains a key element of the music instrument teaching landscape at the tertiary level, as does learning to teach through experience in the role. Not only are we able to see that teachers most likely teach in a way that is similar to how they were taught, but also we are able to determine that they recognize their former teachers influenced their work in the studio significantly.

In terms of RQ2—"In describing the key influences on how they teach, to what extent are there any noticeable differences between those with formal training in pedagogy and those without?"—there was a noticeable difference in that only the individuals with training in pedagogy specifically referenced this education as a current influence on how they work in the studio. That is, those without pedagogical training focused only on previous teachers, teaching experiences, learning on the job or their own style/approach when explaining why they teach the way that they do. While those with training in pedagogy continued to reference these same themes, it is clear that having pedagogical qualifications does in fact play a role in how some participants practice in the studio. In fact, a very tentative finding is that the more intensive the study in education, the more influential that study is, given that the two participants with a PhD in Education were the only ones to rank their pedagogy study as more important than previous teachers/teaching.

Hence, the findings of this study first point to the fact that the master-apprentice tradition continues to dominate higher education music instrument teaching. Second, the findings of this study continue to demonstrate that many current music instrument teachers have no formal training in pedagogy. Third, the data evidence the fact that, regardless of whether participants have or have not had formal training in pedagogy, former teachers, experiences of teaching, and learning on the job are major influences on current practice. In addition, when asked to explain in words the major influences on their current approach, it was only participants with pedagogical training that in fact cited this study as being a current influence. This research therefore extends previous literature in which claims were made about the influence of the master-apprentice cycle, albeit without direct evidence from teachers themselves to support this claim (e.g. Burwell, 2015; Juntunen, 2011; McPhail, 2010). That is, this study—as far as we know—is the first of its kind that explicitly evidences both the cyclical nature of the master-apprentice tradition and the fact that many currently teach without any training in pedagogy.

Table 3
Analysis of Influences on Teaching

Key factors of influence on current approach to teaching	Pedagogical training (n = 28)	No pedagogical training (n = 26)
Former teachers and experiences of teaching	14	18
Pedagogy (training, research, inquiry)	7	-
Experience (teaching, performing)	14	9
Self (personality)	5	4
Other*		1
Not codable	2	1
Total codable comments	42	33

*This person stated "This is exactly the way my father, who was a high school wrestling coach, instructed his athletes."

The findings of this study therefore reveal the ongoing dominance of the master-apprentice tradition despite recent literature highlighting the fact that students have little opportunity to direct their learning in this setting (Allsup, 2015; Harrison & Grant, 2015; Rakena et al., 2015) and that it tends to rely in demonstration and imitation which has the potential to stifle creativity and the development of independent thinking (Johansson, 2013; Long et al., 2014; Thorgersen, 2014). This key finding also supports recent literature which proposes that there is a general resistance to change by those in the profession (e.g. Duffy, 2013; Perkins, 2013; Zhukov, 2012), while it also further challenges the assumption held by many in the sector that great performers are automatically great teachers (Carey et al., 2013). The findings of this study in fact suggest that the music instrument teaching sector in higher education is potentially not up to date with best practice approaches in modern pedagogy. That is, in the context of recent music education literature relevant to the K-12 music education sector, where it is in fact seen to be a problematic to teach how one was taught (Nichols, 2013), the findings of this study suggest that the music instrument sector is facing major challenges in moving towards an evidence-based mode of pedagogy informed by best practice and contemporary educational psychology or methods of learning. The findings of this study may also be useful to guide new research and reflection in other disciplines that use the master-apprentice model, such as those mentioned earlier in the paper: design (Bender & Vredevoogd, 2006; Ghassan et al., 2014), creative writing (House, 2015), crafts (Calvert, 2014), cuisine (Stierand, 2014), sciences (Dysthe, 2002; Lam & De Campos, 2014), visual arts (Simonton, 1984), higher degree research supervision (Frankland, 1999), medicine (de Vries et al., 2015; Van Bodegom et al., 2013), and tailoring (Lave, 1982). This study therefore reiterates the importance of recent calls in the literature for further research scrutiny (Johansson 2012, 2013), as

well as better systems of training and professional development for those especially in the music performance sector (Carey & Grant, 2014).

Conclusions

The master-apprentice tradition is likely to continue to be found in the field of music instrument teaching as well as in others areas of practice, given it has been adopted for centuries as a means by which to pass on learning and knowledge. While it represents a strong tradition and a link to previous teachers, who were in turn also taught by their previous teachers, it is arguably the beholding to this tradition that represents the biggest challenge for the sector in moving towards best practice models of learning. While there is certainly no guarantee that a qualification in pedagogy will result in effective learning and teaching, there is also no evidence to date that proves the master-apprentice tradition guarantees the best possible learning either. In fact, for decades it has been the case that only formally trained and accredited teachers are permitted to walk into a K-12 music classroom. Why is it still the case that the one-to-one studio exists as its own island devoid of regulation and scrutiny? As we continue to move into an era of accountability and the need for evidence-based models of best practice, leaders of higher music institutions will therefore be faced with critical questions. For example, for how long will it be acceptable to continue to employ high-level music performers without training in pedagogy? Given the isolated nature of the studio and potential for limited development of student independence and/or creativity in the master-apprentice model, what steps should be taken to place a stronger emphasis on scrutiny of practice or communities of shared learning? While there appears to be some progress across the sector in terms of moving this area of practice forward, this study would suggest that there is a great deal of further research and attention needed in order to create

better outcomes and opportunities for those involved in this important area of education.

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Appendix

Survey items:

Q5 Please rank the following experiences in terms of their influence on your current applied teaching approach (methods, style). Drag each statement to the rank, 1 = Top ranking; 8 = lowest ranking)

- _____ My years as a student – previous teachers who I wanted to emulate
- _____ My years as a student – one particular teacher that I have modeled my teaching after
- _____ My years as a student – bad teaching experiences that I now strive to avoid in my own style
- _____ Education – specific classes or training in pedagogy
- _____ Learning on the job by doing it
- _____ Professional development – specific conferences or classes/workshops
- _____ Observing colleagues teaching
- _____ Other (please describe)

Q12 Section 2: Background and demographic information. Please be assured your responses are anonymous. Please indicate the main instrument you currently teach (regardless of genre- e.g. jazz, baroque) in the applied studio in higher education.

- ☐ Keyboard (includes harpsichord etc.)
- ☐ Brass
- ☐ Woodwind
- ☐ Strings (includes harp, electric guitar/bass etc.)
- ☐ Percussion (includes jazz drum-set, kit etc.)
- ☐ Other (please list) _____

Q13 Please describe the type of higher education institution you work in

- ☐ Conservatorium
- ☐ Public university music department
- ☐ Private university music department
- ☐ Private music school
- ☐ Other (please list) _____

Q14 At how many higher education institutions are you currently employed?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ More than 4

Q15 During an average working week in your higher education (when students are attending classes), what percentage of your time is devoted to each of the following activities ? (Note that these together must total 100% so please use 0 if there is nothing in one activity area)

- _____ Teaching in the applied studio in higher education
- _____ Other teaching (e.g. ensembles, master-classes, theory)
- _____ Administration
- _____ Performing
- _____ Personal practice or rehearsals

Q16 Please choose how many hours a week – on average - you teach in the applied studio setting in higher education

- ☐ 1-10
- ☐ 11-20
- ☐ 21-30
- ☐ 31-40
- ☐ More than forty

Q19 Which one of the following best describes your main current applied teaching position in higher education?

- ☐ Full time tenured professor
- ☐ Part-time lecturer
- ☐ Adjunct position
- ☐ Casual / sessional staff
- ☐ Visiting
- ☐ Other (please describe) _____

Q20 How many years have you been teaching in your current position?

- ☐ 1-3
- ☐ 4-6
- ☐ 7-10
- ☐ 10-15
- ☐ 16-20
- ☐ 21-30
- ☐ More than 30

Q21 How many years in total have you been teaching in higher education?

- ☐ 1-3
- ☐ 4-6
- ☐ 7-10
- ☐ 10-15
- ☐ 16-20
- ☐ 21-30
- ☐ More than 30

Q22 What is your highest formal qualification in music performance?

- ☐ PhD in Music Performance
- ☐ Doctor of Musical Arts
- ☐ Postgraduate degree in Music (e.g. Master of Music, Professional Diploma in Performance)
- ☐ Undergraduate degree in Music (e.g. Bachelor of Music)
- ☐ Other (please describe) _____
- ☐ No formal qualification in music performance

Q23 What is your highest formal qualification in education (pedagogy or teaching)?

- ☐ PhD in Education
- ☐ Education Doctorate Degree (e.g. Ed.D)
- ☐ Graduate diploma (e.g., Graduate Diploma of Education)
- ☐ Postgraduate education degree, (e.g., Master of Education)
- ☐ Undergraduate education degree, (e.g., Bachelor of Education)
- ☐ Teaching diploma or certificate (e.g., Trinity, Royal Schools, AMEB)
- ☐ Teaching method certification (e.g., Dalcroze, Kodaly, Orff, Suzuki)
- ☐ Other (please describe) _____
- ☐ No formal qualification in education (pedagogy or teaching)

Strategies for Increasing Response Rates for Online End-of-Course Evaluations

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Student Evaluations of Teaching (SETs) are used by nearly all public and private universities as one means to evaluate teaching effectiveness. A majority of these universities have transitioned from the traditional paper-based evaluations to online evaluations, resulting in a decline in overall response rates. This has led to scepticism about the validity and reliability of the SETs. In this study, a large, US public university transitioned to online SETs in 2007 and suffered a decline in overall response rates from 73% for the paper-based evaluations in 2006 to a low of 43%. The aim of this study was to determine successful strategies used by instructors to improve their own SET response rates. A survey was conducted of faculty members who had high response rates, and the data were analyzed to determine which strategies were being employed. The study found that when instructors show students they care about evaluations, response rates tend to be higher. The results from the study have been turned into a FAQ on myths and suggestions that has been distributed to the faculty at the university to provide guidelines for increasing response rates on SETs.

Universities are facing increasing pressure to assess educational outcomes. In this climate, one concrete way to assess teaching effectiveness is through end of course evaluations. Although several studies have shown student evaluations to be reliable and somewhat valid, end of course evaluations are not without their problems (Aleamoni, 1999; Centra, 2003; Hobson & Talbot, 2001). Individual faculty members are often concerned with the validity, reliability, and usefulness of the SETs in assessing their individual teaching effectiveness. Owing to small sample sizes, the data obtained from these evaluations can lack statistical significance, and results can be biased. Especially when response rates are low, instructors are concerned that only dissatisfied or less successful students respond to SETs. Research refutes this common myth, as more successful and engaged students tend to complete online evaluations (Adams & Umbach, 2012). Obtaining a high response rate can help alleviate some of these concerns. Since the majority of institutions use SETs to inform decisions about faculty salaries as well as reappointment, promotion, and tenure, ensuring statistically significant data through high response rates is a goal shared by administrators and faculty alike (Education Advisory Board, 2009; Haskell, 1997). For example, one study showed that instructors with class sizes under 10 should have at least a 75% response rate under liberal (10% sampling error) conditions to create reliable feedback and 100% under stringent (3% sampling error) conditions (Nulty, 2008), while others refute this notion, noting that response rates under 100% are not satisfactory as they may not be generalizable to the entire class, especially for small class sizes (Kulik, 2009). Despite the importance of obtaining a high SET response rate, research on best practices in increasing evaluation response rates is relatively scarce (Misra,

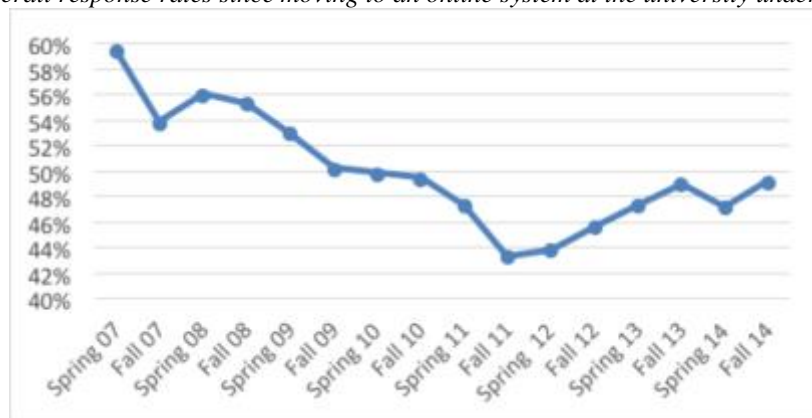
Stokols, & Marino, 2013), and there have been calls by researchers for more study on strategies for increasing response rates (Adams & Umbach, 2012; Goodman, Anson, & Belcheir, 2015).

According to the University Planning and Analysis (UPA) and the Evaluation of Teaching Committee (EOTC) at the university under study, response rates for end-of-course evaluations have been gradually declining since the instrument began being administered online. The EOTC was considering recommending changes to the current “no-incentives” policy by allowing incentives for students who complete SETs as a potential way to boost response rates. The EOTC knew different strategies were being used by instructors to help increase response rates, but it was not known which strategies were being employed, which strategies worked, and which strategies aligned with current university policy. Misra et al. (2013) found, “Developing effective strategies for increasing response rates can help reduce nonresponse biases in survey data and improve the quality of research findings” (89). The purpose of this study was to determine which strategies were being used by faculty members to effectively increase SET response rates.

Review of the Literature

SETs are often the primary assessment of teaching performance in institutions of higher education in the U.S. (Pounder, 2007), but as with all types of evaluation, they are inherently political (Russ-Eft & Preskill, 2009). Student evaluation of teaching in higher education was initially intended to help instructors improve their teaching and/or student learning. It was only later that the results were commonly used for promotion and tenure purposes (Lindahl & Unger, 2010). Marzano (2012) reported that teachers perceived evaluation in one of two ways: for measurement and for development.

Figure 1.
Overall response rates since moving to an online system at the university under study.



Most SETs used in higher education today are for the purposes of measurement and not for development and are typically summative since they are performed at the end of the semester.

Instructors have long argued the problems with SETs, mainly because of their use for promotion and tenure purposes. Critiques abound on the usefulness, validity, and reliability of these traditionally end-of-term instructor evaluations. Lindahl and Unger (2010) claimed that the situation itself leads to atypical behavior: “The structure of the collection process itself, involving a group situation, heightened emotional arousal, and anonymity, encourages deindividuation and may allow the mechanisms of moral disengagement to operate, permitting behavior that students would never engage in face-to-face” (73).

There are additional reasons why end-of-course evaluations at research-intensive universities rarely result in instructional improvement. SETs habitually get distilled down to a single quantitative number whether high or low; they often tell one nothing about how to improve teaching, and often ratings are based on a consumerism model that is focused on entertainment level or difficulty of the course (Wright, 2000). Courses vary widely by discipline, class size, student demographics, and outcomes, but end-of-course evaluations are usually standardized and may not be suitable across institutions (Richardson, 2005). McCullough and Radson (2011) suggested that SETs are often not calculated correctly because they are based on ordinal data but analyzed as interval data. Add to this the issue that students are not trained to rate any one question in the same way. This leads to unreliable and likely invalid results. When the stakes are high, the pressure to make false or misleading statements increases. Studies have shown that students lie on faculty evaluations, especially in cases where the student

has an axe to grind (Clayson, 2008). However, some studies show that the dissatisfied or poorer students are less likely to fill out the SETs (Adams & Umbach, 2012; Avery, Bryant, Mathios, Kang, & Bell, 2006; Fidelman, 2007; Sax, Gilmartin, & Bryant, 2003). Adams and Umbach (2012) found students who have spent time working to get a good grade are more likely to fill out SETs and surmised that students with higher GPAs and course grades have “the intellectual ability to evaluate the course at a meaningful level” (586).

Online SETs and Response Rates

To complicate matters more, most SETs are now administered online. Potential advantages of performing SETs online include standardization across the institution, no loss of class time to perform SETs, reductions in cost due to the absence of printing, distributing, and collecting results (Bothell & Henderson, 2003), getting feedback to instructors more efficiently, and reduction of errors for partially or improperly filled out forms. Online SETs can be argued to have more flexibility in the time and location for completion (Cummings, Ballantyne, & Fowler, 2001), which allows students to write more thoughtful comments online than on paper (Adams & Umbach, 2012; Ballantyne, 2003; Cummings et al., 2001; Hativa, 2013; Kasiar, Schroeder, & Holstad, 2002; Stowell, Addison, & Smith, 2012). In addition to the cost savings, Dommeyer, Baum, Hanna, & Chapman (2004) pointed out that online evaluations may help minimize the faculty influence over in-class SETs (e.g., activities that happen prior to evaluation, presence of the faculty, and peer influence) as well as allow more students to complete them (i.e., if they were absent on the day of the in-class evaluation.) Online administration provides for more anonymity, eliminating potential handwriting recognition of paper-based SETs (Avery et al., 2006).

Multiple studies reported that while response rates for online SETs initially average near 60%, they soon drop off to the 30 to 40 percentile range (Avery et al. 2006; Nulty, 2008; Sax et al., 2003). As seen in Figure 1, this phenomenon occurred at the university under study when it moved to online evaluations in the spring of 2007, reaching a low of 43% in the fall 2011 and spring 2012 semesters. While these levels of response rate may hold some statistical significance in large courses, smaller classes are more problematic as 40% of a class of 20 is only eight responses (see Table 1 for recommended levels for validity.) SETs with low response rates may not be representative of the whole and add to the argument against making instructional changes or personnel decisions based upon such feedback, although one study found that scoring methods were similar for both forms of administration (Fike, Doyle, & Connolly, 2010).

Low response rates for online SETs are partially due to a lack of motivation for filling them out since students are no longer in class. Students do not necessarily benefit from SETs (Bullock, 2003) as they are done at the end of the term, and thus can provide only a snapshot of the instructional process at a point when the current students will not experience instructional improvements. Students perceive that evaluations have no effect on an instructor's teaching effectiveness or performance review. Often they are left with the notion that no one but the individual instructors will see them or that the SET results are not taken seriously (Spencer & Schmelkin, 2002). These perceptions have some validity as research has shown that faculty do not view student evaluations as valuable for improving instruction and report not making changes based SETs (Beran & Rokosh, 2009; Gaillard,

Mitchell, & Kavota, 2006). SETs are fraught with problems, and although only a sampling of the criticisms is presented here, the literature is clear that the low and declining response rates for online SETs present fundamental problems as well as misperceptions (Avery et al., 2006, Dommeyer et al., 2004; Norris & Conn, 2005; Nowell, Gale, & Handley, 2010; Stowell et al., 2012).

Response/Non-response Rates

Low response rates for online SETs are a recognized problem in higher education and have been studied from a variety of perspectives. This problem stems from the concern that low response rates have the potential to create bias if the students filling out the evaluations are not representative of the entire class population. Adams and Umbach (2012) found that that non-response bias may actually double-bias SET results as "not only are students with higher grades typically awarding higher ratings, but they are also the ones who are more likely to respond" (586). They also found that engaged students were more likely to respond to courses in their major, but the more SET requests sent to a student, the more unlikely the student is to respond (i.e., survey fatigue). It is no surprise that in an earlier study some instructors were found to prefer the traditional paper method because of their beliefs that they can achieve higher response rates and a more accurate representation of the population (Dommeyer et al., 2004). But, as mentioned earlier, in-class evaluations are not without their own issues (e.g., potential instructor and/or peer influence, students filling out multiple evaluations, concern of student anonymity, etc.)

Table 1
Suggested Minimum Response Rates Required for Validity of Data (Adapted from Nulty, 2008)

Class Size	Recommended Rates under	Recommended Rates under Stringent
	Liberal Conditions*	Conditions**
10	75%	100%
30	48%	96%
50	35%	93%
70	28%	91%
100	21%	87%
200	12%	77%
300	8%	70%
500	5%	58%

*10% sampling error; 80% confidence level; **3% sampling error; 95% confidence level

Incentives and Increasing Response Rates

Misra, Stokols, and Marino (2011) found that social norm-based appeals for issues such as social cooperation and social responsibility were effective in increasing web-based response rates. A number of researchers have noted that reminding students about the evaluations as well as letting the students know the importance of SETs has helped response rates rise (Dommeyer et al., 2004; Goodman et al., 2015; Johnson 2002; Laubsch 2006; Nulty, 2008; University of British Columbia, 2010). Additionally, researchers have shown that instructors who performed a formative mid-semester evaluation as part of their class gained between 9% and 16% in response rates (Crews & Curtis, 2011; Lewis, 2001b; McGowen & Osgathorpe, 2011; Tucker, Jones, & Straker, 2008). Students respond positively when they feel their comments will make a difference in improving a class. Students then become more engaged in the course as well as better evaluators (Lewis, 2001b). They are more motivated if they feel their voices will be heard and it can begin with simply stating how SETs results are used in the course syllabus (Chen & Hoshower, 2003; Tucker et al., 2008).

Several studies have examined aspects of the use of incentives to increase response rates in online surveys (Crews & Curtis, 2011; Dommeyer et al., 2004; Goodman et al., 2015; McGourty, Scoles, & Thorpe, 2002a, b). Cook, Heath, and Thompson (2000) found that personalized correspondence is linked to higher response rates in electronic surveys. Students are also more likely to reply to surveys they find more relevant. One study found that the best determinant of response rate was issue salience. In other words, the more salient the issue to the respondent, the more likely he or she is to respond (Sheehan & McMillan, 1999). Interestingly, Cook and colleagues (2000) found that the use of incentives was negatively associated with response rates and resulted in more homogeneous responses. Several researchers have discussed the importance of giving positive incentives such as extra credit or bonus points in order to achieve high response rates (Anderson, Cain, & Bird, 2005; Goodman et al., 2015) or making SET completion an assignment for the class (Ravenescroft & Enyeart, 2009). Another study found that entering students into a random drawing for a cash prize upon completing their evaluations worked as an incentive option but was not highly effective (Ballantyne, 2003). Some universities withhold early access to grades unless the evaluations are filled out (Anderson et al., 2005). Clearly, the research on which incentives work to increase response rates in web-based evaluations is mixed (Misra et al., 2011).

Methodology

Because of poor response rates for SETs (see Figure 1), the EOTC at the university under study wanted to know what could be done to improve them. This study was designed to determine the following:

What strategies are instructors using to successfully improve response rates in SETs?

How do these strategies compare to the university policy?

What strategies should be recommended for use throughout the university?

The university under study is a large (over 33,000 students) research intensive institution located in the United States. SET process and procedure is governed by policy and administered by a centralized division reporting to the university's Provost. Prior to spring of 2007, when they began to be administered online, SETs were administered in a face-to-face format. Since that time, response rates have steadily declined.

The University's SET is administered online through a proprietary system and includes 12 Likert scale questions and three open-ended questions to allow for comments. Deans, department heads, and instructors may add a limited number of their own questions to this set of 15 common-core questions. The system automatically sends out generic email reminders several times to those students who have not filled out their evaluations. Instructors cannot see their SET results until after the last official day to post final grades but can monitor the response rates online and in real time (NCSU, 2013, para. 1).

The policies relating to strategies and/or incentives for completion of SETs are clear and cover such topics as the instrument, the scope, and the procedures. Specifically, students are not required to fill out the evaluation (NCSU, n.d., para. 31) and incentives to increase response rate are forbidden (para. 33).

Population and Data Collection

The population under study consisted of 205 instructors (out of approximately 950 total faculty members who taught at least one course in the previous semester) that received an SET response rate of 70% or higher. Because the objective of the study was to find successful strategies for increasing response rate, the decision was to limit participants to only those who taught at least one course in the semester that had a 70% or higher response rate. Seventy percent was selected in order to find successful strategies, and 70% covered most requirements for survey validity for class sizes over ten in liberal conditions (see Table 1). The

Table 2
List of Survey Strategies to Increase Response Rates

Strategy
Sent announcements through Moodle asking students to complete evaluations. If so, how many announcements do you generally send?
Sent personal e-mails to students asking them to complete evaluations. If so, how many emails do you generally send?
Talked about the importance of ClassEval in my class.
Included statements on the syllabus about ClassEval and its importance in my class.
Worked to create a climate in my class that reflects mutual respect between instructor and students.
Held my course in (or took my class to) a computer lab and allowed time for students to complete the evaluation while a moderator was there.
Encouraged students to bring laptops/tablets/smartphones to class and allowed time for students to complete the evaluation while a moderator was there.
Told my students how I use student evaluation feedback to modify my course.
Offered a mid-semester evaluation where students could give feedback and then used that feedback to modify my course.
Forwarded an e-mail from a Department Head or Dean about the importance of course evaluations to my College or Department.
Offered to bring snacks to class or final if a particular response rate was achieved.
Added bonus points to students' test or assignments if certain course response rates were achieved.
Dropped a low assignment grade for all students if certain response rates were achieved.
Increased all students' grades if certain course response rates were achieved.
Added a bonus/extra credit question or questions to the final if a certain course response rate was achieved.
No actions were taken to increase ClassEval response rates in these courses.

survey was anonymous, was open for three weeks, and used two follow-up reminders. Out of the population of 205, 120 participants completed the survey resulting in a response rate of 59%.

Instrumentation

A Web-based survey instrument was developed that listed 15 different strategies (see Table 2) that were either found in the literature as having been associated with higher response rates for SETs or that members of the EOTC heard were being used. The list was reviewed for face validity by members of the committee. It should be noted that the SET instrument used at this institution is called ClassEval. In addition, there were two text boxes in which respondents could add alternative methods that were not represented in the list. The survey began with qualifying questions (see Table 3) that if answered in a particular matter would disqualify a participant. This was done to assure that

participants actually did teach at least one course in the term that received a 70% or higher response rate. Because of the university policy against incentives, the study did not collect any identifying characteristics which could be linked back to a particular respondent, class, and/or set of evaluations.

The final part of the survey listed the 15 potential strategies along with two spaces for respondents to add strategies not represented as seen in Table 2. The prompt was stated: "In those courses that received a response rate of 70% or higher, select all of the ways you or someone else took action to increase response rates."

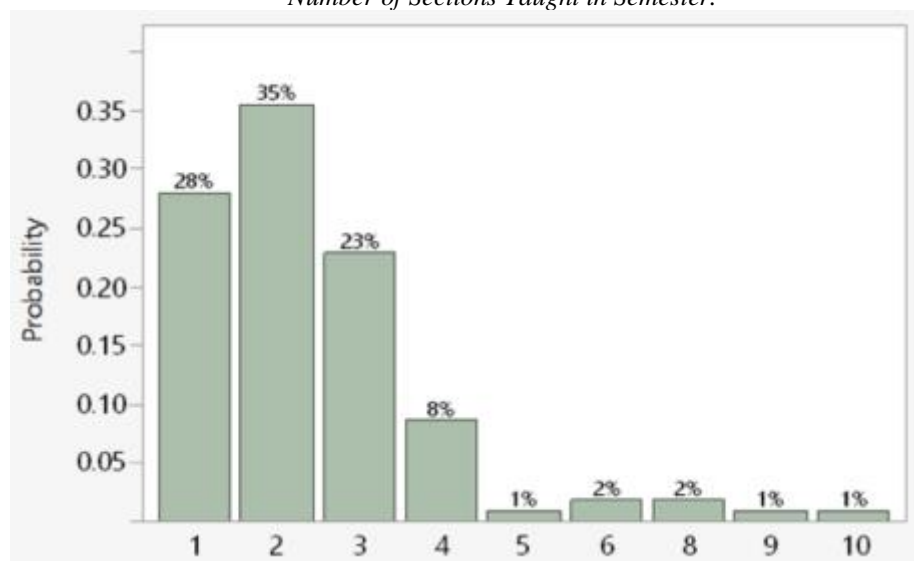
Findings

The instrument included three demographic questions. The first question asked respondents to report the number of course sections they taught in the prior semester (see Figure 2). Those that reported they taught five or more sections were likely considering

Table 3
Qualifying Questions

Qualifying Question	How Participant was Disqualified
How many course sections did you teach in Fall 2012?	Participant disqualified if response was zero
Of these courses, how many of them received an end of course evaluation response rate of 70% or higher (an estimate is fine)?	Participant disqualified if response was zero

Figure 2.
Number of Sections Taught in Semester.



labs, independent studies, and other course structures that differ from the standard three credit hour course. The second question asked respondents to specify the number of sections received an SET response rate of 70% or greater as seen in Figure 3.

The third question asked respondents to estimate the number of students in the class for those with an SET response rate of 70% or greater. Here the majority of the classes had from 11 to 25 students enrolled (see Figure 4).

Strategies

Respondents were asked to select strategies used to increase SET response rate in their courses that had a 70% or greater response rates in the previous semester. They could select from the list of 15 options in Table 2, or they could add additional strategies. They were allowed to select more than one option. The list of strategies included those that are considered incentives against the current policy as well as non-incentive strategies. Figure 5 shows the results of comparing instructors based on their use of incentives. As seen, the number of faculty using no form

of incentive strategies is statistically higher than those that used any form of incentive.

Response frequencies for each strategy are listed in Table 4. The most used strategies seen in Table 4 are not ones associated with giving away bonus points or altering assignments, but with the way in which the instructors approached students about the SET process. The most often used strategy was merely talking about the importance of SETs in their classes, followed closely by creating an environment of mutual respect in the classroom. The assumption here is that mutual respect creates an environment where students want to fill out evaluations. The third most commonly used strategy (and the only other strategy used by more than half of the respondents) was instructors who told their students how they used evaluation results to modify their courses. The next three most highly rated strategies were used by 27% to 35% of the respondents and were all related to the ways in which information about the SET was communicated.

During analysis, incentives were also categorized by type of incentive, a category that classified the strategy as either “No Incentive,” a “Red Incentive,” or

Figure 3
Number of Sections with SET Response Rate of 70% or Higher.

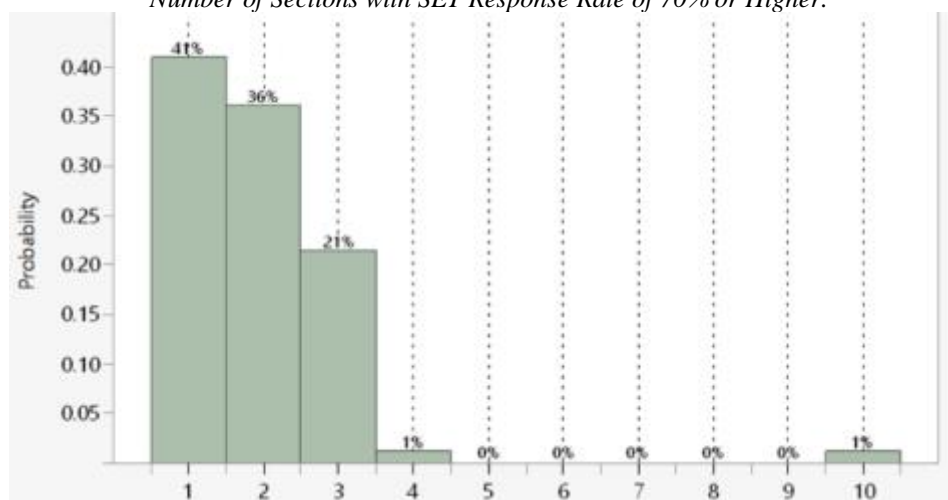


Figure 4.
 Number of Students in Sections with SET Response Rates 70% or Higher.

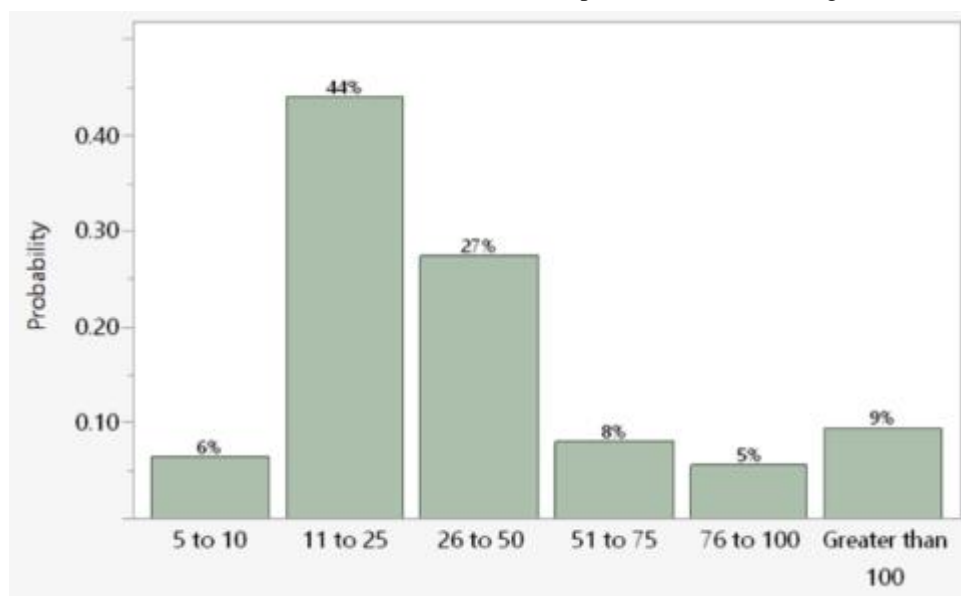


Figure 5
Proportion Testing of Faculty Using any Form of Incentive (95% confidence error bars)

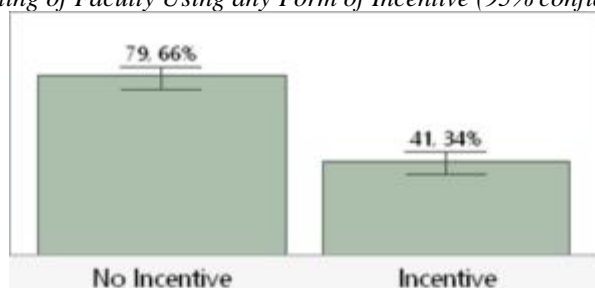


Table 4
Response Frequencies for Strategies to Increase Response Rates

Strategy	N	%	Type of Incentive
1 Talked about the importance of ClassEval in my class.	97	87%	No Incentive
2 Worked to create a climate in my class that reflects mutual respect between instructor and students.	93	83%	No Incentive
3 Told my students how I use student evaluation feedback to modify my course.	87	78%	No Incentive
4 Sent announcements through Moodle asking students to complete evaluations. If so, how many announcements do you generally send?	39	35%	No Incentive
5 Sent personal e-mails to students asking them to complete evaluations. If so, how many emails do you generally send?	36	32%	No Incentive
6 Included statements on the syllabus about ClassEval and its importance in my class.	30	27%	No Incentive
7 Encouraged students to bring laptops/tablets/ smartphones to class and allowed time for students to complete the evaluation while a moderator was there	26	23%	No Incentive
8 Offered a mid-semester evaluation where students could give feedback and then used that feedback to modify my course.	25	22%	No Incentive
9 Added bonus points to students' test or assignments if certain course response rates were achieved.	15	13%	Red Incentive
10 Held my course in (or took my class to) a computer lab and allowed time for students to complete the evaluation while moderator was there.	11	10%	No Incentive
11 Increased all students' grades if certain course response rates were achieved.	8	7%	Red Incentive
12 Added a bonus/extra credit question or questions to the final if a certain course response rate was achieved.	8	7%	Grey Incentive
13 Dropped a low assignment grade for all students if certain response rates were achieved.	4	4%	Red Incentive
14 Forwarded an e-mail from a Department Head or Dean about the importance of course evaluations to my College or Department.	2	2%	No Incentive
15 Offered to bring snacks to class or final if a particular response rate was achieved.	2	2%	Grey Incentive
16 No actions were taken to increase ClassEval response rates in these courses.	0	0%	No Incentive

*Respondents could choose more than one strategy.

a “Grey Incentive.” These categories were defined by the EOTC whereas a red incentive was classified as being totally against policy while grey incentive strategies were against the policy, but not as egregious because students were considered to be affected in the same manner. Both types of strategies were considered incentives currently prohibited by university policy. This categorization is displayed in Table 4.

The issue of grade influence only begins to show at the ninth most often used strategy where instructors added bonus points to tests or assignments if a certain response rate was achieved (13%), and strategies ranked at 11, 12 and 13 also refer to strategies that could will likely influence grades.

The total number of non-incentive strategies employed by faculty who used at least one incentive

versus those faculty who did not was statistically the same, as seen in Figure 6. Also, most instructors who received high response rates employed an average 4.3 different strategies. Even when a faculty member used a prohibited incentive to increase their response rates, he or she still employed an average of 4.5 non-prohibited strategies. Because the group distributions of “No Incentive” and “Incentive” were not normally distributed, a Wilcoxon/Kruska-Wallis Test using JMP™ software was employed to test the null hypothesis that the samples come from the same distribution. Since the p-value is 0.61, the null hypothesis cannot be rejected and it can be concluded that the number of non-incentive strategies employed by faculty who use at least one incentive is the same as faculty who do not employ incentives.

In Figure 5 it was shown that statistically, more instructors are employing incentives in alignment with university policy as compared to those that are using strategies prohibited by policy. However, class size seems to impact those decisions. Figure 7 shows the contingency analysis when doing the same comparison with regard to class size: small (5 to 25), medium (26 to 75), and large (greater than 75). The class sizes from Figure 4 had to be

merged to ensure at least five items of each class size occurred for each category (i.e., no incentive and incentive) to make the analysis valid. The null hypothesis (the proportion of faculty employing incentives for all three class sizes is the same) is rejected because the p -value for the Chi square test that is less than 0.0001. The larger the class size, the more likely a faculty member was to use a prohibited incentive to help increase response rates.

Figure 6
Comparing the Number Non-Incentive Strategies Employed by Each Respondent.

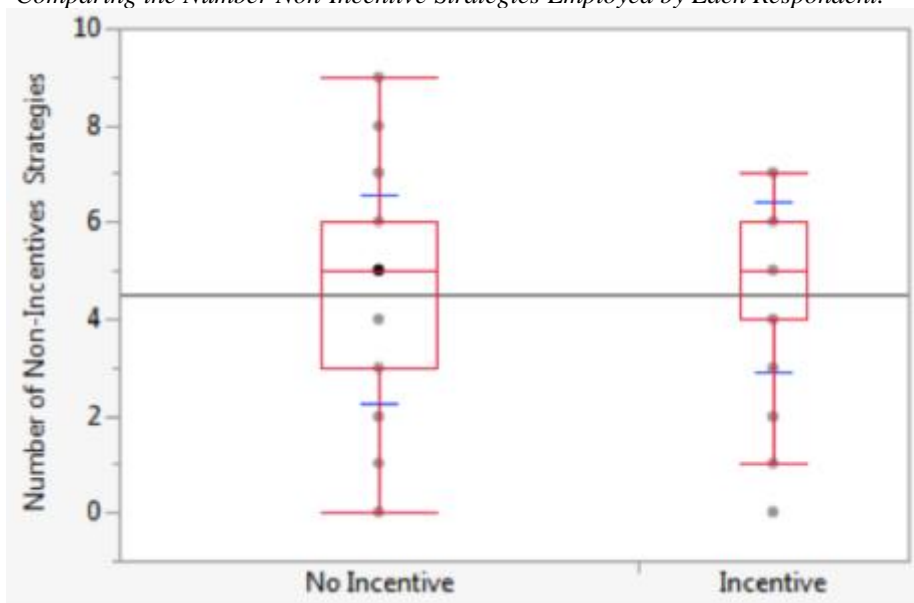
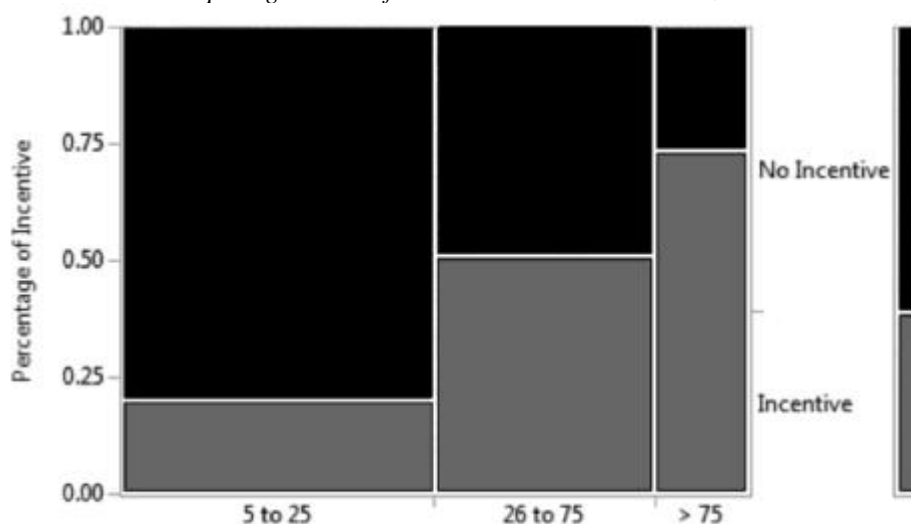


Figure 7
Comparing the Use of Incentives Based on Class Size.



Additional Strategies

Thirty respondents submitted strategies they felt were not represented in Table 4, but after closer inspection, only 10 were considered additional strategies (Table 5). The first strategy was related to evoking student responsibility where instructors would not only talk about the SET in class, but would also imply the student had a social responsibility in helping to create better learning environments and providing input affecting the career of the instructor. Some instructors told students that evaluation was a privilege that was fought for decades ago and others described it as a responsibility. This can clearly be seen in one instructor's comment "I emphasize that I worked hard to deliver their course and if they respect that fact, I am entitled to feedback- positive or negative."

Another instructor described her strategy, "I explain that low response rates mean that the evals, whether positive or negative, are somewhat suspect." The next most often mentioned additional strategy was giving students time off: "I let students leave early or not have class if a certain response rate was achieved," explained an instructor. Note that all mention of time off related to the last day of class, whether it was part of the day or the entire day.

Discussion

This study sought to determine the types of strategies that are successful in increasing response rates to SETs. Although the findings are limited due to the self-reporting nature of the study, there are still valuable findings and implications for policy, instructors, and administrators. While instructors can employ a myriad of methods, three strategies were used by more than 75% of the respondents in this study. These strategies were:

1. Talked about the importance of class evaluations in my class;
2. Worked to create a climate in my class that reflects mutual respect between instructor and students; and
3. Told my students how I use student evaluation feedback to modify my course.

These results clearly show that at this institution, high SET response rates are more associated with course climate and instructor-student communication than with incentives given to students. In fact, the top eight strategies did not include incentives and it was only at 13% when actual incentives appear in the results (adding points to tests or assignments.) This contradicts the findings of Goodman and colleagues

(2015), who determined that grade incentives were the most effective way of increasing response rates.

Policy and Standards

When reviewing the usage of strategies that are acceptable to the institution and incentives that are not, the results have clear policy implications. The policy at the university under study states, "There is no penalty to students who decline to submit evaluations," and, "No form of incentive should be provided to increase response rate." While the great majority of instructors achieving a 70% or higher response rate used strategies that would not be considered incentives, there were instructors using incentives that are opposed to the institutional policy. Table 6 displays the strategies instructors used that may be considered incentive-based.

Implications for Instructors

The clearest implication from this study for instructors is to talk about student evaluations of teaching with their students. This not only includes explaining their purposes, but also focusing on how the instructor uses the information and who benefits from the information that is submitted via an SET (Lewis, 2001a). Results of this study support the case for creating a climate of mutual respect, one where student opinions are respected and addressed and instructor needs are taken into consideration. This can be accomplished through class discussion and by modeling behaviors such as using formative evaluations of teaching and pointing out to students the changes that result from analysis of the data. The key information here is that incentives are not only against policy, likely to bias data, and have questionable ethical implications, but they also do not work as well as simply reinforcing the importance of participating in the process making students feel their voices make a difference.

Implications for Policy and Administrators

The results of this study in no way support the use of incentives to raise SET responses rates. Policy makers should focus on rules and processes that enable faculty members to conduct productive evaluation discussions in all classes. Steps should be taken to reduce the conflict between the use of SET results for course improvement and the use for promotion and tenure purposes. When an institution places high importance on SET data for promotion and tenure, it may also increase the likelihood of an instructor to use incentives to increase response rates. Should SETs be primarily used to improve instruction, response rates and validity become less of a high-stakes issue and the

Table 5
Additional Strategies via Open-ended Responses

Strategy	N	%
1 Evoked Student Responsibility or Guilt	4	4%
2 Make Learning about Statistical Significance a Part of Class Content	4	4%
3 Gave Students Time Off	3	3%
4 Gave Bonus attached to Honesty Attestation	2	2%
5 Commanded Students to Complete Evaluation	1	1%
6 Appealed from the Student Perspective	1	1%
7 Withheld Final Grades	1	1%
8 Created Competition Among Sections	1	1%
9 Altered Final Exam	1	1%
10 Withheld Study Aids	1	1%

Table 6
Strategies that May Be Construed as Incentives

Strategy	N	%
1 Increased all students' grades if certain course response rates were achieved.	15	13%
2 Added a bonus/extra credit question or questions to the final if a certain course response rate was achieved.	11	10%
3 Dropped a low assignment grade for all students if certain response rates were achieved.	8	7%
4 Gave Bonus attached to Honesty Attestation	2	2%
5 Offered to bring snacks to class or final if a particular response rate was achieved.	2	2%
6 Withheld Final Grades	1	1%
7 Altered Final Exam	1	1%
8 Withheld Study Aids	1	1%

pressure to increase response rate somewhat diminishes. The goal for policy makers should be to reduce the impetus for participating in activities that would bias results or be considered unethical. As echoed by the American Evaluation Association (AEA) evaluation standards (AEA, 2015), SET policy should project and guard against unintended consequences, such as extreme urgency in inflating SET response rates, as well as avoid conflicts of interest between the formative and summative uses of the SET. In order for SETs to be valid and reliable, policy makers should decide their primary purpose (i.e., course improvement or faculty promotion and tenure).

Conclusion

This study examined practices among instructors who had high SET response rates in order to determine best practices in increasing end of course evaluation response rates. Findings indicated that the most common strategies to successfully increase SET response rates were:

- a. Discussing the importance of evaluation feedback and how it will be used to inform future courses
- b. Working to create a classroom culture that reflects mutual respect between instructor and students.

Showing students "that their input is important in the collaborative venture of teaching and learning" is mutually beneficial to instructor and student (Keutzer, 1993, p. 240). Use of incentives was not employed as widely as the investigators expected. Based on the results, an FAQ document was created to assist faculty in increasing response rates without the use of incentives (NCSU, 2014). The FAQ document was distributed through multiple channels, and there is some anecdotal evidence that it is making a difference as the response rates have risen back to the upper 40% range over the past few semesters.

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Goal Setting as Teacher Development Practice

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This article explores goal setting as a teacher development practice in higher education. It reports on a study of college teacher goal setting informed by goal setting theory. Analysis of study participants' goal setting practices and their experiences with goal pursuit offers a framework for thinking about the kinds of goals teachers might set in university settings. This analysis also sheds light on potential factors that help and hinder goal achievement, especially goal commitment and self-efficacy. The article concludes with recommendations related to these areas. The overall aim of this article is to assist teachers and teaching supervisors who may be interested in using goal setting to foster growth in teaching.

Goal setting is a widely embraced practice in corporate settings and a highly regarded subject in literature on the workplace. However, its presence is weaker in higher education scholarship on teaching. Recent research on the primary and secondary levels of education gives reason to pay greater attention to teachers' goals. Findings indicate that teachers' goals may impact their professional growth and instructional effectiveness. A teacher's "goal orientation" appears to impact his/her likelihood of seeking help in the face of teaching challenges (Butler, 2007), effort at creating classroom environments that emphasize growth over competition (Shim, Cho, & Cassady, 2013), commitment to serving as a socio-emotional support for students (Butler, 2012), and resistance to teacher burnout (Retelsdorf, Butler, Streblov, & Schiefele, 2011).

The potential impact of teachers' goals on student experience makes teacher goal setting an important research area. Researchers interested in studying teacher goal setting in higher education might take cues from the previously cited studies and focus on goal orientation; alternatively, they might look at other areas related to goal setting, including characteristics of effective goal setting programs and factors that aid and impede teachers' goal progress. Such research might shape campus-wide and discipline-specific teacher preparation practices, influence programs offered by Centers for Teaching and Learning, and help individual faculty pursue teaching growth amidst other professional responsibilities.

This article explores the value of goal setting as a teacher development practice. It reports on a study in which twelve teaching assistants in an English department were acquainted with basic tenets of goal setting theory, set teaching goals, and reflected on their goal progress at midterm and the end of a semester. Analysis of teachers' goal-setting practices and their experiences with goal pursuit provides a framework for thinking about the kinds of goals teachers might set. This analysis also sheds light on potential factors that help and hinder goal achievement, especially group dysfunction and competing demands on time.

Conclusions drawn from this study suggest that for some teachers, goal progress may be stalled by a lack of goal commitment and low self-efficacy. Therefore, this piece concludes with recommendations related to these areas. The overall aim of this article is to assist teachers and teaching supervisors who may be interested in using goal setting to foster growth in teaching.

Literature Review

The term "goal" takes on different meanings in different contexts; thus, some definitional work is in order. In an expansive sense, goals can refer to "the object or aim of [any] action" (Locke & Latham 2013a, p. 4). Under this broad definition, goal pursuit encompasses the grandiose and the mundane, the deliberate and the subconscious. Goals include biological and social needs that are met through routine decision making, as well as more abstract values and ambitions that drive an individual's "personal projects" (Little, 2014). Often, both types of goals are largely intuitive, woven into a person's everyday patterns of thinking and behavior.

In common parlance, "goals" generally refer to more concrete and mindful ends. They are performance outcomes or learning targets that individuals use for self-evaluation, "a criterion against which to assess, monitor, and guide cognition" (Pintrich, 2000, p. 457). They are also aspirational, orienting the individual toward a "desirable future state of affairs" (Shah & Kruglanski, 2000, p. 85). Through New Year's resolutions, for instance, individuals identify positive changes they want to make for the coming year, often emphasizing the improvement of health habits. In business environments, SMART goals—a popular acronym used to identify the characteristics of effective goals—are often set by individuals or teams as a means to boosting productivity and achievement.

This familiar and concrete definition of "goal" appears in higher education research in studies that use goal setting to promote student learning and achievement (Emery et al., 2014; Huang, 2015; Kato,

2009; Wang & Ertmer, 2003). In Glynda Hull's (1981) study of goal setting in a college writing course, for instance, first-year students doubled their journal writing production when they were working toward lines-per-day and entries-per-week goals and were tracking their progress. Latham and Brown's (2006) study of goal setting in an MBA program indicated that students' goal setting may influence their end-of-semester GPA and satisfaction with their degree program. And George, Reis, Dobson, and Nothnagle's (2013) study of the use of a faculty mentor to facilitate goal setting for second-year medical school residents underscored the value of providing students with "protected time for self-directed learning."

While such examples illustrate how goals and goal setting have been used in higher education research to support student learning, research that examines the use of goal setting for *teachers* is noticeably absent. Thus, we lack information about the benefits and drawbacks of goal setting for this group. This research aims to help fill this gap. The questions guiding the study were as follows:

Can key findings from goal-setting research be used to facilitate teacher improvement? What challenges might deter teaching supervisors from using this theoretical framework for teacher development? What opportunities does this theory open up?

Theoretical Framework

Industrial-organizational (I/O) psychology has a strong research tradition around goal setting that can be useful to the college teacher. In fact, goal setting has been characterized as "one of the most *extensively studied topics* [emphasis added] in the fields of industrial-organizational psychology, organizational psychology, and management" (Locke, 2001, p. 44).

The accumulated findings from I/O research on goal setting have been compacted into a set of patterns and assumptions now referred to as *goal setting theory*. Described as an "open" theory in that it evolves with new research, a key version of goal setting theory was formulated in 1990 based on 400 studies (Locke & Latham, 1990). Since then, more than 600 studies have been completed (Locke & Latham, 2013b, p. xi), leading to new findings and additional areas of inquiry.

Goal setting theory has been acclaimed as "among the most valid and practical theories of employee motivation" (Locke & Latham, 2002, p. 714). A number of principles comprise its foundation, the most immutable of these being that setting *specific, difficult* goals produces stronger outcomes than setting easy or medium goals or simply trying to "do your best." This finding was central to the 1990 formulation of goal setting theory. Locke and Latham noted a linear relationship between goal difficulty and performance,

citing one study in which participants setting the highest goals outperformed those with the easiest goals by 250% (2013a). Numerous literature reviews and a series of meta-analyses substantiated the abstract vs. specific goals conclusion as well (2013a).

Locke and Latham attribute the effectiveness of goals to four mechanisms. Goals have a *directive* effect: they direct attention and effort toward goal-relevant activities and away from goal-irrelevant activities" (2002, p. 706). They have an *energizing* and a *persistence* effect: "effort is mobilized and expended in proportion to the difficulty level of the goal," and we work longer at the task than we otherwise would (2013a, p. 6). Finally, they promote *strategy use and development*, causing us to search our problem-solving repertoire for skills relevant to the task or, when lacking, to generate alternatives.

Beyond defining the nature of the goals that should be set, goal setting theory sheds light on the effect of feedback, or knowledge of results, on performance outcomes. Findings indicate that an individual's awareness of his/her progress on a given task is essential for goal setting to be effective, and, just as important, absent goal setting, knowledge of results is a weak facilitator of improvement. Tellingly, the latter finding is buttressed by workplace studies in which employees receive a performance review but aren't instructed to set goals based on their appraisal (Latham, Mitchell, & Dossett, 1978; Nemeroff & Cosentino, 1979), a scenario reminiscent of peer or supervisor feedback on teaching or personal reviews of one's student evaluations.

One intriguing tenet of goal setting theory concerns the orientation of the goal, whether directed toward *learning* or toward *outcomes*. In situations that are complex for an individual, the literature indicates that a person is better served by setting a specific, difficult *learning goal*, emphasizing the acquisition of knowledge and skills, rather than a goal focused on results. The former will help her learn *how to* tackle the problem, equipping her with the skills to succeed, while the latter will deplete cognitive resources that are needed for task learning and strategy development. Outcome goals set in novel, complex circumstances can also reduce an individual's self-efficacy—belief in one's ability to succeed on a task—in turn, impacting performance (Kanfer & Ackerman, 1989; Latham & Brown, 2006; Winters & Latham, 1996).

Method

These findings from goal setting theory informed a semester-long, IRB-approved study of college teacher goal-setting activities. Twelve graduate teaching assistants (0.5-2 years college teaching

experience) volunteered for the study. These teachers were the instructors of record for English composition courses at Minnesota State University, Mankato, a Masters-granting institution in the US with a student population of 15,000. Each teacher was enrolled in one of the English Department's graduate degree or certificate programs: five Creative Writing, three Teaching English as a Second Language, two Literature and English Studies, and two Technical Communication. Each of the teachers had taken a two-week summer teaching workshop prior to teaching and, during his/her first semester, enrolled in a weekly teaching course and a peer mentor group. The teachers also took part in the English department's ongoing teacher development activities, including classroom observations and conferences over their teaching.

At the beginning of the semester, teachers who had volunteered for the study attended a workshop that introduced them to the central tenets of goal setting theory and that assisted with goal setting. Using self-reflection, student evaluations, and peer/supervisor feedback as a guide, teachers identified general areas in which they wanted to grow. In the workshop they were encouraged to select areas that would make them feel more effective in the classroom and satisfied with their teaching. They left the workshop assigned to a peer group intended to support their goal progress and with the following goal-setting instructions:

- Pick one area in your teaching that you would like to focus on this semester.
- With your group's help, develop one or more difficult, specific goals for yourself related to this area. These may be outcome or learning goals.
- Determine how, when, and from whom you will receive feedback on your goal setting. Possible individuals include group members, the Composition Director, other TAs, English faculty, students, and/or yourself.
- Submit an action plan by the end of the week.

Following the workshop, teachers composed (and in some cases revised) their "action plans," identifying the teaching goal(s) they planned to pursue that semester and the steps they planned to take. At midterm and the end of the semester, teachers completed a questionnaire about their progress within, and feelings about, the goal-setting program.

The data for this study consisted of notes from a full-group discussion held during the goal-setting workshop, teachers' written goal plans, and mid- and end-of-term goal-setting questionnaires. These documents were examined via a "grounded" coding technique in which categories were developed

inductively, and patterns in teachers' goal areas, goal types, progress facilitators, and progress impediments were recorded. A goal setting theory framework was also applied to analyze teachers' written goal plans. Finally, aggregate Likert responses from the midterm survey were used to identify trends in teachers' views and experiences.

Results

Generating Goals

In the goal-setting workshop, four goal areas surfaced more frequently than others in teachers' brainstorming. Teachers were interested in setting goals related to:

- Organization: being more prepared for class
- Use of class time: eliminating "busy work," creating worthwhile class activities
- Engagement: increasing student interest and investment in the material/course
- Class discussion: facilitating more productive, active conversations

Some goal areas were named less often but still showed up more than once--specifically, tailoring teacher ethos (e.g., being stricter or more personable); strengthening the selection, organization, and delivery of content; and speeding turnaround time on grading.

Conceivably, teachers' gravitation toward the Big Four may be tied to their newness to teaching. For new teachers, pragmatic concerns pervade; speaking of new Composition teachers, for instance, Jessica Restaino notes, "[F]rom the vantage point of the new writing teacher, the challenge of what to do each day looms" (2012, p. 31). *Organization* and *use of class time* goals may reflect this beginning teacher preoccupation. The popularity of *engagement* and *class discussion* goals suggests that for many teachers, immediate concerns had been sufficiently handled to attend to teaching methods. Jody Nyquist and Jo Sprague (1998) categorize such thinking as second stage, or "colleague-in-training" concerns in the arc of TA development.

In the week that followed the goal-setting workshop, teachers had to narrow their focus and select one or more goals to pursue. All twelve teachers selected goals and generated a written plan that described how they would accomplish them. Across plans, three categories emerged that differentiated the goals by their primary emphasis:

- Content goals emphasized mastering, or developing strategies to master, a body of content in order to be better prepared to teach it.

- Course management goals emphasized learning or instituting practices that would improve the administration of a course.
- Teaching strategy goals emphasized learning or instituting teaching practices in order to improve the quality of learning.

In this study, teaching strategy goals were most popular (59%), followed by course management goals (36%), with only one content goal being set (5%). Here again, teachers' stage of teaching development may have had an effect on goal distribution. It's plausible that more experience would have increased teachers' contact with the teaching profession and with disciplinary literature; that contact, in turn, may have alerted teachers to content areas in which they wanted to grow. Furthermore, it's likely that cuing from the goal workshop influenced teachers' goal selection. Teachers were directed to use teaching evaluations, peer and supervisor feedback, and reflection on their teaching to inform their goal setting. These cues may have directed attention to teaching strategy and course management over content goals.

Table 1 categorizes goals by their *focus*. It lists the more specific outcome that individuals intended to achieve with their goal(s) and identifies the number of goals that had each focus. For this group of teachers, improving class discussion was a top priority. In general, teaching strategy goals varied (with the exception of class discussion) while course management goals tended to group in similar focus areas.

As far as goal *orientation*, goals directed toward achieving results (outcome) were more popular than those that emphasized gaining knowledge (learning). Ten of the twelve teachers (83%) set outcome goals, with four of these teachers also setting learning goals. Half of the total number of teachers set learning goals. The mean number of goals set by teachers was two.

Applying Goal-Setting Tenets

In the goal-setting workshop, teachers were instructed to set *specific, difficult* goals and to delineate a *mechanism for receiving feedback* on their goal progress. Each factor is considered below.

Specificity. Generally, teachers' written plans identified one to two goal areas that the teachers wanted to work on and laid out steps for pursuing these goals. Listing implementation steps was essential to moving teachers from abstract, high-level goals to concrete, low-level actions.

Locke et al. define specificity as "the degree of quantitative precision with which the aim is specified" (Locke, Shaw, Saari, & Latham, 1981, p. 126). Across plans, the specificity of teachers' implementation steps

varied widely. Quantitative precision was evidenced in implementation steps like the following:

Kyra's Learning Goal:

Learn techniques for teaching to a wide range of skill levels in one classroom. Identify at least 3 new strategies through (a) conversations with at least 3 experienced teachers and (b) gathering at least 3 pieces of scholarly research on the subject. I will test at least 2 of my identified strategies in the classroom this semester and report back to my feedback group on my experiences.

Dana's Learning Goal:

Research 10-15 effective practices for facilitating class discussion.

Adam's Outcome Goal:

I will have my lessons prepared at least twenty-four hours in advance.

Ellie's Outcome Goal:

Use Jing to create a tutorial for my class next semester.

On the other end of the spectrum were plans that identified goals but adopted vague steps for implementation. Sometimes this vagueness seemed to be due to the nature of the goal itself; other times, it seemed to be more a consequence of the teacher's lack of understanding of or effort to design a precise goal.

Excerpts from Megan's plan illustrate the challenges that teachers had setting specific goals. In her plan, Megan identified two goals she intended to pursue: improving her discussion leading skills (outcome goal) and cultivating a more authoritative teacher ethos (learning goal). In discussing the first goal, she indicates that during the previous semester, she had "been so overloaded with work" that she succumbed to "correcting" and "telling" over "guiding." Her first goal was intended to curb that habit. She writes the following:

My goals for my teaching this semester are to listen more to what my students think while focusing my energies on open-ended questions to begin to develop their interpretative viewpoints and analytic skills. In addition to asking more [open-ended] questions, I intend to allow the silence to hang longer while I wait for them to begin to answer the questions. To give myself more opportunities to do so, I intend to spend more time scaffolding the types of analysis and

Table 1
Focus of Goals

Goal Type	Goal Focus	Number of Goals with this Focus
Content	Learning MLA Guidelines	1
Course Management	Using class time effectively	3
	Improving organization	2
	Constructing an effective teacher ethos	2
	Returning student work in a timely manner	1
Teaching Strategies	Improving class discussion	5
	Increasing student engagement	2
	Fostering student independence	1
	Improving delivery of content	1
	Leading effective peer reviews	1
	Teaching different levels of learners	1
	Teaching using active learning	1
	Teaching with technology	1

activities as a whole group before moving to small groups or individual responses.

In her quest to develop a “guiding” teaching style, then, Megan intended to:

- 1) Listen more
- 2) Invest more energy into open-ended questions tied to interpretation and analysis
- 3) Allow silence to hang longer
- 4) Spend more time scaffolding

Each of these sub-goals could be stated in such a way to make it quantifiable. For instance, Megan could indicate how many seconds she would remain silent while waiting for a student response. She could delineate how many open-ended questions she would pose per week. Doing so would require her to define meaningful, cross-situational standards—no easy task—and to create and implement sensitive feedback mechanisms. In lieu of this complexity, she names general practices that support her goal.

Difficulty. Locke recommends that goal level should be “*very hard—even outrageous*” [emphasis in original] to produce optimal results (2001, p. 50). Harder goals induce goal setters to expend greater effort; thus, even if individuals don’t achieve their goals, their achievements outweigh those of their easy-goal or no-goal peers. At the same time, individuals must perceive their goals as attainable; impossible goals backfire by undermining confidence and motivation (Kerr & LePelley, 2013). In the present study, teachers determined for themselves what constituted a difficult goal. Two sources of difficulty were mentioned in

teachers’ implementation plans: personal weakness and lack of time.

A few teachers signaled that their source of goal difficulty came from personal characteristics they were attempting to address. Brandi, for example, set a number of sub-goals related to organizing and simplifying her teaching routines and materials. Commenting on their difficulty level, she writes, “I am and always have been one to worry, overthink, overplan, and overextend myself, leading to anxiety, indecision, and poor organization. . . [My goals may] at first glance seem to be deceptively simple goals. However, this is subjective to the individual, and for me, the very difficulty lies in simplicity.” Likewise, one of Dillon’s implementation steps related to strengthening the teacher-student relationship, including being more outgoing and friendly. He cites his tendency to “feel awkward in large groups” and the fact that he “[is] not the most personable teacher out there” as sources of goal difficulty.

Too much to do, too little time also was cited as a source of difficulty in implementation plans. “The biggest challenge for me in graduate school is time management,” writes Adam, “These goals may not sound difficult by themselves, but I am already feeling pretty challenged to balance all of my responsibilities as a student, a writer, and a composition instructor.”

A third source of difficulty that was evident in teachers’ plans was the elaborateness of their plans and/or the consistency that would be needed to achieve their goals. Elaborate plans might include six or more steps, each requiring a significant investment of time and energy; consistency-intensive plans required frequent inputs: daily study, for

instance, or manually tracking students' participation during each class period.

Feedback. The mechanisms for feedback that teachers adopted depended on the nature of their goals and the specificity of their plans. Self-monitoring through written records, peer teaching observations, and goal-setting group contact/observations were all listed as sources of feedback on goal progress.

Teacher Self-Assessment

At midterm and the end of the semester, teachers completed a questionnaire on their progress on, and attitude toward, their goals. The questionnaire had two sections: a series of short answer questions and a Likert scale. The short answer questions asked teachers to describe their goal activities, identify factors that aided or impeded their goal progress, assess their satisfaction with their headway, and share their thoughts about the strengths and limitations of using goal setting theory in teacher development, based on their experiences (see Appendix).

Nine of the twelve teachers completed a questionnaire at midterm. Six of the twelve teachers completed a questionnaire at the end of the semester, including two teachers who did not complete midterm surveys. Except in an instance in which a teacher completely revamped her goals at midterm, Likert survey responses at the end of the semester strongly resembled those at midterm. Figure 1 displays the teachers' responses to the Likert scale at midterm, the point at which there was a higher return rate.

In their Likert responses, teachers were positive about the goal-setting process: all nine teachers felt that their teaching had improved by setting goals, and eight of the nine teachers considered the goal-setting process to be a worthy time investment. Interestingly, this was the case for teachers who were making progress on their goals *and* for those who were not. Goal progress, and satisfaction with that progress, was uneven, with the group split between those who appeared to be advancing toward their goals and those who were stalled. Thus, almost half the teachers were displeased with their lack of progress on their goals *yet* were convinced that goal setting was strengthening their teaching.

Teachers' short answer question responses clarified this puzzling tension. Teachers whose progress had been impeded nonetheless appreciated the reflective and directive value of goal setting. Teachers stated the following:

- "Putting my goals down on paper helped clarify my thoughts."
- "It helped give me an overall sense of direction."

- "Setting goals that are specific forced me to really think about my teaching practices."
- "It did raise my consciousness of what I am doing in the classroom somewhat."
- "Simply setting the goals was a beneficial process because it helped me think about my strengths and weaknesses as a teacher and has helped bring focus to my teaching."
- "This experience has helped me become a better teacher because I realize what makes me comfortable and what makes me feel underprepared."

Teachers' comments suggest that they valued the *kind of thinking* facilitated by goal setting and saw it as a mechanism for growth. Goal setting instigated purpose-driven reflection, entailing an overarching assessment of one's teaching paired with a careful tracing of root causes and exploration of mechanisms for action or change. Teachers appear to have valued this process for its ability to provide self-understanding and a sense of focus, direction, and control. For them, self-awareness and vision were important components of growth, whether or not immediate action was taken.

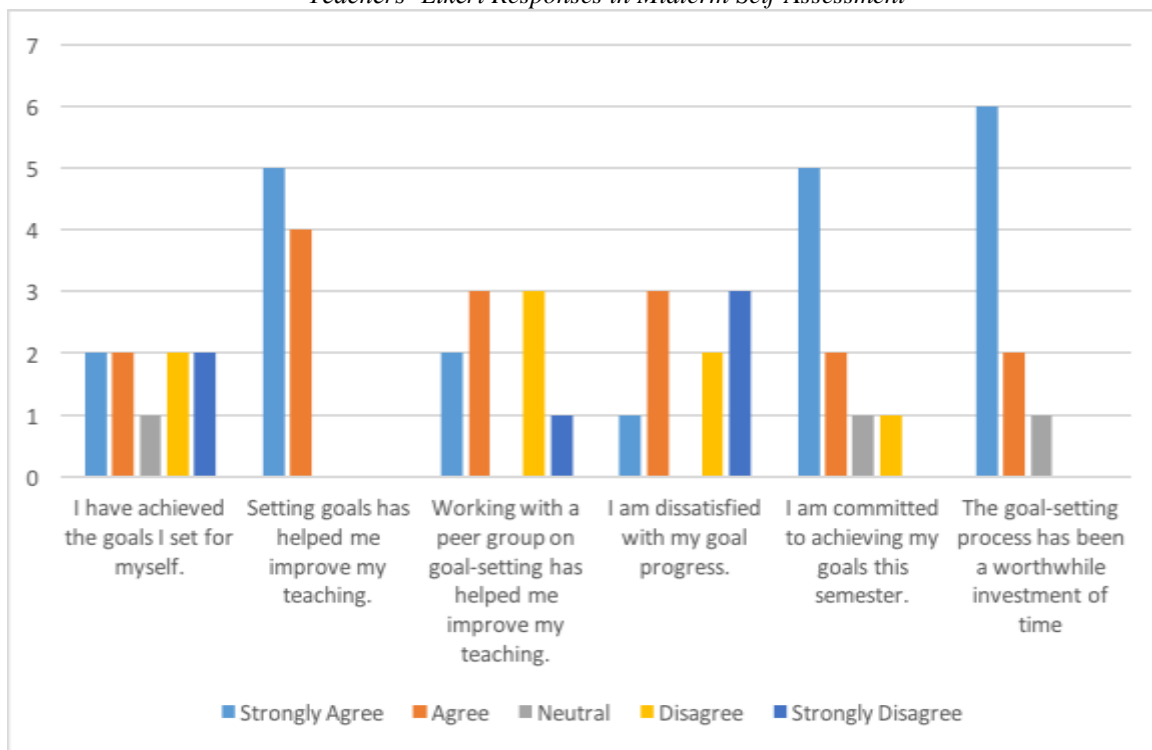
Factors that supported teachers' goal progress varied. Teachers attributed their success to their intrinsic motivation to teach well, the immediate "feel-good" payoff associated with achieving certain goals, accountability to and assistance from others, their increased comfort in the classroom, and the level of specificity of their goals.

In contrast to this variety, two clear trends emerged in the factors that impeded—or failed to support—teachers' goal progress. These factors were competing commitments for time and dysfunctional peer groups. Additional factors mentioned were ambiguity surrounding how to delineate/measure goal achievement and personal life stress.

Teachers cited lack of time as a hurdle to goal accomplishment. They mentioned their graduate course load, teaching responsibilities, thesis demands, and professional writing and reading as priorities that took precedent over their goals. "Most weeks, it seems virtually impossible for me to complete all of that work *and* add these other goals to the mix," observes Adam. He characterizes his teaching goals as "only supplementary to my overall experience," a lesser priority in comparison to the academic and work-related "necessities."

Challenges posed by peer groups included disparate goals (which thwarted the opportunity for "joint brainstorming") and lack of organization and commitment, facilitated by vague planning (e.g., "we'll check in later,"), confusion over group function, and predominance of social relationships.

Figure 1
Teachers' Likert Responses in Midterm Self-Assessment



Discussion

What insight does this study provide into the use of goal setting as a teacher development practice? First, this study suggests categories of goals that might be valued by teachers, especially those who are newest to the profession. Specifically, in this study, teaching strategy, course management, and content goals guided teachers' activities. Within these categories, both process and outcome goals were pursued. This general framework might be usefully appropriated by teachers to generate goals for their teaching.

Conceivably, the type of goals set by teachers in this study was influenced by their years of experience and by the instructions they were given in the goal setting workshop. A different set of instructions or a different population of teachers might alter the ratio of goals in each category or the categories themselves. For example, guidelines for teacher goal setting might have been broadened to make room for "professional goals," goals related to nurturing one's teaching identity within a community of teachers. Such goals might have helped teachers see growth in teaching as a process that extends beyond the walls of the classroom, nurtured through collegial relationships and participation in the give-and-take of a discipline. Nevertheless, the three

categories described here may serve as a generative starting point for teachers interested in defining and pursuing growth in teaching.

Second, this study sheds light on the opportunities and challenges of applying goal setting to college teaching. Findings indicate that teachers viewed goal setting as a positive investment of time and felt it improved their teaching. By semester's end, half of the teachers reported that they had achieved their goals and appeared to be satisfied with their goal progress. Even those who did not make significant progress indicated that goal setting had been valuable to them through its directive effect, facilitating purpose-driven reflection and problem solving. At the same time, teachers encountered several impediments that stymied goal achievement. Half of the teachers relayed that they did not achieve their goals, with the central factors impeding goal process being dysfunctional peer groups and competing time commitments.

With respect to peer groups, teachers' concerns varied, and thus no single, clear solution would seem to suffice. It may be that group functioning could be improved through establishing a clear schedule and agenda from the outset; alternatively, embedding goal setting within well-established peer cohorts on campus may help. For example, the English department's well-

established and highly functional TA peer mentoring program would be a promising site for piloting goal-setting activities. Embedding goal setting within one of the faculty programs offered through the university's Center for Excellence in Teaching and Learning is another possibility. Still another approach might be to explore feedback and accountability measures that do not rely on peer groups. More experimentation is necessary to determine how peer groups might support teacher goal setting.

"[A]s a graduate student, time and energy are scarce resources, and I unfortunately felt too drained or stressed to make extensive progress toward my goals" (Adam). This "lack of time" sentiment was shared by a number of teachers. Time constraints may present one of the biggest challenges to effective goal setting for teachers. Both new and experienced teachers may perceive goal setting as a positive activity but low priority, particularly when weighed against other commitments.

Employees in other work environments struggle with similar challenges. As a result, a new line of I/O Psychology research has taken up the competing demands dilemma, exploring scenarios in which more than one goal is at play. Researchers studying multiple goal pursuit examine how goals are pursued in such settings, studying the effects of goal difficulty, task environment, confidence in goal attainment, and incentives on goal activity.

One relevant finding from this literature is that incentives influence resource allocation within a dual-goal environment. In their multiple goal research, Schmidt and DeShon found that "[w]ith an incentive available for only one of . . . two tasks, participants focused heavily on the task with which the incentive was associated" (2007, p. 938). For participants in Schmidt and DeShon's study, the incentive was financial; however, in many settings, incentives may be more intangible. For example, a first-semester teaching assistant may be motivated by the desire to secure peer respect, teacher approbation, and an image of oneself as an excellent graduate student; these "incentives" may lead teaching assistants to focus on graduate course assignments at the expense of teaching goals. Further encouraging this resource allocation pattern are looming assignment deadlines and the intrinsic motivation felt toward a subject matter or craft. While not inherently bad, these forces have the potential to severely undermine teacher goal-setting activities through orchestrating teachers' decisions about time.

To be sure, time is finite, requiring teachers to decide how to allocate their mental and physical resources. Write Schmidt and Dolis, "If an individual's resources are insufficient to meet the cumulative demand . . . then something has to give, necessitating difficult decisions concerning how to divide one's time

across the competing demands" (2009, p. 680). At the same time, it's possible that in many instances, goal success may hinge less on increased free time than on goal commitment and a strong belief that multiple goal achievement is possible. In other words, teachers may discover that they do have time for goal pursuit, if they are intent on achieving their goals ("goal commitment") and have confidence that they can be achieved without compromising other important priorities ("dual-goal expectancy"). For teacher goal setting to be successful, teachers and teaching supervisors may need to pay particular attention to these areas.

Conclusion

Goal Commitment

Without commitment to one's goals, significant progress is unlikely. Simply put, "no motivational effects will occur from goal setting if there is no commitment to a goal" (Slocum, Cron, & Brown, 2002). Fortunately, many steps can be taken to increase goal commitment, thereby facilitating goal achievement.

Factors that have been shown to increase goal commitment include:

- *Supervisor investment and support.* Deans, department chairs, and TA directors can signal investment in goal setting as a teacher development practice. Goal setting might be incorporated into new college-wide orientations or be allotted time in faculty meetings, for instance.
- *Public Goal Setting.* Faculty can institute goal setting in public forums, developing communicative mechanisms that promote greater accountability toward and visibility of teachers' goal progress.
- *Incentives.* Teaching supervisors can make judicious use of incentives to spur teachers' goal setting activities. For example, the Minnesota State University, Mankato English department recently implemented an Excellence and Innovation in Teaching award for teaching assistants, a prize conferred through a competitive selection process. This award incentivizes effort and creativity in teaching through offering teachers recognition and a small cash prize. The department also recently created an Outstanding Adjunct Faculty award, given to someone whose application demonstrates his or her "commitment to continued growth as a teacher." Awards like these can be tied to goal-setting activities, thereby increasing goal commitment.

- *Intangible Rewards.* Locke and Latham cite “internal rewards” as an important factor in goal commitment (2013a, p. 7). This finding was reinforced by comments Adam made when explaining why he was able to make progress on his course preparation goal, even though he was busy. “The reason I was able to complete the first goal so [often] is because it was the most rewarding,” he writes, “*It is a very nice feeling* [emphasis added] to have lesson plans done in advance so that I don’t have to think about them at the last minute.” When teachers select goals that provide a strong emotional or psychological pay-off, they may be more likely to stick with them.
- *Concerted Planning.* Locke and Latham claim that greater mental exertion in developing one’s goals may influence commitment. They posit that “such intense processing makes people more aware of how the goal might be attained, and thus leads to the formulation of well-thought-out plans that in turn increases self-efficacy for implementation and goal attainment” (2013a, p. 8). Structures and communication that underscore the importance of careful goal development may support goal commitment.
- *Goal Clarity.* One teacher in the study submitted a highly elaborate and ambitious goal plan. She identified five broad goal areas that she wanted to work on during the semester (e.g. “consistency,” “interactivity,” “selectivity”) with action items related to each area. Her plan was weighed down by complexity. In relation to this problem, Locke offers this advice: “*Do not set too many goals for a given person or unit* [emphasis in original]. Goal overload causes everything to be lost in confusion” (Locke, 2001, p. 49).

Dual-Goal Expectancy

In addition to taking measures to increase goal commitment, teachers should take steps to help themselves feel confident that they can attain their goals, even when other commitments are vying for their attention. Research on “dual-goal expectancy” addresses this situation. Findings suggest that dual-goal expectancy, the expectation that two goals can be met in a given environment, impacts individuals’ allocation of resources. When dual-goal expectancy is high, individuals direct their effort toward the goal furthest from achievement, working to reduce the larger discrepancy. They operate under the assumption that both goals will be met. In contrast, when dual-goal expectancy is low, effort is channeled toward the least

discrepant goal, “to the neglect of the other goal” (Schmidt & Dolis, 2009, p. 686). Working in this way, they believe, will “increase their chances of meeting at least one of their goals” (p. 680).

The takeaway for teachers is that goal setting will likely be more effective in an environment in which multiple goal expectancy is high; in such an environment, energy spent on daily demands will not preclude attention to longer-term developmental goals. Factors that may impact goal expectancy include:

- *Self-efficacy.* Self-efficacy refers to an individual’s belief that he/she has the capability to achieve a specific task. A substantial body of research indicates that individuals with strong self-efficacy are more likely to stay committed to their goals in the face of challenges (Locke & Latham, 2013). Albert Bandura (1994), the psychologist who introduced the concept, maintains that self-efficacy is built, first and foremost, by “mastery experiences.” “Successes build a robust belief in one’s personal efficacy,” he writes, “Failures undermine it, especially if failures occur before a sense of efficacy is firmly established.”
Self-efficacy and success are increased as individuals tailor their goals to the nature of the task at hand. When tasks are novel or complex for an individual, or when he/she lacks requisite knowledge, *learning* goals are preferable to outcome goals. In such situations, specific, difficult outcome goals increase the likelihood of failure, which decreases self-efficacy. This is because the cognitive demands of self-regulation impede individuals from developing strategies to succeed (Kanfer & Ackerman, 1989). In contrast, setting learning goals enables individuals to acquire essential skills, which, in turn, boosts self-efficacy (Seijts & Latham, 2001, pp. 303-304). Teachers can build their own self-efficacy through setting learning or outcome goals as appropriate, given their personal characteristics, teaching background, and goal focus. The right kind of goals can provide mastery experiences that keep teachers on track.
- *Goal difficulty.* Research on multiple-goal pursuit challenges the notion that exceedingly difficult goals are the gold standard. In Schmidt and Dolis’ study, “Assignment of two difficult goals did not significantly increase total productivity across both tasks a combined . . . [T]he goal conflict created by multiple-goal assignments can undermine performance

on one or more of the tasks” (2009, p. 688). Schmidt and Dolis posit that difficult goals can backfire by lowering dual-goal expectancy, leading individuals to sacrifice the broader goal for the more immediate and attainable. They submit that *moderately difficult goals* may be a better option in a multiple-goal environment.

Research on teacher goal setting is still in its infancy. Jan Retelsdorf and Katarina Gunther maintain that more research is needed “to investigate and uncover further details on how teachers’ goals are effective in educational settings” (2011, p. 1115). This project is one contribution. Drawing off of findings on goal setting from I/O Psychology, this study begins to work out how goal setting might function for college teachers. Given that applying goal setting to particular sites and work activities “is not just a science, but also an art” (Locke 2001, p. 48), the move to incorporate goal setting into college teacher development may require some tinkering. Yet, findings from this study suggest that there is value in beginning the experiment.

The results from this study suggest that goal setting can benefit teachers, whether through spurring them to directed action or through triggering thinking that leads to self-understanding and feelings of control. At the same time, it’s clear that goal setting has to be implemented with care, with an understanding of potential challenges and a concerted effort to counteract them. Further, goal setting cannot substitute for skills and abilities that are beyond a teacher’s reach. Goals succeed as they energize and direct, encouraging skill development and perseverance. While not an easy fix, goal setting nonetheless has the potential to benefit teachers through providing a lens through which to scrutinize their teaching and the opportunity to chart their own path toward learning and improvement.

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Appendix
Mid-Semester Questionnaire

1. Identify the teaching goals you set for yourself during the goal-setting workshop, and describe your progress towards these goals. Specifically, what actions have you taken and what actions have you not completed?
2. What factors have aided your progress toward your goals? What factors have impeded your progress?
3. How satisfied are you with the progress you have made thus far? Why?
4. Based on your experience with this goal-setting project thus far, describe the strengths and limitations of using goal setting theory in teacher development programs.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I have achieved the learning goals I set for myself at the beginning of the semester.					
Setting teaching goals has helped me improve my teaching.					
Working with a peer group on goal setting has helped me improve my teaching.					
I am satisfied with the progress I have made on my goals.					
I am committed to achieving my learning goals this semester.					
This project has been a worthwhile investment of my time.					

Please use this area to explain any of the answers you provided above.

Exploring Graduate Students' Understanding of Research: Links Between Identity and Research Conceptions

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We are in an era that calls for increasing “training” in educational research methodologies. When the National Research Council (2004) calls for training in educational research that is “rigorous” and “relevant,” the focus strongly emphasizes WHAT should be taught instead of WHO is being engaged in the learning. Similarly, most of the research on teaching educational inquiry explores the “what” and not the “who” of the learning. In contrast, we explore conceptualizations of “research” as expressed by graduate students in a research methodology course, as well as the way that student narratives illustrate their own identity claims in relation to research. We develop the analytical concept of “pragmatic fissures” to explain the tension often present between the way students conceptualize research and the way they perceive themselves in relation to the research process. We suggest that these pragmatic fissures provide an opportunity for expanding pedagogical approaches to course delivery, as well as approaches to methodology textbook design. In the spirit of post-perspectives aimed at challenging the “methods” approach to research learning (St. Pierre, 2014), we welcome an opportunity for thinking about research instruction as more locally and organically connected to the lived experiences and conceptual make-up of students engaged in the learning process.

At the 2014 American Educational Research Association conference, there were several sessions that touched on the dilemmas of teaching qualitative inquiry. One of the basic challenges probably applies to any iteration of inquiry instruction in education, not just qualitative methodology: How can we provide educational opportunities that inspire and invigorate exploration without drawing on and recapitulating a formulaic cannon that reinscribes the status quo of educational research? Such concerns have been vigorously identified amongst prominent qualitative methodologists, like Elizabeth St. Pierre (2014), but have not been entertained more broadly. In fact, while there is an abundance of literature on the pedagogy of teaching research methodology, there is little critical exploration of the deeply-seated assumptions about teaching inquiry as “methods.” Further illustrating the problem, little scholarship exists on the perspectives graduate students have about “research methodology,” indicating that much of the empirical literature follows the same path: treating research methodology as a cannon of knowledge one must acquire as a graduate student independent and irrespective of student conceptualizations. This qualitative study seeks to turn the status quo inside out regarding typical approaches to study the teaching of research methodology in higher education.

As instructors of an introductory research methodology course for graduate student practitioners, we are not surprised that students’ conceptions of “research” play a pivotal role in how they approach learning methodological material. For example, we have noticed that many students perceive research as something academic experts do and not something they themselves might engage in through their daily

professional and personal lives. Thus, many of our students assume that doing research is irrelevant to their professional experiences as, for the most part, teachers, counselors, or administrators, an assumption which can undermine their motivation for learning. Furthermore, students often bring a “positivist-like” understanding of research to class and tend to hold to the idea that conducting research in the social sciences is all about numbers and experiments, which is consistent with the notion that a certain kind of expert carries out research, not educational practitioners. We argue that a better understanding of student conceptions can facilitate the teaching/learning process and help instructors better interact with students in ways that are meaningful to their own professional lives. More importantly, student conceptions are indicative of a cultural milieu, thus, being able to reconstruct the cultural “thinking” around educational research would benefit learning engagements. We agree with Lather (2006), who advocates for “teaching educational research in such a way that students develop an ability to locate themselves in the tensions that characterize fields of knowledge” (p. 47).

Typically in research methodology courses, students are exposed to a variety of different, even contradictory, ideas about what research entails, reflecting ongoing debates on the paradigms within the field of research methodology itself (Lather, 2006). Yet for practitioner-focused programs in education, discussions about these debates do not easily translate into professional action. In other words, for these students, their lived professional practice seems disconnected from what they are learning and how they think about educational research. Thus, perhaps these introductory courses (and indeed inquiry

methodology instruction writ large) could benefit from the kinds of critiques and challenges that have surfaced among qualitative methodologists. Some basic shifts indicated in the qualitative inquiry dialogue that surface as important pedagogical references include the following: (1) undermining the construction of “expertise” in the research process, (2) critiquing the “scientific” paradigm of objectivity, (3) challenging the status of “methods” in the field of methodology, and (4) thinking with theory. Each of these references positions the learner in a non-traditional space. The learner is no longer the non-expert acquirer of a methods/methodological cannon of post-positivism where the outcomes of teaching can be dictated without ever knowing the student.

These pedagogical references serve as touchstones for discussing our research project, which is aimed at better understanding student conceptualizations of research as part of the dialogic nature of the learning process. Our larger, exploratory study asks the following research questions: 1) How do graduate students in an introductory research methods course conceptualize the notion of “research?” and 2) How does participating in this course shape students’ conceptualization and understanding of “research?” In this paper we focus only on findings related to students’ conceptualizations at the start of the semester. This is because our research effort stems, in part, from re-centering learners in the methodology classroom; thus, by drawing on student essays about their conceptions as articulated during the first week of class we are able to understand their starting positions. Our analysis led us to develop the concept of “pragmatic fissure,” which describes a contradiction between the way students position themselves pragmatically in relation to the way they talk about inquiry and the substance of that talk itself. These pragmatic fissures constitute one set of starting places informing students’ entry into graduate research methodology. We discuss the implications of these fissures for developing pedagogically appropriate approaches for teaching introductory research methodology.

The primary contribution of this paper to the literature is our emphasis on the relationship between student identity and conceptualization of “research.” We contrast this with much of the existing literature on research methodology courses (and the proliferation of texts for use in such courses), which emphasize substantive content rather than focusing on students and their perspectives. We suspect that this focus perpetuates a positivist theoretical model of knowledge because these studies and texts fail to take up a dialogic relation with students’ own ways of thinking and being. Rather than ignoring these disjunctures, our study suggests they should be brought to the center. The

concept of “pragmatic fissures” thus provides us with the opportunity to relocate the content-based goals of introductory research courses within an understanding of student learning possibilities.

Empirical Milieu

Our review of empirical research on teaching research methodology courses (e.g., Ball & Pelco, 2006; Barraket, 2005; Edwards, 2004; Hubbell, 1994; Mcburney, 1995; Onwuegbuzie, Frels, Leech, & Collins, 2011; Ransford & Butler, 1982; Takata & Leiting, 1987; Tashakkori & Teddlie, 2003; Winn, 1995) reaffirms the dominance of traditional approaches to teaching and learning methodology. It shows that these studies focus primarily on the logistics or outcomes of implementing pedagogical techniques without grasping how students and teachers conceptualize “research” in the context of learning and teaching inquiry or the intersection of these conceptualizations with pedagogical dynamics. These patterns in existing scholarship affirm the need to carry out more student-centered research in the domain of teaching inquiry, in particular scholarship focusing on students’ perspectives and on those students whose interaction with research is primarily as consumers rather than producers..

There is a much smaller body of literature addressing how “research” itself is conceptualized, which includes the perspectives of students, research supervisors, and senior researchers (Bills, 2005; Brew, 2001; Kiley & Mullins, 2004; Meyer, Shanahan, & Laugksch, 2005; Pitcher, 2011). For instance, Meyer and colleagues (2005) conducted an open-ended survey to explore how doctoral students conceptualize research. Eight emergent categories, such as “information gathering” and “discovering truth,” were then systematically formulated into an instrument called Students Conceptions of Research Inventory (SCoRI). In a different study, Pitcher (2011) utilized metaphor analysis to illustrate dominant conceptions of research held by 59 doctoral students at an Australian university. Pitcher’s analysis points to four dominant metaphorical concepts characterizing the way that research is conceptualized: “research as explorative,” “research as spatial,” research as “constructive,” and “research as organic.” Beyond his description of research conceptualizations, Pitcher’s study is important in that his use of metaphor analysis provides some insight into the identity claims of respondents to his survey, though only superficially.

Other studies in this body of literature also provide implicit connections to the identity claims of those conceptualizing research. Of these, three in particular are relevant for our study. First, Brew’s (2001) phenomenographic study of 57 senior researchers yielded four main conceptions of research. These are:

- the “domino variation,” where research is conceptualized as a series of distinct, separate elements that can be combined or synthesized in different ways;
- the “trading variation,” which foregrounds the *products* of research (e.g., publications, grants, or social networks) as key elements to be exchanged for prestige or recognition;
- the “layer variation,” in which research is a process of uncovering layers underneath the surface; and
- the “journey variation,” which emphasizes the process undertaken and the transformation of the researcher through this process.

Brew also differentiated between those variations of research conceptualization in which researchers were present or foregrounded (as in the trading and journey variations where the researcher is central to the conception) and those where researchers were separated from the research process described (the domino and layer variations). In another study, Kiley and Mullins (2005) investigated how supervisors of doctoral students conceptualize research and how they perceive the relationship between their own conceptualization and those of their students. Finally, Bills (2004) utilized an ethnomethodological approach to identify the descriptive categories that research supervisors utilized when describing their conceptualizations of research. Through her analysis of focus group transcripts, Bills highlighted both the dichotomous categories of university and non-university researchers/research used by supervisors and the privileging of university research/researchers as “proper” in supervisors’ descriptions, in contrast with non-university research.

Together, these studies provide an initial understanding of how “research” is conceptualized by individuals in academic settings. However, existing studies tend to focus on established scholars or doctoral students who engage in formal academic scholarship rather than students whose primary relationship to inquiry will be from within non-academic personal and professional endeavors. Moreover, these studies are primarily descriptive in nature, and their examinations of the relationship between research conceptualizations and identity claims are implicit at best. These gaps set the foundation for our study.

Methodology

We have designed this study as a critical action research project (Fine et al, 2003) contributing to the Scholarship of Teaching and Learning practices (Cerbin, 2013; Huber & Hutchings, 2005). Action research design blurs the traditional distinction between researchers and practitioners and effectively shortens

the distance of the transformation from academic findings to daily practices (Bensimon, Polkinghorne, Bauman, & Vallejo, 2004; Fine et al, 2003). In this study, we take on dual roles as instructors and researchers, bringing the integration of our own practices and research into purview. We consider the research design *critical* in the sense that we do not take notions such as “knowledge” and “research” for granted. We aim to make students’ and our own assumptions more explicit through the reflective process of research. We also hope to explore how students’ identity claims influence their conceptualizations of “research” and perhaps their underlying motivation during learning. This aim of making the implicit explicit is best supported by a critical approach. Our methodological design is guided by Carspecken’s (1996) critical qualitative research methodology and the Frankfurt School critical theory (Habermas, 1972, 1981), which acknowledges value orientations and advances methodological implications.

Participants

Participants in the study included the four authors/researchers/instructors and 92 education graduate students at a large university in the Midwest who were enrolled in a required course titled “Introduction to Educational Research.” While this course occasionally enrolls doctoral students, most are Masters or Certificate students in the fields of school and counseling psychology, educational administration, instructional systems technology, or content areas in education (e.g. language education, art education, etc.). Most are practitioners in K-12 education, though some students (in counseling psychology and higher education administration/student affairs) work in university settings. Students were enrolled in one of four sessions of the course across the span of one academic year, including the summer. There were a total of 96 students enrolled, with 4 opting out of the study. Students were informed of the possibility of participating in the study at the start of the class by one of the researchers who was not their instructor.

Data

The formats of the classes varied across the four sections: three online and one face-to-face. Data analyzed for this particular paper included introductory essays on the meaning of research/inquiry, assigned as part of the first week’s work, and asking students to write about what research is and how they relate to it. The length of student essays ranged from 250-700 words, with most students responding in approximately 350-500 words. The data collected in all sections were read by all four authors. Data were collected after the

end of the course, with grades having been submitted, as approved by the university Internal Review Board.

The larger study, which contextualizes our discussion, includes archived class discussions and other course assignments, as well as data generated through instructor written self-reflections on our own assumptions about research, email exchanges among instructors on pedagogical issues, and notes and audiorecordings of reflective meetings regularly held among the instructors throughout the teaching process.

Understanding Students' Writing of the Assignments as a "Speech Act"

Before describing our analysis in detail, we note that central to our analysis is an engagement with our students' writings as "speech acts." Understanding these writings (or speech or any other form of communication) as "speech acts" means that we look at "speaking" as something in which individuals engage for the sake of "doing things." That is, speech acts are acts of communication that people utilize with intentions and effects in specific contexts where their actions are likely to be understood (Austin, 1975; Searle, 1965, 1969).

In face-to-face communication, understanding a speech act means taking into consideration not only the literal meaning of the speaker's words, but also tone, facial expressions and gestures, the underlying meaning she intends to convey, and the way in which the words "act" in an interaction, for example, as a request for more guidance or as a shield from questions. When this is translated to understanding the writing assignment analyzed to produce this paper, it is important to consider several factors beyond essay content. For instance, we considered impetus for the assignment and remembered that students wrote their essays both to meet a course requirement and to gain new understandings of research through self-reflection. Moreover, we considered the intended audience of the writing: the instructors. Students intended to communicate with instructors about their understanding of research, and for some of them, this assignment also served as an opportunity to establish a constructive relationship with course instructors at the starting point of the semester. Finally, we can examine this speech act in terms of intended format. In this assignment, students presented a final product in the form of an essay. While as instructors we did not explicitly require a specific writing format or genre, students knew that for an academic graduate assignment, they were not supposed to write, for example, a poem or something fictional. In our analysis, we addressed these considerations as well as the semantic content of students' responses.

In our analysis we also considered these essays as speech act that embody within them an identity claim –

an implication about the actor's identity (Carspecken, 1996). In other words, our identities are claims that we enact and present as our 'selves' in social contexts (Goffman, 1959); every time an actor acts meaningfully she is positing herself as a particular kind of person through that act (Carspecken, 2003). This understanding of identity is crucial to considering how speech acts can embody identity claims and therefore how our analysis can be used to interpret and understand student identity.

Analytic Procedures

Our analysis for this manuscript consisted of reconstructive, emergent coding of the assignment described above (Carspecken, 1996, 2008, 2009). Reconstructing involves making explicit a range of implicit, plausible understandings that actors and their interlocutors might presume to share. The hermeneutic aspect of this approach refers to the situated, interpretive process implicated in reconstructing meaning (Carspecken, 1996). This process is characterized by the act of position-taking with respect to research participants, by being reflexive about the norms upon which one depends and how they influence meaning reconstruction, and then by using this reflection as the basis for modifying impressions of meaning, continuing to reflect, modify, and so on. A hermeneutic, reconstructive approach to research is thus an iterative process that enables researchers to approximate more and more closely the way participants would also interpret their own meaningful expressions.

Our approach to coding was to reconstruct the meaning of student texts through dialogue with one another. Reconstructive horizon analysis offered us a precise way to articulate the relationship between students' understanding of "research" and their own identity claims. While in some of the essays students' understandings of their own identities were thematically foregrounded, for other students those understandings were reconstructed through the use of writing style, language, and narrative structure. Therefore, our analysis went beyond thematic content to reconstruct (not represent) identity claims, in order to examine them in relation to simultaneously held conceptualizations of research (Carspecken, 2003; Korth, 2007). For example, some students said they were not researchers and simultaneously held a conception of research as something experts did. Both aspects co-informed our analysis, leading to the interpretation that these students did not perceive themselves as being or becoming experts, or as utilizing research expertise.

We used the qualitative data analysis software platform Dedoose (SocioCultural Research Consultants, LLC.) to coordinate our coding process and outcomes.

The collaboration was an important structure of the analysis process because through it we explicitly engaged in dialogue about the meaning of the texts we were analyzing and our own theoretical ruminations. Thus, the dialogue implicit to our analysis process was brought to the foreground as we asked one another to explain, revisit, re-articulate, and affirm interpretations. In the early part of our analysis and reflection on initial coding schemes, we focused on elucidating emergent themes related to students' understanding of research, how this understanding evolved (prior to the course), and in what sense students connected this understanding to their professional practices and their own identity. Our discussions led us to identify emergent themes centered on the relationship between students' conceptualizations of research and their own identity claims. Utilizing this approach also enabled us to examine the underlying tensions between students' identity claims and their relationships to the concept of research.

Validity Concerns and Strengths

Admitting that there is much disagreement about the status of validity in research, we are of the view that validity is internal to meaning (Carspecken, 2003; Dennis, 2013; Habermas, 1981; Korth, 2002). This conception of validity was part of our approach to analysis, and we also take it up as the way to talk about the quality of the study itself.

To establish the validity of our analysis, we used peer debriefing, consistency checks, negative case analysis, strip analysis, and long term engagement with the data (Carspecken, 1996). We worked together recursively and challenged our interpretations over months, meeting regularly in pairs and as a group of four to review our interpretations. When we did not agree, we kept the disagreement alive and retained the complexity of meaning. The findings we report below will reflect those complexities.

We do not intend for these particular findings to be generalized to other student populations, though the process of looking closely at student conceptualizations might be applicable to other courses and groups of students. Primarily, we hope to spark dialogue about the link between identity and learning, conceptualizations of research, and tensions between those conceptualizations and one's identity engagements. By attending to these, we hope to contribute to a critique of methodological pedagogy as an instantiation of cannon and methods and to encourage ideas around re-centering the learner in pedagogy of research methodology courses.

Limitations

Although we believe this analysis is worthwhile and will be useful to others, it is important to

acknowledge the limitations of our findings. In particular, we believe that our findings are limited by a lack of dialogue with our student research participants about their written essays and about the accuracy of our interpretations. Ideally, we would like to be able to invite students to respond to our analysis and interpretation, and this would accomplish two things. First, from a research perspective, it would enhance the validity of our study. Moreover, such a dialogue would serve to facilitate instructor-student interaction on issues such as these that have significant pedagogical implications. Given this limitation, we want to emphasize that there is more to do in the future.

Fruits of the Analysis: Validity and Research, Identity Claims, and Pragmatic Fissures

Addressing Validity in Relation to Student Conceptions of "Research": Two Aspects

Prior to discussing student responses to the assignment prompt, we return to the concept of validity, as reconstructing students' understanding of research necessitates an examination of the underlying validity assumptions students enacted in writing their written assignments. Here we are referring to "validity" in the context of Jürgen Habermas' (1981) Theory of Communicative Action. According to Habermas, a pragmatic statement, such as the articulation of conceptions of "research" by our students, brings with it two aspects of validity:

- I. The responsibility for the actor/speaker to demonstrate that the statement is valid, which indicates that there are validity criteria presupposed by the statement through which its truthfulness might be assessed. For example, the specific claims students make related to underlying assumptions of "research" as a concept carry validity criteria such as whether or not they think that research can be valid if conducted by non-academics; and
- II. The validity assumed through the mode of expressing one's ideas about research. This aspect of validity is related to students' identity claims and is manifested in the ways in which they report their perspectives about what research is, such as using personal experience to make their point while denying that personal experience is a valid form of knowledge.

The first aspect (I) is linked most directly to the content and involves what the student takes to be valid research. For example, in our project, if a student wrote

that she understands research as so and so, and if she really means that (sincerely express her opinion), then she simultaneously bears the responsibility to defend her statement (to explain why she thinks that so and so is research) when others (like her instructor) challenge her. In other words, the student must be able to make a rational argument explaining her perspective if she is challenged. This is the first aspect of, or requirement for, validity in the student claim.

The second aspect (II) is entailed in the pragmatics of the communicative act. To use the same example, when this student makes a series of statements regarding research, the statements will proffer certain (usually implicit) assumptions about validity criteria based on which this student would consider a statement about “research” to be valid. These assumptions constitute the second aspect of validity. Some examples of this would include whether a certain way of articulating research is valid, such as using formal language versus personal narrative, and what assumed relationship to research is being manifested through the narrative mode chosen by the writer, such as writing in third person or writing in the first person.

While the first aspect of validity can be reconstructed primarily from thematic meanings in the text, the latter aspect of validity is mostly backgrounded in student responses and requires a different analytical approach. To exemplify this, take the case of a student who has written in her essay that “research should be objective,” but she has also written in a narrative way about how her various life experiences have led her to this understanding. In this case, she is simultaneously claiming that objective research is valid while also claiming that her personal experiences played a legitimate role in the formation of her conceptualization of “research.” Grasping both of these aspects requires approaching the essay in an integrated manner that takes into account things like its narrative structure and the formality of language used, in addition to semantic content. Together, the two aspects of validity comprise this student’s holistic understanding of “validity” in relation to her conceptualization of “research.”

Since these two aspects of validity claims always exist simultaneously in student responses, ideally they will complement or corroborate one another. However, across our data we see a large degree of tension or disjuncture between these two aspects of validity claims. This tension can be seen in the example above of a student who claims that research should be “objective” but uses narrative form to discuss her personal experiences. Although the student would not be expected to write *as a researcher* in this assignment, a discussion of personal experiences that positioned the student as a researcher or potential researcher would be expected to complement the manner in which research itself was conceptualized, in this case, in an “objective”

third person statement. The tension between these two aspects of pragmatic validity in this student’s speech act suggests a conflict between student’s conception of research and the identity positioning of the student toward research.

Conceptualizations of Research and Student Identity Claims: Exploring the Tensions

In this section, we describe patterns in students’ conceptualizations of research that emerged from our data, as well in students’ positioning of self in relation to those conceptualizations. In particular, we highlight tensions between the two elements of validity discussed above. It is important to note that these patterns are not exclusive; indeed, there were overlaps among them in many cases. The emergence from our data of these four “ideal types” (Weber, 1925) of understanding research, however, serves as the foundation for developing the theoretical concept of pragmatic fissures.

Research as a Means of Problem Solving

For the largest group of students (48 out of 92 participants), research is presented as a way to “solve a problem,” “answer a question,” or “gather information.” In students’ descriptions of research, the term is thus conceptualized as externally oriented. Research is deemed as an act or intervention carried out by a researcher, a means to solve problems through discovering, accumulating, and evaluating knowledge. Research perceived in this way is also linked by students (in their essay responses) to a process with “a series of steps to be completed” or structured steps or procedures toward achieving the intended goal. Both the goal and the steps to reaching it are sufficiently known prior to engage with the process itself and are discrete enough to be articulated.

With this conception in mind, students often position themselves as problem solvers in relation to the act of research. In fact, some students provided concrete examples that occur in their everyday life (for instance, doing Google research before buying a product or collecting information to assist decision making) to explain their definitions of research. As one student put it, “I now can research anything I want at my fingertips. Broadly, I believe research to be a quest for further knowledge about a desired topic. We research everything: products to buy, vacations to go on, job descriptions.” These students drew a parallel between the act of research and every day acts in terms of their shared *purposive* action orientation: in other words, they see themselves as individuals who are a part of the research process. In the words of one student, “It’s really been since... I returned to academia as an employee that my opinion has be[en] pushed to ‘the

other side' by my experiences. I see on a daily basis the holes in what I know, and I finally have developed a thirst to fill them. My world is a constantly evolving one, and I'm excited it now has room for interest in things like 'research.'" Another student wrote, "Research is not that unapproachable. Everyone can design and conduct research. And even, research shares the similar logic with the process of problem solving in our daily life." Yet, as this latter example suggests, students describe the "act of research" as a "formal" process, whereas the latter process (problem solving in every day life) is "informal." Thus, we see a contrast between the "informal" activities undertaken by students and the "formal" activities that constitute valid research, suggesting a tension or disjuncture between how they understand research and how they position themselves in relation to it. In other words, students position themselves as problem solvers in informal settings but not researchers in formal settings. In claiming this subtle position, the students identify with certain aspects of research shared by those in both formal and informal settings, such as the genuine curiosity about certain issues and its problem-solving orientation, but they distance themselves from other aspects of formal research from which they feel excluded, and perhaps even alienated.

Here is another example of a disjuncture between conceptualization of research and student identity, in relation to research as problem solving. One student noted, "When researchers have questions they want to answer, they need to go through research to substantiate the answers that they find. Research provides the evidence or proof of how the individual came to their conclusions in answer of the question that was guiding their search." This student further noted the following:

"I would often say as a teacher that 'I may not have any published research, but here is what my students have taught me works for their individual learning'... followed by a story of what I had discovered worked for the learners in my care. I believe everyone has learned something new based on experience (many times due to a curiosity that an individual may have), but we often times don't justify or substantiate our findings through a formal research process."

With this statement, s/he positioned him/herself as making the identity claim, "I am a researcher, but not in the sense of formal research." Instead of grounding formal research in everyday life, this student sees formal research as something distant from her everyday experiences.

Research as a Form of Expertise

A second conceptualization of research (held by 9 participants) was as a form of expertise requiring specialized knowledge and skills. Students who described research in this way perceived researchers to

be experts who receive specific training in reading literature, writing academic papers, and developing knowledge in statistics. For instance, one student noted that research was a "serious" endeavor with "more opportunities to mess things up." In this way research becomes a "profession" for the experts in the academic domain. Graduate school training provides the opportunity for individuals to develop necessary levels of "expertise" and to be socialized into this profession.

Students who conceptualized research in this way tended to position themselves as outsiders in relation to the profession, or at least novices standing at the edge of the professional boundary. With this positionality, many students expressed feelings of "intimidation," or cynicism toward the identity of being an expert. For example, one student commented that research constitutes "an academic process that requires enormous amounts of talent, time, and effort in hopes of boosting one's reputation in the overly competitive world of academia." The language utilized to describe research in this example—specifically, use of negative tone as indicated by the phrase "overly competitive world"—illustrates the way this student positions herself as an outsider to the "world of academia" and the research process that occurs within it. When taken in contrast with the relatively neutral language used at the start of the student's sentence, stating that research is an "academic process," this example serves to highlight the insider/outsider tension between student conceptualization and student identity, in other words, the tension inherent in the requirement for researchers to be experts, whereas the student is not.

Here the tension is more stark than was presented in the conceptualization of research as problem solving, where there is a possibility for students, even those who see themselves as outside of the world of those conducting "formal" research, to take part in "informal" elements of problem solving and information gathering. Another student noted, "I think of research as something that scientists, people in think tanks, or people with PhDs do," and continued, "I have so rarely done intensive research that the concept still seems a bit foreign to me, a bit undefined." This example, too, suggests that the student sees him/herself as standing apart from the research world – in particular, not having the expertise to even fully define what research constitutes.

Research as Science

A third type conceptualizes research as science and presents it as a process of testing hypotheses, or acquiring evidence to prove or disprove certain beliefs (21 students held this perspective). Such a conception of research is based solely on a scientific worldview and rationality in which the researcher always takes a universal third-person position to examine the

truthfulness of a claim about a phenomenon. This conceptualization may be thought of as a specialized form of the conceptualization of “research as expertise,” with an emphasis on a specific type of knowledge.

Students who conceptualize research in this way often focus on the position of a scientist in relation to research. Their conceptualizations emphasize the notions of “objectivity,” “scientific methods,” “numbers,” “experimentations,” quantitative methods, and statistics. One student described research specifically as “the pursuit of information through the scientific method.” With respect to this conceptualization of research, our data indicates both complementary and mutually exclusive student identity claims. For instance, the identity claims emergent from the assignment of one student who was raised by two parents working in professions related to natural sciences, and who also was an undergraduate researcher in a university-based laboratory, suggests that he perceives himself as someone who is both comfortable with, and who can be a part of, the research process (defined primarily as scientific). On the other hand, another student with a similar conceptualization of research described herself as being “overwhelmed” by the scientific research process when encountering it in an undergraduate class; her narrative presented her position as being “intimidated” by the research process. The insider/outsider dynamic discussed with respect to other conceptualizations of research is thus present here as well, although in this case the tension revolves around familiarity and comfort with the scientific process, something that for some students has been garnered through previous experience and in one instance was mentioned as a goal to be achieved through the research methodology class in which they were enrolled. In other words, students’ positionality vis-à-vis research, when it is presented as “science,” is based upon exposure to the research process and to situations where the scientific method is utilized, which position students either as an insider or outsider.

Research as a Situated Practice

Finally, 3 students discussed research in terms of it being a practice situated in a community of researchers (i.e. the process of peer review and critique in the public domain). We include this perspective here to illustrate the range of conceptualizations. For these students, research entails a communicative action that involves more than one actor and is examined based on certain norms and standards created by a community of researchers. For instance, one student noted, “Sharing the results with the scientific community is an essential part of research.” The objectivity and the validity of research can be confirmed by others within the community by the discussions and further explorations

of the topic by others in the field.” Another student wrote, “Getting as many viewpoints as possible is another aspect of research. This can help in discovering confounding variables or just giving you a fresh look might help you to look at your research in a way you never thought of before.”

In contrast with the other conceptualizations, this perspective places less of a focus on outcomes or technical knowledge, but rather brings the researcher towards the center of the research practice and requires an ability to reflect on the practice itself. Students who conceptualized research in this way did not position themselves as outsiders but rather as part of a community, even if they see themselves at its periphery in this stage of their lives. This can be seen in the essay response of a student who wrote, “Another aspect of research that I find to be especially significant is that the process of research is cyclical in nature. In other words, research is never “finished.” There are always unanswered questions and researchers are always curious... As we continue to discover new and improved methods of obtaining data, research fields will continue to grow.” Here the use of “we” to refer to the research process suggests that the student sees him/herself as part of, and capable of moving closer to the center of, the research community. A few other students also used “we” and “our” in their statements, signaling identification with the research community, for instance: “Our assumption about reality and our knowledge are going to affect the methodology we adopt” and “...research is what we do to find answers to questions: What are things like? Why are they that way? What would happen if we made a change?” Notably, however, this conceptualization stands in critical relation to the others in the degree to which it was expressed – very few students described research in relation to a community of researchers *or* used language that positioned themselves within the research process or community.

Exploring Pragmatic Fissures

Our analysis of research conceptualizations and identity claims helps us to grasp how identity claims relate to student understandings. Sometimes we grasped tensions or disjunctures between identity claims and students’ conceptualization of research, and other times we noticed that the relationship between the two assumed one of continuity and complementarity. In this manuscript our primary focus is on the disjunctures, due to the pedagogical insights these disjunctures can provide to us as methodology instructors. We discuss pedagogically relevant examples of pragmatic continuity as well.

Returning to the example of the student who understood research as “objective,” in her response,

recall that she had concluded that she herself is a practitioner rather than a researcher. Most of our students thought this way. The tension between how she sees herself and how she views research provides an explanation for the disjuncture in narrative form and content: the reason why she distances herself from research may be due to the distance she feels from being part of it in relation to the way she conceptualizes its validity. In other words, this student is a practitioner, and it is okay for a practitioner to use narrative form to talk about her understanding of research. Yet, on the other hand, her understanding of research as “objective” and formal may also function as a barrier that impedes this student from identifying herself with research and the research process.

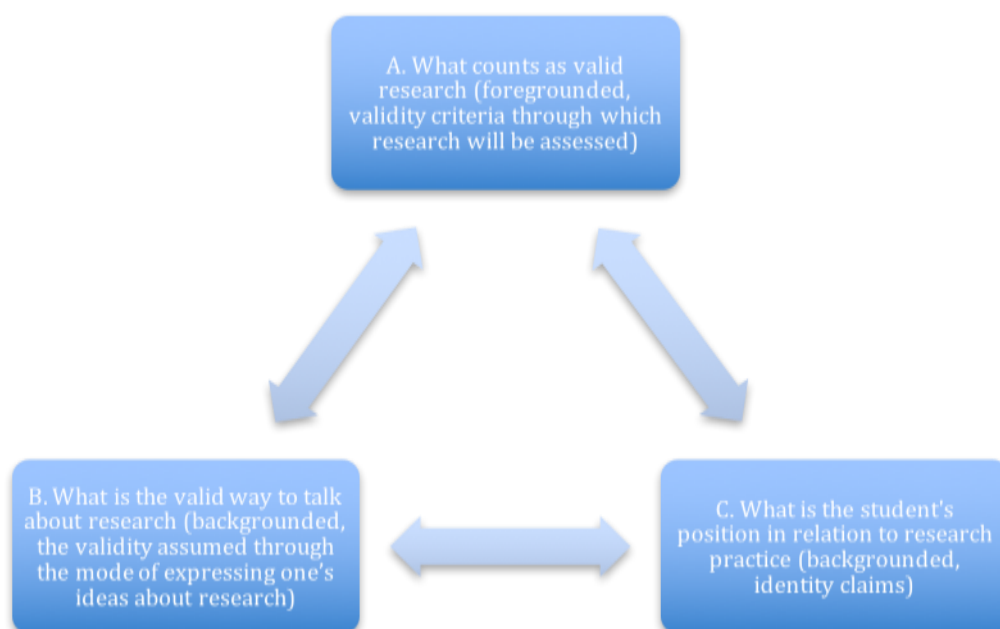
Another example of this tension can be seen in the words of the student who wrote, “I think of research as something that scientists, people in think tanks, or people with PhDs do.” This constitutes a claim about the nature of research, reflected in the content of the essay response. Yet there is a disjuncture between this statement and the student’s continued response, “I have so rarely done intensive research that the concept still seems a bit foreign to me, a bit undefined.” This tension is present not only in content, but also in the nature of language utilized in the narrative: whereas the initial statement is declarative and presented with confidence, the student’s later comment suggests uncertainty

through the use of terms such as “a bit” and “undefined.” The linguistic differences between the first and second statements reflect the tension between the student’s conception of research and his or her own sense of identity in relation to it.

This tension between the two aspects of validity elucidated in student conceptualizations of research and their own identity claims exemplifies the concept we refer to as “pragmatic fissures.” Specifically, these fissures lie at the intersection of the two aspects of validity and students’ own understanding of their identity. We suggest that they are “pragmatic” fissures both because they reflect a pragmatic element of students’ communicative acts, as discussed above, and because we see these tensions as having practical ramifications for learning. These fissures open spaces for teachable moments by allowing us to consider different pedagogical approaches that might enable a broadening of student perspectives on research and themselves as researchers, while still respecting the identity claims that they express.

In considering the concept of pragmatic fissures, it is helpful to think about the relationship of the three theoretical concepts discussed in this paper (what constitutes valid research, what constitutes valid ways of discussing research, and how do students perceive themselves in relation to research), as presented Figure 1.

Figure 1
Interrelationships Between Research Validity and Identity Claims



A careful examination of these relationships suggests that pragmatic fissures in fact exist at multiple levels and that pragmatic continuity may also provide a space for pedagogical engagement. In our opinion, the complexity that the fissures reflect is intellectual material worth engaging. First, in examining the relationship between A (valid research; validity aspect I) and B (valid ways of discussing research; validity aspect II), we found the pragmatic fissures when our analysis went from the content/foregrounded level of “what is counted as valid research” to the deeper, pragmatic/backgrounded level of “what are valid ways to talk about research.” Specifically, fissures were expressed as a disjuncture between the content of student responses and the modes of expression utilized to articulate student thoughts. As noted above, the fissure was not present in all student responses; however, it is a salient fissures for many of them.

Second, we examined the relationship between A (valid research) and C (student identity claims). Our analysis suggests that while there are fissures here, they do not always lie at a disjuncture between students’ understanding of research and their own positionality. The reason is that, for example, if a student believes that research is valid only if it is conducted by experts and then he claims that he is not an expert, there is no semantic incoherence. He first defines valid research and then counts himself as someone who cannot do valid research. However, although this student defines himself as an outsider of the research according to his own definition of research, he has to stay in the classroom to study how to do research. Here, therefore, there is a fissure at the level of action orientation, as opposed to the expression-related fissure discussed above.

In our analysis, we did note some connections and coherence between A&B and A&C, but it is the disconnections/tensions between them that drew our analytic attention. However, in terms of the relationship between B (valid ways of discussing research) and C (student positionality vis-à-vis research), which are both backgrounded, there might be some coherence that deserves attention. For example, there are many examples in our data of students who believe themselves to be outsiders to research, using modes of expression inconsistent with their foregrounded understanding of valid research (say, a narrative form) to express their ideas about research, but we seldom see students who believe themselves to be research outsiders expressing their understanding of valid research using a mode of expression consistent with that conceptualization or understanding. That is to say, students may implicitly understand certain modes of expression as non-research-oriented (for example, narrative forms of expression), and utilize those modes as ways of highlighting the tension between their perspectives regarding valid research and

their own claims as non-research-oriented individuals. Here, therefore, it is the congruence between a student’s positionality and understanding of what constitutes valid modes of discussing research that opens up possibilities for pedagogical innovation and course instruction as a whole, as we discuss in the section below. Coherence across backgrounded claims is interesting, and the disconnect between backgrounded and foregrounded claims might be a site for further exploring the pragmatic fissures that have caught our attention.

Discussion and Conclusions

As a whole, the four conceptualizations of research presented in this manuscript—problem solving, expertise, science, and as a situated practice—reflect a tension between externally- and internally-oriented views of research. In particular, the concept of research as problem solving emphasizes an external or product-focused orientation in which research is assumed to exist outside of the researcher. This concept aligns with what Brew (2001) refers to as the “domino variation” of research conceptualization, particularly with respect to considering research as a series of steps or elements to be synthesized, as well as (to some degree) with Pitcher’s (2011) metaphor of “research as constructive.” It can also be linked to what Weber described as purposive action, or in Habermasian terms, instrumental action: action undertaken in order to achieve a specific end (Habermas, 1981; Merton, 1936; Weber, 1925).

The concept of research as science also reflects an external orientation: the emphasis here is on a series of objective steps that make up the research process, independently of the researcher herself. In contrast with the concept of research as problem solving, however, conceptualizations falling into the category of research as science are process-oriented rather than product-oriented. In other words, this conceptualization focuses on the steps undertaken as part of conducting research rather than on the end result. This conceptualization best aligns with the description of research as “analytical and systematic inquiry” as categorized by Meyer and colleagues (2005). It is also closely related to the conception described above of research as expertise, particularly in the sense that the expertise referred to is primarily expertise in the specialized set of skills that are part of the systematic research process. However, there seems to be a salient difference between these two conceptualizations with respect to how students see themselves in relation to research. Students describing research as science are aware (at least in a general sense) of the steps that make up the research process; while they may not view themselves as individuals who engage in that process, this separation of self from the research process,

according to student essay responses, seems to be due to lack of exposure or training.

On the other hand, although “research as expertise” also entails exposure to, and facility with, specialized skills, this conceptualization seems to emphasize an internal characteristic that is not present in the conceptualization of “research as science.” In other words, the expertise gained through training as an academic or formal researcher is presented as something that these students – graduate students who are not going into academia but who see themselves primarily as research consumers – are not doing themselves. While students may have some exposure to research and may have even conducted research as part of their undergraduate or graduate courses, they do not see themselves as having sufficient skills or having been socialized into an identity that positions them as a part of the research community.

In contrast, the concept of research as a situated practice does not place students conclusively as insiders or outsiders. While students did not necessarily utilize language in their responses that placed them within the community of researchers, their responses, both in content and tone, were not characterized by the stark insider/outsider dichotomy emphasized in those conceptualizing research as “expertise.” On the other hand, the conception of research as expertise is similar to the conception of research as situated practice in the sense that, like the “journey” and “trader” variations described in Brew’s (2001) study, it is not characterized by an external or product-oriented orientation. The conception of research as situated practice, in particular, emphasizes the idea of research as a process that is undertaken by a community and that is cyclical rather than a linear or step-by-step process in which an individual researcher moves from initial question to knowledge building. In this sense, it can be characterized as an example of what Habermas (1981) refers to as communicative action – action oriented towards achieving understanding. In other words, unlike instrumental or purposive action-based conceptualizations of research, this conceptualization emphasizes the inter-subjective nature of knowledge building and the necessity of communication as part of the research process.

What are the implications of these specific conceptualizations? First, we note that the tensions between conceptualizations and accompanying identity claims implicate the surrounding social and cultural milieu that socialize students into certain beliefs about research. Specifically, the conceptualization in our student responses of “research as expertise,” along with the accompanying identity claims positioning students as outsiders to this form of research (a positionality nearly universal among those students conceptualizing research in this way) suggests that there are norms that

socialize students into believing that research must be conducted in a university setting, by research experts, often using a specific method (hypothesis testing), in order to be considered valid.

The seeming socialization of individuals into believing that only certain forms of research are valid is perhaps a reason for the existence of the “pragmatic fissures” we discuss above. As such, we suggest that a second implication of our analysis is its significance in terms of pedagogy for teaching research methodology. Specifically, we would like to suggest that it is important to understand “pragmatic fissures” as a pedagogical opportunity instead of a problem. Identifying these fissures is an important first step that can provide insights into our students’ thought processes and, therefore, opportunities for us to make pedagogical changes that improve the effectiveness of research methodology instruction. It provides us, as instructors, with a space where we might be able to integrate students’ positionality or identity claims into the content and structure of research methodology courses in a way that respects student identities, but ideally also allows them to develop broader conceptualizations of research and the research process.

At a concrete level, integrating learners pedagogically means, first of all, undoing methodology courses as perpetuating canons of knowledge. Instead, we suggest that an introductory methodology course can serve as a critique of, and engagement with, the concept of “research,” including as it is related to conceptualizations in the cultural context as a whole, to make the content more relevant.

Concretely, using the concept of “pragmatic fissures” also means considering in what forms or in what contexts research *is* relevant to our students. In our own classes, we emphasize the importance of practitioner-focused and non-traditional forms of research, *alongside* but not replacing discussions that focus on specific research techniques or steps in the research process. In other words, we try to help students find elements of the research process with which they can identify, regardless of whether this is research as a hypothesis testing endeavor in an academic setting or not. For instance, as many of our students are K-12 teachers, we discuss informal and formal classroom assessments as research tools that help generate usable knowledge; we similarly consider tools our counseling students can use to improve their practice. We also integrate into both readings and class discussions/activities materials that are not scholarly in nature but highlight research as it is both practiced and written about in a wide range of settings outside of academia: for instance, survey results as they are presented in popular media or evaluations carried out in organizational contexts. We also work to help students begin questioning the social norms around the

infallibility of numerical data—for instance, by having them engage in activities requiring interpretation of “unclean” data sets—in the hope that critiquing norms around certain elements of research can help dismantle a belief that “valid” research is immune from individual interpretation. Importantly, we do not discount the importance and relevance of specific skills; however, we try to help students understand that these skills are useful in a range of settings and that research itself is broader than what they often think of when they first enter our classrooms.

In addition to the concrete steps outlined thus far, we suggest that the very act of acknowledging and discussing the concept of pragmatic fissures with our students can help shed light on the way that research is inextricably linked with identity as well as with broader socio-cultural norms. Asking students to reflect on how they conceptualize research and on what in their own background or experiences has shaped that conceptualization—as we did in the assignment serving as the basis for this manuscript—is a necessary step, but only a first step, in helping elucidate these connections. Additionally, by reflecting on potential sources of tension and congruence between students’ conceptualization of “research” and their own research positionality, it may be possible to begin dismantling taken-for-granted assumptions about research. Indeed, close attention to both fissures and congruence between students’ conception and experiences as they are recognized in class discussion and assignments can afford ongoing opportunities to enhance student learning and engagement. Lastly, opportunities for looking closely at the relation students assume with research may have relevance for students outside the classroom and allow for a shift in their engagement with research in professional settings as well.

Beyond our own instruction, we suggest that the concept of pragmatic fissures is an important one for improving the teaching of research methodology in university settings as a whole, not only in terms of pedagogical techniques, but also in relation to methodology texts. Most existing textbooks (Creswell, 2012; Frankel & Wallen, 2009; Gall, Gall & Borg, 2006; McMillan, 2011) privilege discussions of research *methods*, which are often conflated with methodology and methodological approaches. This is accompanied by a minimal or lack of focus on the philosophical and theoretical foundations of research methodology, which serves to reduce research to a set of steps or techniques that must be followed in a linear manner. As such, existing texts reinforce a certain conception of research that might disengage students whose own conceptions do not align with what is written in the textbook; the way research is presented in these texts can also reinforce a sense of alienation or exclusion from the research process for some students.

Ultimately, therefore, we encourage instructors of research methodology and writers of research texts to take a more inclusive view when presenting the concept of research to university students.

Finally, from a methodological standpoint, we also wish to note the importance of a holistic, pragmatic analysis for highlighting the presence of pragmatic fissures in speech acts (in this case, in written student responses to an assignment prompt). As discussed above, our own analysis is based not only on thematic or semantic content, but also on writing style, narrative structure and form, and language. With only a thematic analysis, our ability to uncover implicit meanings is limited to what is directly stated in the text. In fact, this analytical approach alone may pose risks that limit our understanding of students’ conceptualization within the scope of positivism, the very limitation that we try to move away from in our teaching. In contrast, a reconstruction of the way the two aspects of validity are implicated in students’ textual performances and involving their own positionality vis-à-vis the research process necessitates an ability to draw out deeper, backgrounded, often very implicit claims.

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Dismantling the White Supremacy Embedded in our Classrooms: White Faculty in Pursuit of More Equitable Educational Outcomes for Racially Minoritized Students

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An investigation of the literature revealed that racial consciousness and the behaviors of White faculty in the classroom appeared linked. A conceptual framework, *Racial Consciousness and Its Influence on the Behaviors of White Faculty in the Classroom*, was subsequently developed and tested in this constructivist grounded theory study. Findings indicate that White faculty with higher levels of racial consciousness employ behaviors in their classroom reflective of an expansive view of equality in their pursuit of social justice, which they consider synonymous with excellence in teaching. Moreover, these findings illustrate what perceptions White faculty hold about higher education's responsibility in the facilitation of social change. This research bears great significance to higher education research and practice, as it is the first of its kind, in the education literature, to utilize critical legal scholar Kimberlé Crenshaw's (1988) restrictive and expansive views of equality framework to empirically measure and describe excellence in college teaching.

Using a critical race theory (CRT) lens, an analysis of the literature was conducted to explore the relationship between racial consciousness and the behaviors of White faculty in the classroom. Findings from that analysis revealed racial consciousness and faculty behavior appeared linked (see Haynes, 2013). Literature review findings also suggest that white self-interest has some influence on that relationship (see Haynes, 2013), but the extent to which could not be explained. Those findings inspired the researcher to construct the conceptual framework, *Racial Consciousness and Its Influence on the Behaviors of White Faculty in the Classroom*, that was tested in this study (see Appendix A). Racial consciousness, from this perspective, is described as "an in-depth understanding of the racialized nature of our world, requiring critical reflection on how assumptions, privilege, and biases about race contribute to White faculty's worldview", perhaps also informing how they approach their classrooms (Haynes, 2013, pp. 50-51). Faculty behavior characterizes the two most compelling aspects of faculty work inside of the classroom: course design and instruction (Ramsden, 2003). With intent to explore the role White faculty believe they play in the dismantling of the white supremacy embedded in their classrooms in pursuit of equitable educational outcomes among racially minoritized students, this qualitative study utilized a constructivist grounded theory approach to generate a theoretical explanation for racial consciousness influence on the behaviors of White faculty.

An examination of the classroom prioritizes the responsibility, effectiveness, and preparation of faculty in promoting academic achievement for an increasingly diverse student population (Applebaum, 2004; Ladson-Billings, 1995; Lowenstein, 2009). Though all faculty should be aware, White faculty are identified as the population of study in this research. White faculty make

up the majority, 79%, of all faculty in the United States (U.S. Department of Education, 2012). Moreover, White faculty, whether consciously or unconsciously, are also less likely to interrogate how race and racism both privilege them within the academy and influence their faculty behaviors (Gordon, 2005; Shadiow, 2010).

Because faculty can make some students feel insignificant through their selection of educational material and teaching style (James, 1994), the cultural differences between them and their students must be explored. But the majority of faculty report that their faculty preparation has not prepared them to address the emotionally and socially charged issues that emerge in the classroom or shape classroom climate (Bell, Washington, Weinstein, & Love, 1997; Haynes & Joseph, 2016; Wing Sue, Capodilupo, Rivera & Lin, 2009). In cases where these faculty are White, assumptions about race and its influence on their classroom teaching are often left unexplored (Skrla, Scheurich, Garcia, & Nolly, 2004). When White faculty resist confronting such assumptions, they can simultaneously abandon the needs of their racially minoritized students, reinforce white racial knowledge, and dismiss the effects of racism to maintain white innocence (Galman, Pica-Smith, & Rosenberger, 2010; Leonardo, 2008). The result of this cyclical, highly cemented process suggests there is a relationship between racial consciousness and a White faculty member's ability to employ behaviors in their classroom that promote equitable educational outcomes for racially minoritized students.

Study findings indicate that White faculty with higher levels of racial consciousness employ behaviors in their classroom reflective of an expansive view of equality in their pursuit of social justice, which they consider synonymous with excellence in teaching. Moreover, these findings illustrate what perceptions White faculty hold about higher education's

responsibility in the facilitation of social change. This research bears great significance to higher education research and practices, as it is the first of its kind, in the education literature, to utilize critical legal scholar Kimberlé Crenshaw's (1988) restrictive and expansive views of equality framework to empirically measure and describe excellence in college teaching.

Critical Race Theory

Critical race theory (CRT) emerged from critical legal studies as a means to problematize and theorize the role that race and racism plays in education, politics, the economy, legal matters, and everyday life (Crenshaw, Gotanda, Peller, & Thomas, 2000; Delgado & Stefancic, 2001; Ladson-Billings & Tate, 1995; Solórzano, Ceja, & Yosso, 2000). To understand, examine, and address to the enduring racism in educational policy and practice that protects white supremacy, critical race theorists employ six central tenets (Dixon & Rousseau, 2005; Harper, Patton, & Wooden, 2009; Solórzano, Ceja, & Yosso, 2000): (a) racism is endemic to American culture; (b) rejection of dominant narratives, processes, or systems that claim race neutrality, colorblindness, and meritocracy; (c) racism has deeply rooted origins that attribute White people with dominant status and non-White people with subordinate status; (d) the voices and lived experiences of people of color are legitimate and used to generate oppositional discourses; (e) recognition of interest convergence, which describes the conditions by which racial justice will be accommodated in a white power structure; and (f) racism's eradication is tied to eliminating all forms of oppression. Though, two in particular were used to frame this analysis.

In congruence with the first tenet of CRT, which argues that racism is endemic to American culture, the classroom therefore, like all racialized structures, cultivates white supremacy (i.e., normalcy, advantage, privilege, and innocence) through the perpetuation of structures, processes, and traditions that reinforce racial subordination (McFarlane, 1999). This idea is further explored by Bonilla-Silva (1997), who argued that the racial group placed in the superior position within a racial structure (i.e., White people) (a) receives primary economic, social, and political positioning; (b) is granted higher social attributes (e.g., smarter or more beautiful); (c) has the privilege to draw physical (segregate) and social (racial etiquette) boundaries between themselves and the other races; and (d) is allotted a "psychological wage" (Du Bois, 1935, 1992), which bestows respect to those who are loyal to oppressive practices that secure the group's racial superiority.

Though the fifth tenet of CRT illuminates the intrinsic connection between the pursuit of more equitable educational outcomes among racially

minoritized students and behaviors of White faculty (or what's in one's own best interests). Interest convergence also illustrates how the interests of racial minoritized populations can be undermined by white interests (or the self-interests of White people) (Dixon & Rousseau, 2005; Harper et al., 2009; Solórzano et al., 2000). In his analysis of the circumstances and implications surrounding the renowned *Brown v. Board of Education* case, Bell (2004a) posited that the *Brown* decision was an illustration of interest convergence. The interests of Black people in achieving racial justice were accommodated only when, and for so long as, those interests converged with the political and economic interests of White people (Bell, 2004a, 2004b; Tate, Ladson-Billings, & Grant, 1993). But it was in their evaluation of the failures of *Brown* that Tate and colleagues (1993) employed a framework devised by Crenshaw (1988) that explained two distinct perspectives in antidiscrimination law: the expansive and restrictive views of equality. These two perspectives, Crenshaw (1988) noted, exist alongside one another and illuminate the inherent tension between equality as process and equality as a result.

An *expansive view of equality* in antidiscrimination law emphasizes equality as a result. Its effectiveness is measured by the substantive shift in the social conditions (e.g., educational outcomes) of Black people, requiring that the root causes of racial injustice be eradicated. A *restrictive view of equality* treats equality as a process, minimizing the importance of social conditions (e.g., educational outcomes). A restrictive view of equality in antidiscrimination law, therefore, seeks to prevent future wrongdoings, which tend to be treated like isolated incidents. Moreover, any redress of racism in a restrictive view of equality is balanced against the self-interests (e.g., preservation of white innocence and/or material benefits) of White people (Crenshaw, 1988). An overview of the study's methodology and research design follows in the next section.

Methodology and Research Design

Because graduate faculty far more frequently explored how race and racism influenced their classroom teaching in relevant literature, White undergraduate faculty were identified as the population under study to bridge a gap in scholarly discourse. This constructivist grounded theory study was conducted at Frontier Range University (FRU), a private liberal arts institution in the Rocky Mountain region of the United States, with 640 instructional faculty. The study's setting also dictated that this analysis explored race, racism, and educational inequity in U.S. higher education. Though while beyond the scope of this study, the relevance of examining the educational inequity that persists in higher education across racial

and ethnic groups globally are addressed in the implications section.

Constructivist Grounded Theory

Appearing comprehensively for the first time in Glaser and Strauss's *Discovery of Grounded Theory* (1967), the grounded theory method (GTM) remains a readily sought after approach to qualitative research and is useful in the construction of inductive theory (Backman & Kyngäs, 1999). Two paradigms exist in grounded theory research: objectivist and constructivist approaches. Where *objectivist grounded theory* assumes that the research process reveals a single reality that an impartial observer discovers through value-free inquiry, *constructivist grounded theory* assumes that the data collection and analysis process are social constructions that illustrate the researchers' and the participants' experience in the research process and with the phenomenon (Charmaz, 2002, 2006). The constructivist approach to grounded theory (CGT) was chosen as the methodology for this study for its alignment with Crenshaw's (1988) restrictive and expansive views of equality framework: both prioritize the exposing of power hierarchies that perpetuate differing experiences between and among people (Bryant, 2002; Charmaz, 2006). Further, CGT, through its complex process of data collection and analysis, enabled the conceptual framework developed using literature review findings to be tested, as means of generating a theoretical explanation for racial consciousness' influences on the behaviors of White faculty in the classroom (a delimited problem) (see Glaser & Strauss, 1967).

Each of the key features of grounded theory research—the constant comparative method of data analysis, theoretical saturation, theoretical sampling and theoretical sorting—were employed. The constant comparative method (CCM) is embedded within (and across) the data collection and analysis process. CCM enables the researcher to derive rich meaning from their data (Coffey & Atkinson, 1996; Lewis & Ritchie, 2003). Additionally, the CCM allows code

categories to be formed, organized, and bound (Boeije, 2002). Theoretical saturation suggests that the researcher has found no new data that informs the construction of their code categories (Charmaz, 2000). However, when there are unexplained or underdeveloped (i.e., lack of saturation) properties within a category, a researcher can engage in theoretical sampling to help fill the gaps (Charmaz, 2000, 2006). Theoretical sampling is imposed to refine ideas, not to increase sample size (Charmaz, 2000). Finally, theoretical sorting of analytic memos generated by the researcher, and their subsequent integration into the analysis, should reflect the researcher's empirical experience in the field (Charmaz, 2006). Theoretical sorting can also result in the researcher diagramming their findings to illustrate and critique the relationship between theoretical constructs (Clarke, 2003, 2005), as done in this study (see Appendix A and D).

Research Design

This study's research design included four modes of data collection. The first was the distribution of a campus-wide survey. This original instrument contained open-ended questions that were tested for construct validity, piloted, and sent via email to all instructional FRU faculty. Inviting all full-time instructional faculty (approximately 640 people) to complete the survey allowed data to be collected from much a larger sample of participants initially.

Purposeful sampling measures were imposed on the survey data to identify a more representative group of faculty who met participant criteria, as means of recruiting for the next round of data collection: interviews and classroom observations. Participants had to self-identify as White (non-Hispanic) and be employed full-time, regardless of faculty status, rank, or program affiliation. Of the 21 faculty who met the participant criteria, 12 indicated that they were interested in continuing with the study through the next phase of data collection (see Appendix B). Table 1 includes demographic information relevant to that sample.

Table 1
Demographic Data from the Survey: Reflective of the Most Respondents in Each Category

Total # of Respondents	Gender:	Years Teaching at College	Faculty Status:	Faculty Rank:	Academic Discipline:
21	Female 12 (57%)	6-10 years 7 (33%)	Tenured 9 (43%)	Associate Professor (including Clinical and Research) 10 (48%)	Arts, Humanities, and Social Sciences 12 (57%)

Note. Sixty participants completed the survey in total. Only 21 eligible respondents remained, after filtering the data by the participant criteria.

Each participant completed a 90- to 120- minute initial interview. Theoretical sampling was imposed to narrow the sample even further, after initial interviews, to an $n=6$. The quality and variance, with regard to faculty rank/status, course type, and pedagogical approaches employed made the original sample rich. Continuing the data collection and analysis process with the narrowed sample of six provided the best opportunity to evaluate the nuances and interconnections emerging as possible patterns within the data set. Two to three classroom observations for each participant were conducted and followed by a 90-minute subsequent follow-up interview. Document analysis was also performed on key documents from participants in the narrowed sample: observed course syllabi and their teaching philosophy statement. These two documents comprised the fourth and final mode of the data collection process.

Composite profile of narrowed sample.

Comprised of three men and three women, all of the observed participants in the sample self-identified as White, with one specifying that they were born outside of the United States. Years teaching at the college level range from 2 -26 years in the US and/or abroad. The participants were also employed full-time as faculty at Frontier Range University (FRU), but there were differences in their faculty rank and status. At FRU, faculty rank can vary. In addition to appointments at the full, associate, and assistant levels, faculty rank can also include clinical, research, adjunct, and lecturer. In the case of this more narrowed sample, 2 participants were associate professors and 1 was a full professor. The remaining 3 participants were lecturers. Similar to institutions like FRU, faculty status is represented in its most common forms: tenure-track and non-tenure track appointments. Different from their tenure-track faculty colleagues, lecturers' primary responsibilities include teaching, advising, and service. Moreover, they were considered contingent faculty because they had annual contracts without the guarantee of renewal.

Despite the variation in faculty rank and status, there was consistency across this narrowed sample with regard to faculty training. All but 1 of the 6 observed participants entered the field of teaching unintentionally. This is quite surprising considering that most of the observed participants (4 of the 6) had a Ph.D. The remaining two participants were lecturers and had a Master's, but in their respective academic disciplines/industry, a Master's degree was considered terminal. Overwhelmingly, participants felt that teaching was important work and a facet of their job that they enjoyed. Research interests and activity were high among the group, regardless of faculty rank or status. Some of the more avid researchers held non-tenure-track appointments. Two of the 6 participants

were Fulbright scholars, although all of the participants engaged in research and scholarly activity that contributed to their academic disciplines/industry in the United States and/or abroad.

Entry points into the discourse on race/racism, or more broadly, power and privilege were also varied. There were a few participants who had experience with feeling "minoritized." For some, this meant having to confront anti-Semitism or gender bias. But even fewer of these considered how they had benefited from systems of power, rooted in race, gender, or citizenship privilege. However, of those who had, their evaluation was critical, as in the case of one participant who acknowledged that being White had allowed them to pass for straight and thus escape the disenfranchisement that often comes with being different. Whether knowingly or unknowingly, these 6 participants have aided higher education in its ability to make college campuses places where racially minoritized students want and are able to learn.

Data Collection and Analysis

Three validation procedures were conducted in the process of data collection and analysis. Validation procedures are representative of qualitative approaches for establishing credibility, like trustworthiness and authenticity (Creswell & Miller, 2000). Constructivist grounded theory (CGT) purports that it is unrealistic to believe that a researcher can enter the field completely free of past experiences, assumptions, or exposure to literature (Charmaz, 2006; Heath & Crowley, 2004). In response, the researcher engaged in reflexive bracketing (or researcher bracketing) to aid in identifying and understanding how each informed the research process. As such, the researcher's positionality was scrutinized through reflexive bracketing to understand what parts of the research process (a) were being taken for granted, (b) reinforced power hierarchies, and (c) failed to situate the researcher within it (Ahern, 1999).

Collaboration and debriefing procedures were also employed to establish validity (Creswell & Miller, 2000). Collaboration enabled the researcher to work with their participants to co-construct the findings. This validation strategy is also consistent with constructivist grounded theory, which allows the participants' construction of reality to inform the researcher(s)' (Charmaz, 2000). While researcher reflexivity and collaboration prioritizes the perspectives of those involved in the study, peer-debriefing incorporates the viewpoints of those external to the study (Creswell & Miller, 2000). Peer-debriefing with colleagues familiar with the constructs under study and/or the methodology stimulated thought-provoking questions that required the researcher's interpretation of the data be

interrogated (Creswell & Miller, 2000). Though common in qualitative research, member checking (Creswell & Miller, 2000) was not conducted formally due to the nature of this study's research design. However, the research design included an opportunity for participants to review interview transcripts and clarify researcher observations during the subsequent follow-up interview.

Three cycles of coding (i.e., line-by-line, focused, and theoretical) were conducted across the data set. To ensure that the data collection and analysis process did not end prematurely, structural questions were posed of data and noted on analytic memos, then theoretically sorted throughout each phase of data collection and analysis. Once no "truly new" codes emerged, the 350 first-cycle codes eventually evolved into 41 focused code categories, each with its own set of definitions and inclusionary/exclusionary bounds. A series of electronic codebooks were created that allowed the 350 first-cycle codes to be mapped to their corresponding second-cycle, focused and third-cycle, theoretical codes (see Appendix C).

Theoretical codes are used to explain relationships between code categories, as the research hypotheses became more integrated into theory (Charmaz, 2006; Glaser, 1978). Moreover, theoretical coding moves the analysis further from the raw data to interpreting the data in a conceptual way (Lewis & Ritchie, 2003). According to Lewis and Ritchie (2003), this phase of the data analysis allows a researcher to form explanations for why phenomena are occurring based on their analysis of patterns within the data. What follows is a presentation of the study findings.

Findings

Employing the constant comparative method of analysis across the data resulted in the formulation of theoretical explanations (i.e., theoretical codes) explicitly derived from the data through participant accounts. As such, the emergence of these explicit explanations described the presence of three distinct but highly interdependent themes (see Appendix D): white interests, racial consciousness, and faculty behavior, each with its own complex characteristics. Still grounded in data, the findings are presented without use of participant pseudonyms to discourage a reader from dismissing these instances as isolated incidents.

White Interests

Participants characterized white interests as having both psychological and material attributes, which is consistent with critical race theory. Patterns within the data also explain how deeply embedded educational norms and traditions, such as academic freedom, faculty rank/status, and the academy's

reliance on student course evaluations, cultivate white supremacy (i.e., normalcy, advantage, privilege, and innocence), giving white interests an institutional context that is reinforced by the participant through their embodiment of whiteness. Moreover, findings indicate that White faculty are afforded choices with regard to the preservation of white interests, which are ultimately self-serving. Consistent with the work of Bonilla-Silva (1997), their choices seemingly involved navigating risk associated with preserving their primary social, political, or economic positioning as White faculty. The functionality of white interests proved the most compelling aspect of the study's findings. Moreover, saturation of this theoretical code category allowed white interests' institutional context to be deconstructed.

Analysis of the data illustrate why academic freedom appears to have the most significant bearing on participants' understanding and description of white interests' institutional context. Participant accounts describe academic freedom as the *power* imparted to them through their *authority* as faculty. One participant (lecturer) explained, "How I went about it was left up to me. Teaching provides a context for a lot of thinking about how *you* want to do it. So it was kind of a blessing that *nobody cared*." This participant's assertions readily illuminate the luxury of "not being told what to do" portrayed by the majority of participants. But within this larger narrative, there was also a subset of faculty (regardless of rank or status) who argued that academic freedom could be "misappropriated" and ought to be "used responsibly." This notion of academic freedom seemed to be further complicated with regard to faculty status. Faculty with non-tenure status (i.e., contingent faculty on contract, with no guarantee of renewal) seemed to believe that academic freedom provided them with only a "limited amount of protection and leeway" in the classroom. As such, these participant accounts seem to characterize tenured or tenure-track faculty as a *protected class*, with most conveying that they "want that type of academic freedom too."

Participants with non-tenure status also alluded to an underlying tension of feeling "stifled" or "having to stay within the confines" of their identified key role as teacher. In combination, these factors left participants who were without tenure feeling much more "vulnerable," as this participant (lecturer) illustrates:

...[Y]ou've got to be careful when you're on contract. If [you] come across as though you're agitating things, it could mean that somebody's nose could be put out of joint. For example, I like student activism. If I was tenured faculty, I could encourage that outright—and be engaged it in. I could be having gatherings and stuff—and be

safe. I can't do that without possibly putting my contract in jeopardy.

Lastly, as it relates to white interests' institutional context, there was consensus among participants that students' course evaluations significantly contributed to the academy's "system of reward," demonstrating their impact with regard to faculty status. To illustrate, one participant (associate/full professor) offered the following after reflection on their experience with the promotion and tenure process:

The reward system, even at a school like Frontier Range University, for the majority of the disciplines is all around scholarship, not classroom teaching, for tenured and tenure-track faculty. And how many faculty members actually are trying to improve their teaching? I don't know. I could tell you from my annual evaluations that anything I do in teaching is irrelevant.

These remarks are consistent with perceptions of faculty with tenure in that the "expectations for faculty with regard to teaching are different for those with tenure." Faculty whose tenure remained under review were more likely to perceive that "course evaluations were critical in the tenure process." Another participant (associate/full professor) reported that they felt compelled to intervene, when a student from their service-learning based course had difficulty convincing a Muslim refugee to allow their interactions to be filmed, which was required as part of a course assignment. The participant notes:

The student communicated to me how she felt this unfairly would affect her grade. So, I spoke to the Community Partner and said, "You got to help me out here; I can't afford to have my teaching evaluations go in the toilet, because I don't have tenure yet. I need good teaching evaluations. I need this to be successful."

Participants not on the tenure-track (i.e., lecturers) indicated that having exemplary student evaluations extended to them the type of "protections" that their faculty status failed to provide. Participant accounts, similar to the exemplar quote included below (lecturer), illustrate the great pride and effort that faculty with non-tenure status attributed toward teaching:

I score about 96% on my student evaluation; and I score higher than the department...I think the only reason I get to continue to teach this way is because I get these really big evaluations.

Good evaluations allowed these faculty to "feel more secure", despite their perceived undermined faculty status.

Greater pre-occupation with preserving white interests. As noted previously, participants appeared as though they were afforded choices with regard to preserving white interests, which are ultimately self-serving. Moreover, their choices seemingly involved navigating risk associated with preserving their primary social, political, and economic positioning as White faculty. Patterns within the data suggest that participants with greater pre-occupations with white interests tended to avoid the associated risks with preserving their primary social, political, and economic position.

Participants (regardless of faculty rank/status) who opted to avoid risks readily described addressing issues of race/racism, or more broadly, power and privilege, in their classrooms as "risky" and accordingly a threat to their ability to preserve white interests. These faculty were able to avoid the risk involved by making others accountable for their choices, instead of bearing the consequences themselves. For instance, when sharing a classroom experience involving an English language learner (or ELL student) of Asian heritage, whom they believed plagiarized on a paper, one participant (lecturer) said, "I let it go through the Honor Board. I felt good that I was able to kind of take a hands-off approach and say, 'Here is the evidence, you decide'. The student was later found responsible for academic dishonesty."

This participant, and other White faculty with greater pre-occupations with white interests, can reinforce white racial knowledge, when they presume that racially minoritized, English language learners (or ELL students) intend to cheat, before considering how difficulty with understanding English and style guidelines for academic writing in the US may have contributed to the situation. Further, placing the fate of the student involved in the hands of the Honor Board permitted the White faculty member to maintain white innocence because on the surface racial discrimination appears to have played little to no role in the student's present predicament (Galman et al., 2010; Wekker, 2016). Similarly, when asked to explain how students were educated about the lived experiences of refugees in the course that used service-learning as a teaching tool, the participant (associate/full professor) responded, "Someone from the community organization comes in and does a whole class period about refugees. I just reinforce it." In this instance, the participant was aware of the importance of educating students about the significance of race/racism, or more broadly, power and privilege. But rather than them developing a more complex understanding of the issues, the participant placed the onus for that on someone else, an individual who, though knowledgeable, had an extremely limited and peripheral relationship to the students or course.

Lesser pre-occupations with preserving white interests. In contrast, participants who were less preoccupied with white interests seemed more incline to either negotiate or assume the associated risks to their ability to preserve primary social, political, and economic positioning. A lesser pre-occupation *did not* equate to none at all, nor does it appear to mean that these faculty forfeited their privilege from being born White. But these participants seemed to believe that addressing issues of race/racism, or more broadly, power and privilege, was “relevant and beneficial” to the curriculum and their course outcomes. A participant (associate/full professor), in the following quotation, provides an example as to how they negotiate the risks involved:

I always wear a suit and tie. It’s a way of distinguishing me as the Professor. I know what I am tapping into here. And I know that by doing it, I am doing a male thing, a White thing, and I am doing a straight thing.

This participant’s (associate/full professor) remarks illuminate what several participants describe as factors contributing to their ability to navigate risks associated with maintaining a lesser pre-occupation with white interests: the necessity to enact whiteness by drawing a boundary and/or occupying space traditionally reserved for them as White faculty. The data emphasized one additional factor that warranted navigation of the associated risks with preserving white interests: engaging directly with White students who may not have confronted their own privilege. In the statement below, a different participant (lecturer) shared their strategy for approaching these types of moments in the classroom:

Let’s say you have a conservative right-winger in your class; as soon as you say a few words that they have been trained to pick up on, you will shut them down. You have to be much more subtle.

Participant accounts within the data also explained that despite their lesser pre-occupation with preserving white interests, some White faculty also realized that navigating the associated risks posed a threat to any psychological wage they could receive from White students and/or White colleagues. How Whites people can withhold psychological wage is captured well by one participant (lecturer) who said, “They look at me like I’ve made some kind of mistake.” Just as other participants who maintain lesser pre-occupations, this participant seemed to believe that their White colleagues, and in some cases, White students, thought they were being too much of a “bleeding heart.” White faculty experience a loss in psychological wage, when

they do not treat whiteness like the property (Harris, 1993) that their White colleagues/students believe should be protected. An example is provided below. Here the participant (lecturer) detailed how they responded to White students’ frustrations with having to work with racially and ethnically diverse international students and domestic students on a group project:

My first thought was to tell these White students; you just have to get over yourself. Students who have trouble with that usually self-elect to get out of my class. And I’ll say, “Let me help you. I can make that happen.”

Additionally, patterns within the data suggest that White faculty who assume the associated risk appear not to be concerned with being accused of “pushing an agenda.” Their exploration of race/racism, or more broadly power and privilege, was transparent in their course outcomes and curriculum. At the same time, these faculty, as the participant (associate/full professor) account below reveals, know that their embodiment of whiteness allows them to be seen as raceless (Cooks, 2003; Lawrence, 1997; Mitchell & Rosiek, 2006; Nast, 1999; Rebollo-Gill & Moras, 2006), presumably this is not the case for their faculty of Color counterparts. As a result, this subset of participants felt that they had the option of choosing whether and how race/racism would be introduced into curriculum content and classroom discourse without recourse:

There’s a way of skirting the race issue and a way of saying, well, in our discipline, early scholars were kind of colonials—so let’s just move on. But, I have chosen to make it a much larger part of the class; it’s going to be out there for our consideration and evaluation.

Racial Consciousness

Patterns within the data indicate that racial consciousness and race identity formation are not mutually exclusive. More specifically, considering the impact of race/racism appears contingent on the participant’s ability, or in some cases willingness, to see one’s self as White. Racial consciousness appears a fluid process that occurs at both higher and lower levels, each with its own set of attributes. Helms’ (1984, 1995) White racial identity development model also refers to identity formation as a fluid process. But, before delving more deeply into the varying levels and attributes of racial consciousness, it is of significance to note how race is understood and described across the data set.

Race, for the majority of participants, was not identified as the most salient (or central) aspect of their social identity. Instead participants readily identified “gender” or “being an academic” as the facet of their social identity that bore the greatest influence on their self-concept. Furthermore, race or “being White” became “real,” “normal,” or “of value” as participants had more frequent encounters with the *Other*. White, in this regard, became what *Others were not*, with a majority of participants reporting some of the following examples: “Everyone was White where I grew up, so I suppose I didn’t think about it”; “race...it does exist. I mean that we are even recognizing that Latinos exist”; and “being allowed to swim with Black children wasn’t okay, because I would get dirty too.” At times, race was conflated with socioeconomic status, underscoring the performative nature of whiteness (Rodriguez, 1998), as this participant (associate/full professor) reveals:

There was the kind of poor White trash White people and then there was our kind of White people. I also went to school with Black people. I went to school with * and his father was a Minister who marched with Dr. King. And I went to school with * and her mother was a dean at a university. They were Black, but they were whiter than these poor White trash people who were on the bus with me.

To be White, as this participant account makes clear, was no longer associated with actual skin color. *Being White* had value. Whiteness, therefore, has characteristics that are both material, such as socioeconomic status, and psychological, as in the belief that one is superior. Despite the variations in understanding about what *being White* meant, participants—rather consistently—contended that they were *not as White as they looked*. Patterns within the data further suggest that participants desired to “shed their whiteness” as a means of disassociating from what they had come to believe “being White” means: “elitist,” “conservative,” or “racist.” Similarly, some participants, in their evaluation of the impact of “being White” on their own lives, characterized it as “the culture” or “a White context” that “needs to be overcome,” as this participant (associate/full professor) describes: “I grew up in a White context. But, I have also attempted to overcome that, because I don’t think that is the way the world is.” “Shedding whiteness,” in some ways, resembled a process of enlightenment. Some participants, coincidentally those exhibiting lower levels of racial consciousness, described themselves as “liberal,” an “idealist,” or “progressive” as a result of *shedding their whiteness*; whereas other participants, coincidentally those exhibiting higher levels of racial consciousness, reported that they were frequently being labeled a “traitor” or “communist,” namely by other

Whites who presumably no longer saw these participants as one of them.

Lower levels of racial consciousness. Participants with lower levels of racial consciousness seemed to evaluate race through a moral dualism frame that for them drew attention to the conflict between good and evil. Further, race among these participants was more narrowly defined, at times being characterized as “biological,” as contextualized here by a participant (lecturer) who said, “I do prefer to talk about ethnicity more than race, because I feel that race is a construct, where ethnicity is something that is traceable to a country of origin.” And as a result of its narrow scope, patterns within the data suggest that at this level, race is seen as “insignificant” and “not reliable”—a social construction. To further illustrate, one participant (associate/full professor) shared their reflections on a dialogue they had with a colleague who asked them “Do you notice that I am Black?”:

I was like, oh my god, what’s the right answer. Then I thought, well yeah duh. “Well, of course I see you are Black. Just like I see that you have brown eyes or that I see you have short hair.” That’s what I hope it would mean for me.

Arguably for this participant, characterizing race (e.g., “biological,” “insignificant,” or “not reliable”) in this way, was rooted in a belief that race is harmful.

Evaluating race through a moral dualism frame seemingly allowed participants at this level to characterize the effects of race, including but not limited to racism, as problematic. Participant accounts also imply that the effects of race are filtered through a post-racial lens and believed to be “continually evolving” and “not as they once were.” Problematizing race and its effects was not only relegated to circumstances external to the academy. This also applied to the institution of higher education and mostly associated with perspectives on increasing compositional diversity on college campuses, as this participant (lecturer) pointed out: “You are not going to redistribute the money based on wealth to try to equalize things; you have to wait for these things to slowly change.”

Higher levels of racial consciousness. Disparate from those at lower levels, patterns within the data suggest that participants with higher levels of racial consciousness readily interrogated whiteness—their own and that placed upon them by others. Participant accounts also illuminate that this interrogation of whiteness was “critical” and “essential” in one’s ability to develop an advanced racial consciousness. Additionally, this “willingness” and “priority” to interrogate whiteness appeared to stem from a belief that being born White has “inherent privilege,” which

some participants even alluded to as a “birth right.” For this set of participants, “being White” meant “never having to consider how race” has shaped their experiences, with one participant (associate/full professor) explaining it this way: “I know that when I walk into a room, I walk with the benefit of assumptions that people bring to me—who don’t even know me. I have that power. It’s a privilege that other people don’t enjoy.”

Moreover, patterns within the data also suggest that interrogation of whiteness increased these participants’ sensitivity to race and aided in their ability to identify its effects both internal and external of the academy. Specifically, participant accounts seemed to indicate that at this level, there is not only a “concern” but also “recognition” by participants of the ways in which whiteness is re-centered, privileging White people and marginalizing others—at times by their own hand. One participant (associate/full professor) comments upon reflection on their ability to meet the needs of an English language learner (or ELL student) of African heritage in their classroom:

Having her in the class made me think [about how] the American educational system favors extroverts...and yet as teachers—we cultivate that. I thought—I’ve fallen into this trap.

This increased sensitivity to race that is brought on by an interrogation of whiteness led participants at this level to describe race and its effects as endemic. Moreover, patterns within the data suggest that addressing matters of race required both nuanced and immediate responses. The endemic nature of race and its effects, including but not limited to racism, was accentuated by this participant (lecturer) who said: “We are not beyond race. And we won’t be until we sincerely acknowledge its power. Either that or we’d all have to become dumb, deaf, and blind.” Accordingly, these participants, in response to the perceived endemic nature of race and its effects, tended to “use their influence” and the “power embedded within the faculty position” to “alter processes” and/or “challenge assumptions about race” that they presumed perpetuated racialized structures that persist not only inside of the classroom, but also in other faculty restricted spaces, like department meetings and discussions on faculty hiring.

Faculty Behavior

Patterns within the data suggest that the behaviors of White faculty in the classroom are linked to their level of racial consciousness. Findings also reveal that a participant’s pre-occupation with white interests also made their faculty behavior susceptible to white

interests, influencing student learning in the process. Consistent with literature review findings, participants with lower levels of racial consciousness tended to employ behaviors in their classroom reflective of a more restrictive view of equality. Behaviors reflective of a restrictive view of equality focused more on creating equal access to learning by promoting inclusion of the *Other*, which safeguards white supremacy and fuels the reproduction of racial hierarchies in the classroom. Conversely, participants with higher levels of racial consciousness tended to employ behaviors in the classroom reflective of a more expansive view. Behaviors reflective of an expansive view of equality seek to disrupt and dismantle classroom norms and traditions that reinforce racial subordination in pursuit of equitable educational outcomes for racially minoritized students. This section begins with a discussion of the behaviors that reflect a more restrictive view of equality.

Behaviors reflective of a restrictive view of equality. Indicative of a lower level of racial consciousness, participants employed behaviors in their classrooms reflective of a more restrictive view of equality, which largely emphasized examinations of the self on an individual level as a means of “altering attitudes” among students. Findings also suggest that “altering attitudes” was believed to be a function of “exposing their students to difference,” as illustrated by one participant, who said, “I’m hoping that’s an eye opener for them or at least makes them receptive to things. So they’re at least being exposed to some differences.” These sentiments were echoed by another participant, who stated, “My hope is that if we get more students seeing a broader world... if we could get more globally connected, my hope is that some of the ignorance will go away.” It is also of significance to note that the “students” to which these participants were referring were the White students in their classrooms. Faculty behaviors that focus on shifting individual attitudes, therefore, can leave the racially minoritized students in the class with a very specific role to play, not only in their own learning, but also that of others.

Patterns within the data also suggest that behaviors that reflected a more restrictive view of equality can shape the student learning experience in distinct ways. First, learning appeared one-dimensional. Participant accounts describe learning as “belonging to the students,” with faculty being “in charge” of its facilitation. Students were seen as “responsible for themselves,” as this participant’s comments reflected: “My attitude towards teaching is ultimately, it’s the students’ responsibility for themselves as long as the faculty member is not so incredibly boring or incompetent that they are making it difficult for people to learn.”

Next, participants who employed these behaviors relied heavily on the racially minoritized students in addressing issues of race/racism, or more broadly speaking power and privilege, in the classroom. Broaching the subject of race/racism in the classroom, for some of these participants, felt “somewhat taboo” and even “dangerous” at times. Centering race into the discourse seemed to be more of a challenge for these participants when there were mostly White students in the classroom. One participant (associate/full professor) recounts the following:

I was flabbergasted [when] this White student pushed back on me in front of the class, which never happened at my old school. The few White guys would have been too scared to say anything like that in that environment.

Patterns within the data further illuminate why some of these faculty also felt they were “not legit.” These beliefs appear to stem from a perception among these faculty that the experience of students of color “are not theirs,” with one participant (associate/full professor) stating, “Latino and African American students are likely thinking, what the f*ck do you know”. These beliefs seemed to negatively affect participants’ confidence about broaching issues race/racism in the classroom.

Finally, these participants readily believed that exploring issues of race/racism—or more broadly, power and privilege—was discipline specific. Participant accounts reveal that with regard to their role, these faculty saw themselves as “not responsible,” describing their role in exploring issues of race/racism as “difficult” given the parameters of their course and disciplines/industries. For example, one participant (associate/full professor) explains, “Well, you know, it’s challenging, given the subject matter I am assigned. But if I were teaching a philosophy course, this would be more overtly a part of my teaching.” Given the patterns within the data, the institution of higher education, and by extension its faculty, were held to a much lesser degree (or in some cases, absolved) of accountability for the facilitation of social change. Reactions were consistent among participants with regard to social change being a matter of “happenstance,” as this participant’s (associate/full professor) comment demonstrates: “My objective is not to teach my students about social justice. It is more of a by-product.”

Behaviors reflective of an expansive view of equality. Indicative of a higher level of racial consciousness, participants employed behaviors in their classrooms reflective of a more expansive view of equality in that their focus was on the systemic, with regard to how explorations of race and racism, or power and privilege more broadly, contribute to both

classroom conditions and professional competence among students. Patterns within the data suggest that these participants were more concerned with “their impact and not simply their intent” and “challenging the status quo” with their faculty behaviors. The participant (lecturer) account below illustrated this focus:

...[O]ne of my White male students said to me after class one day, “Have you ever noticed that all the places that have the trouble are the poorest and have the Black people?” I used that opportunity to say, “Let’s explore other things and see if we can still use race as the explaining variable.”

This participant, as with others participants whose behaviors reflect an expansive view of equality, utilized their course aims and content to critique and evaluate widely accepted cultural norms that reinforced racialized structures not only in the classroom, but also in their industry. To illustrate, this same participant used the global economy as a means of exploring how poverty and capitalism are used to maintain hierarchies of power along the lines of race, ethnicity, and class.

Patterns within the data also suggest that these participants believed it was the “responsibility of faculty to connect the subject matter to its society’s social implications.” For instance, one participant (lecturer) shared their experience teaching in the Business School about ethical business practices, which they assert should extend beyond workplace interest and illuminate a corporation’s relationship with the community:

But some students resist and say, “No, it is about wealth creation.” I challenge these assumptions by emphasizing corporate social responsibility throughout the curriculum. And one student, a senior, said he’d never heard that term before. And I said, “You give me the names of the faculty,” and I went to them.

These participants maintained that as faculty, “they see themselves and their students as part of a society” and thus “responsible for taking care of its infrastructure.” Patterns within the data also suggest that the aim of these participants in the classroom was not limited to “altering attitudes through the celebration of difference,” as those who employed behaviors reflective of a restrictive view of equality. Instead, findings indicate that these participants used their faculty behaviors to expose students to how they could be complicit in the perpetuation of racism and other forms of oppression. Furthermore, these participants were also able to demonstrate for their students how developing racial consciousness contributes to a mastery of professional competence in their respective disciplines/industries.

Behaviors that reflect an expansive view of equality likewise shape learner experiences in the classroom. Patterns within the data suggest that the learning process, under these conditions, is two-dimensional, with the majority of participants describing it as a “two-way street.” Participant accounts also revealed that these faculty believed their students not only contributed to their learning, but also were imperative to knowledge construction in their classroom. “Generativity,” or the “collective scaffolding of ideas that aid in their critical examination,” is how one participant (lecturer) described the mode of knowledge construction in their classroom. Another (associate/full professor) noted that “Faculty must create the pedagogical presence that requires them to also be present to people, meet students where they are, and draw upon what students bring to the classroom—it is also a part of my experience.”

Participant accounts also convey that these faculty were comfortable with addressing issues of race that emerged in their classrooms. Participants appeared to exercise a variety of strategies in this regard. But the centrality of race/racism, or more broadly power and privilege, that was explored through their curriculum, combined with a commitment to involve students in knowledge construction, resulted in these faculty reporting that they were “prepared for the unexpected,” believing it necessary to be “amendable” in the classroom. One participant (associate/full professor) recollects the following:

Once you introduce issues of race/ethnicity, it's not far beneath that you also encounter stereotypes and ignorance. Sometimes you just have to say, “That's ill considered. That stereotype is one that you may be cultivated over many years, but I am here to tell you that that's an incorrect characterization that you have to give up.”

Strategies continued to emerge in participants' accounts, with some choosing to disrupt the grand narrative by “presenting an alternative explanation” to students. Participants accounts also indicate that “preventing one voice from dominating the conversation” being had in their classrooms was key to their success in this endeavor.

Lastly, faculty whose behaviors reflected an expansive view of equality believe that all disciplines had race implications. One participant (associate/full professor) characterized it as follows, “Studying issues of power/privilege is important to every course; unless you are studying cacti.” Patterns within the data suggest that this belief was tied to shared values among these participants in that the institution of higher education was presumed responsible for the facilitation of social change, and thus, they saw themselves as a conduit, assuming that role in their classrooms. These

participants described education as “a liberating mechanism” and “something that everyone deserves,” where students were “free to learn and free to think.” Their role then became much more closely aligned to what they believed the function of education to be: an instrument of social change. One participant (associate/full professor) synthesized the presumed function of education: “You can't be in education and not feel a responsibility to promoting social change. Otherwise you would be accepting a situation that to me is unacceptable. We have a responsibility.”

Conclusion

An investigation of the literature revealed that racial consciousness and the behaviors of White faculty in the classroom appeared linked. With those findings, a conceptual framework was developed and tested in this constructivist grounded theory study. Three complex and highly interdependent themes emerged: white interests, racial consciousness, and faculty behavior illuminating a more nuanced understanding of the phenomenon understudy than the conceptual framework developed originally proposed. Findings suggest white interests have both psychological and material attributes. Patterns within the data also explain how deeply embedded educational norms and traditions, such as academic freedom, faculty rank/status, and the academy's reliance on student course evaluations, cultivate white supremacy (i.e., normalcy, advantage, privilege, and innocence), giving white interests an institutional context that is reinforced by the participant through the embodiment of whiteness. Moreover, findings indicate that White faculty are afforded choices with regard to the preservation of white interests, which are ultimately self-serving.

Analysis of the data also support preliminary findings from the literature that suggest that white interests represents a lynchpin in conceptual framework tested, thus critical in constructing a theoretical interpretation of the delimited problem under study (Glaser & Strauss, 1967). However, study findings indicate that it is not the existence of white interests, but White faculty pre-occupation with preserving white interests that presumably influences their development of racial consciousness. White faculty with greater pre-occupations with preserving white interests seemed to have lower levels of racial consciousness. Participants with lower levels of racial consciousness appeared to evaluate race through a moral dualism frame, which for them drew their attention to a conflict between good and evil. Likewise, race and racism were more readily described by these participants as problematic, which resulted in the belief that “these things” will continue to evolve over time. By comparison, White faculty with lesser pre-occupations with preserving white

interests appeared to have higher levels of racial consciousness. Participants with higher levels of racial consciousness also regularly interrogated whiteness—their own and that placed upon them by others—resulting in an increased sensitivity toward race that aided in their ability to identify its effects. These participants described race and racism as endemic, and as such, believed any response needed to be immediate and nuanced. Regardless of the participants' level of racial consciousness, their perception of race and racism (i.e., problematic or endemic) was uniformly applied to their lives, both internal and external of the academy.

With this information, the influence that racial consciousness has on the behaviors of White faculty in their classroom can be theoretically explained. Characteristic of a lower level of racial consciousness, White faculty employed behaviors in their classrooms reflective of a restrictive view of equality. These type of faculty behaviors emphasized examinations of the self as a means of “altering attitudes” by exposing students to difference, which safeguards white supremacy (i.e., normalcy, advantage, privilege, and innocence), when White faculty fail to make explicit how explorations of race/racism are relevant in their discipline and industry. Further, White faculty whose behaviors reflect a restrictive view of equality seemed to believe that exploring issues of race/racism were discipline specific. The institution, and by extension its faculty, were thereby held to a much lesser degree (or absolved) of accountability for the facilitation of social change.

This is in contrast to White faculty who employed behaviors in their classrooms reflective of a more expansive view of equality. Consistent of a higher level of racial consciousness, these faculty employed behaviors focused on the systemic. More concerned with “impact over intent,” these White faculty members used their course aims and content to critique widely accepted cultural norms that reinforced racialized structures both in their classrooms and industry. Lastly, White faculty who employed behaviors in their classroom reflective of an expansive views of equality believed that all disciplines had race implications, with most arguing that education should be “liberating” and an exploration of “freedom.” These faculty believed there was close alignment between what they presumed their role in the classroom and their perception that the institution of higher education was responsible for the facilitation of social change. Findings also revealed that the inextricably link between racial consciousness and the behaviors of White faculty in the classroom conceivably makes faculty behaviors susceptible to white interests. It can also be argued that advancing racial consciousness, particularly among Whites people

preoccupied with preserving white interests is needed to dismantle the white supremacy that is not only internal, but also external to the academy.

Implications, Recommendations, and Future Research

When asked about their faculty preparation, the majority of participants responded that their “route to teaching was unintended” and that they were “not taught how to teach,” because their faculty preparation (e.g., doctoral studies) emphasized a mastery of content knowledge or skill. Irrespective of academic discipline, participants across the data set overwhelming reported they felt underprepared for the classroom, with one participant (lecturer) going so far as to contemplate whether this was “by design.” The presumption that such faculty experiences are more likely *by design* is certainly well supported within these research findings, along with its resulting implication: faculty behavior (i.e., course design and instruction) is susceptible to white interests. This is an important implication for all members of the academy, but arguably, this may be most important to those that serve as University Provosts or Chief Academic Officers. Faculty need the type of continuing education that promotes advancements in racial consciousness beyond that they received in their faculty training, if at all.

Further, white supremacy's embedded nature gives way to white interests' institutional context, which has several potential repercussions. These findings suggest the overall value of classroom teaching is left open to interpretation, particularly among White faculty, with greater pre-occupations with white interests. The impact of this is made much clearer when juxtaposed with the experiences of a participant from this study whose behaviors were reflective of an expansive view of equality. This participant made a conscientious choice to remain a lecturer to avoid what they called the “constrictions of tenure.” As a lecturer, they felt permitted to focus on teaching and take what they described as “more risks” in the classroom, enabling them to present the best course of study for which the education was to be offered (Danowitz & Tuitt, 2011). This participant, and perhaps others like them, [may] decide not to pursue a tenured faculty position, despite possessing the teaching capacity to promote more equitable educational outcomes among racially minoritized students. This example underscores a flaw in the academy's existing system of reward.

To fully understand the impact white supremacy has on the academy, as it relates to pursuit of more equitable educational outcomes for racially minoritized students, the functionality of interest convergence must be revisited. Study findings suggests that interests of equitable educational outcomes among racially minoritized students will only be accommodated when, and for so long as,

those interests converge with those of White faculty, in particular those with greater pre-occupations with preserving white interests. Further, so long as the academy rewards White faculty who maintain a greater pre-occupation with preserving white interests, racial consciousness among them will likely remain low. This is not said to insinuate that higher education is solely responsible for dismantling white supremacy, but to illustrate its potential culpability in its cultivation.

Such investments in inequality are not exclusive to US higher education. Race extends beyond the black/white binary to also encompass racial phenotype, ethnicity, citizenship, the racialization of language and religion, as well as their intersections. Further, while social inequality varies from country to country, power, privilege and difference are universally understood phenomena (Vincent-Lancrin, 2008). Racism is not bound by time, space or place. White supremacy, Nativism, colorism, colonialism, Apartheid, Anti-Semitism, and the like contribute to the racial divides, racial disparities, and racial conflicts that persist worldwide, permeating our institutions and the communities in which they reside. Therefore, exploring the racial implications of teaching and learning globally remains a research priority, as our campuses continue to become more and more racially and ethnically diverse. Future research, in this regard, should begin as this study did, with a critique of how race and racism are understood in the country of origin.

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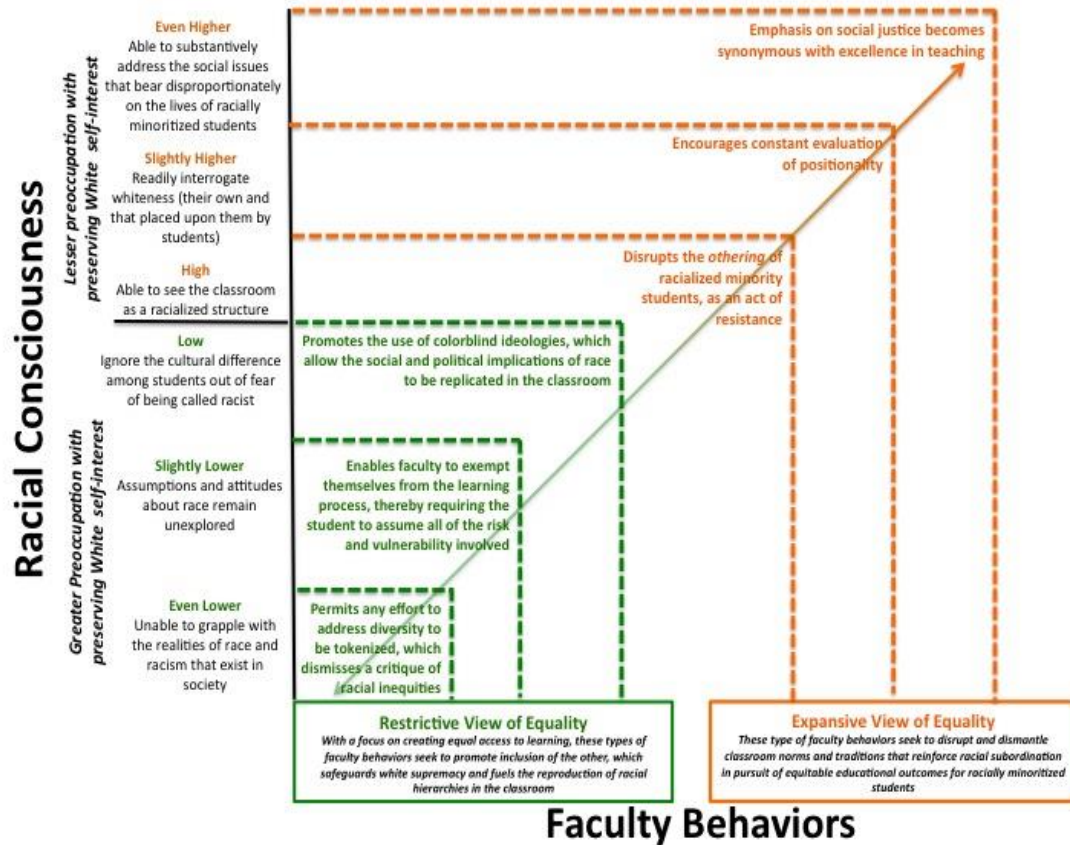
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Appendix A
Racial Consciousness and Its Influence on the Behaviors of White Faculty in the Classroom:
A Conceptual Framework (Tested)



Note. Conceptual framework developed by Author, 2013.

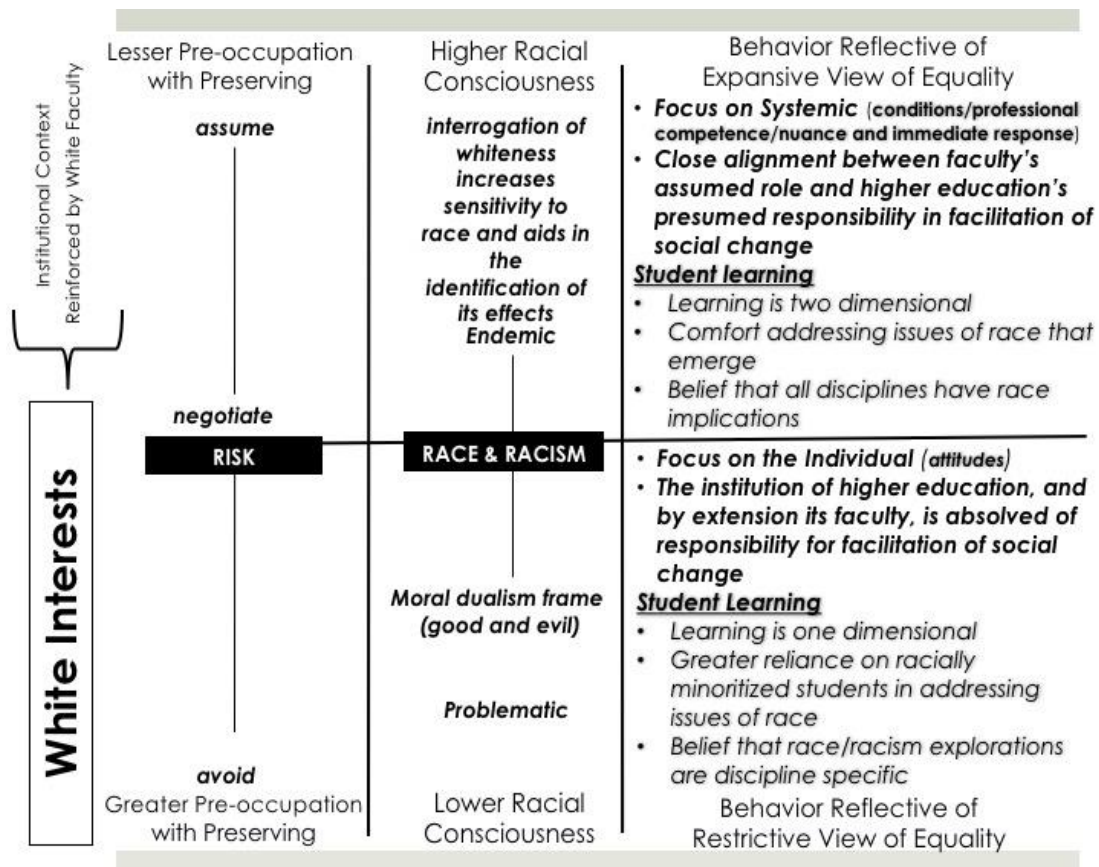
Appendix B
Demographics of the Sample

Sample Characteristics	12 total
Faculty Rank	6 Asst./Assoc. 6 Lecturer
Faculty Status	7 Non-Tenure Track 5 Tenured/Track
Gender	8 Female 4 Males
Highest Degree Earned	10 PhD 2 Masters
Teaching Area	7 Sciences (Natural & Applied) 5 Arts & Humanities
Total Years Teaching at the College Level	Participant responses range between 2-26 years.

Theoretical Coding (Emergent Themes 3 rd Cycle Codes)	Focused Code Categories (that map 3 rd Cycle Codes)	Explicit Explanation Derived Directly From Data
<p>Race Consciousness</p> <p><u>Focused Code Categories that Conceptualized Theme</u></p> <ul style="list-style-type: none"> • Identity formation and racial consciousness not mutually exclusive • Entry point into discourse on difference/power/privilege • White is what others are not • I am not White, I am... • I'm not as White as I look <p>(High Racial Consciousness)</p>	<ul style="list-style-type: none"> • Race and its effects are not endemic • Recognize the privilege in being born White <ul style="list-style-type: none"> ◦ Addressing matters of race (power) requires nuanced responses 	<ul style="list-style-type: none"> • Interrogation of privilege increases sensitivity to race and aids in the identification of its effects
<p>(Low Racial Consciousness)</p>	<ul style="list-style-type: none"> • Race is narrowly defined <ul style="list-style-type: none"> ◦ Little to no recognition of privilege in being born White • Race is harmful <ul style="list-style-type: none"> ◦ Desire to not place value on race ◦ Fear of being called racist • Race and its effects, though problematic, will continue to evolve over time <ul style="list-style-type: none"> ◦ Limited or little recognition of operation of power/privilege in higher education 	<ul style="list-style-type: none"> • Duality of race (moral dualism conflict between good vs. evil)

<p>White Interests <u>Focused Code Categories that</u> <u>Conceptualized Theme</u></p> <ul style="list-style-type: none"> • White supremacy (privilege, normalcy, advantage, etc.) is embedded (institutional context) that is being reinforced by the individual (embodiment of whiteness) • Privilege/misappropriation/imp act of academic freedom • Power within faculty position • Describing/defining white self-interests <ul style="list-style-type: none"> ○ Element of risks <p>(High Racial Consciousness)</p> <p>(Low Racial Consciousness)</p>	<ul style="list-style-type: none"> • Lesser pre-occupation with preserving white interests • Greater pre-occupation with preserving white interests 	<ul style="list-style-type: none"> • White faculty, in response, tend to negotiate the associated risks • White faculty, in response, tend to avoid the associated risks
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Emergent Themes and Their Interdependence



Students' Satisfaction on Their Learning Process in Active Learning and Traditional Classrooms

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Studies have shown Active Learning Classrooms [ALCs] help increase student engagement and improve student performance. However, remodeling all traditional classrooms to ALCs entails substantial financial burdens. Thus, an imperative question for institutions of higher education is whether active learning pedagogies can improve learning outcomes when classroom resources are limited. In this study, we examined the effect of active learning pedagogies on students' satisfaction of learning processes in ALC and Traditional Classrooms [TCs]. The results show that active learning pedagogy activities are significant factors that increase students' satisfaction with their individual and group learning processes. In addition, active learning pedagogical activities in both TCs and ALCs influence students' satisfaction with their learning processes positively.

Teaching is not pouring knowledge into a student's head anymore. "To teach is to engage students in learning." (Christensen, Garvin, & Sweet, 1991, p. foreword, xiii). Since Russ Edgerton introduced the "pedagogies of engagement" concept in *Education White Paper* in 2001, a great deal of effort has been exerted to increase student engagement in college and university classrooms. As a result, different kinds of learning methods, such as collaborative learning, cooperative learning, and problem-based learning have emerged to promote student engagement in higher education (Prince, 2004; Prince & Felder, 2007). All these methods fit into an emerging category of pedagogy called "active learning."

Prince (2004) defined active learning as any instructional method other than lecture that engages students in learning. Prince's definition of active learning emphasizes the instructor's role in the classroom. At the same time, many other researchers also suggested learning space is important for students to participate in active learning. As part of professional development at a private liberal arts institute, several classrooms were converted into Active Learning Classrooms (ALCs) to enhance active learning. Faculty members who were interested in teaching in ALCs and educating themselves about active learning pedagogy were encouraged to participate in a learning community brought together for this purpose. The faculty met once a month to discuss active learning methods and committed themselves to applying active learning pedagogy to their classrooms. Not surprisingly, this generated a greater demand for ALCs than there were ALCs available. The faculty who had taught in ALCs wanted to continue to teach in ALCs, while other faculty members who were not part of the study became interested in utilizing ALCs to help students engage with their learning, their classmates, and their teachers in the classrooms. However, it was not financially practical to change all the classrooms on campus to ALCs. This situation prompted the question of whether

utilizing active learning activities in classrooms that were set up to accommodate traditional lecture style teaching could bring positive changes in students' engagement in the classroom. In order to determine the impact of active learning pedagogy on students, this study used an assessment tool to measure student satisfaction with their individual and group learning processes in both ALCs and traditional classrooms. Students in sixteen classrooms of various disciplines were surveyed, and the results were used to answer the following questions:

- Are students satisfied with their individual learning processes when active learning pedagogy is used in a traditional classroom?
- Are students satisfied with their group learning processes when active learning pedagogy is used in a traditional classroom?
- Does a classroom have to be configured as an active learning classroom to successfully accommodate active learning pedagogical activities?
- Can active learning pedagogy be executed effectively in traditional classrooms?

Literature Review

Active learning, especially in the engineering field (Prince, 2004), has received a great deal of attention from researchers. While there are many complications and challenges for researchers studying the impact of active learning (Prince, 2004), most of the studies clearly show that active learning does positively impact students' ability to retain and understand new material. Many researchers (Braxton, Sullivan, & Johnson, 1997; Hurtado & Cater, 1997; Pascarella & Terenzini, 1991; Stage & Hossler, 2000) documented that student interactions, not only with other students but also with faculty, were predictors of student persistence and quality learning. In a study that examined

faculty practices, student engagement, and student perceptions, Umbach and Wawrzynski (2005) found that the more faculty interacted with the students, the more students were challenged and engaged in meaningful activities. Also, students reported increased gains in personal/social development and general knowledge. These results are consistent with research done by Astin (1993), which found student interaction is determined to be the most important factor affecting student learning. Compared to a standard lecture format, active learning instructional approaches help improve students' attitudes (see Armbruster, Patel, Johnson, & Weiss, 2009; Marbach-Ad, Seal, & Sokolove, 2001; Mills & Cottell, 1998; Prince, 2004; Preszler, Dawe, & Shuster, 2007) and increase students' ability to think and write (Bonwell, & Eison, 1991; de Caprariis, Barman, & Magee, 2001; Johnson, Johnson, & Stanne, 2000; Jungst, Licklider, & Wiersema, 2003). In addition, active learning instructional approaches positively impact learning outcomes (Armbruster et al., 2009; Ebert-May, Brewer, Sylvester, 1997; Freeman, & Herron, 2007; Hake, 1998; Knight & Wood, 2005; Udovic Morris, Dickman, Postlethwait, & Wetherwax, 2002; Walker, Cotner, Baeppler, & Decker, 2008). Further, active learning classroom instructional approaches have been tried and appreciated beyond engineering classrooms while studies in courses other than engineering and sciences classes is scarce. The results of a study with students, whose first spoken language is not English, in anatomy and physiology classes show increased attendance, participation, and achievement among students who learned through active learning pedagogical approaches (Termos, 2013). Students in math education who experienced active engagement in the classroom reported their satisfaction in understanding content and maintaining interest and attention (Cavanagh, 2011). Finally, Johnson, Johnson, and Smith's (1991) research shows that student-centered learning can also be applied in large classrooms.

Not only are there numerous studies that show active learning methods work to enhance students' success in the classroom, there are also numerous resources available to support faculty committed to applying active learning pedagogy to their courses. As indicated in the work of Armbruster and colleagues (2009), several national programs such as The National Academies Summer Institutes and FIRST II (Faculty Institutes Reforming Science Teaching II) are committed to help faculty transform the way they teach by providing workshops, seminars, and venues where faculty help other faculty. There are also several database repositories of active learning exercises for faculty to find resources to promote active learning pedagogy in higher education. These include "MERLOT pedagogy portal, TIEE, FIRST II, National Digital Science Library, and especially BioSciEdNet and SENCER Digital Library" (Armbruster et al., 2009, p. 204).

In addition, classroom space has become a focus of interest, in the light that changing traditional classrooms into spaces that more readily accommodate the active learning pedagogy would effectively promote learning outcomes. Currently, there are three major pioneer projects in higher education that focus on changing the classroom space to enhance active learning pedagogy. One of these is the SCALE-UP project—Student-Centered Active Learning Environment for Undergraduate Programs—operated by North Carolina State University, Raleigh (Beichner, n.d.) project. In this project classrooms are equipped with round tables to facilitate student group work more easily. In addition, laptop connectors, projectors, and wall screens help students share their work both with each other and with the class as a whole. In these classrooms, the instructor is positioned at a podium in the center of the room. The instructor may assign problems to the student groups, is able to easily move around the room to help facilitate group learning, and can then draw the whole class's attention to individual or group work. A study on the SCALE-UP project showed (Beichner, Saul, Allain, Deardorff, & Abbott, 2000) that changing the classroom space enhances student learning by increasing student attendance, increasing the level of conceptual learning, enhancing problem solving skills, and improving student attitudes toward learning. Similar to SCALE-UP, TEAL [Technology Enabled Active Learning] which is operated by Massachusetts Institute of Technology, not only changed space but also added software that may enhance visualization and simulations. One study on TEAL showed that the project seemed to succeed in lowering the failing rates and increasing the level of understanding concepts. (Dori, Barak, & Adir, 2003) Finally, the University Minnesota launched Active Learning Classrooms (ALCs). ALCs are featured with "a 360 degree glass-surface marker board, multiple flat-panel display projection systems, roundtables that accommodate nine students each, and a centered teaching station that allows selection and display of table-specific information." (<http://www.classroom.umn.edu/projects/ALCOverview.html>)

While the ALCs are described as modification from SCALE UP and TEAL (<http://www.classroom.umn.edu/projects/ALCOverview.html>), it seems that the ALCs are very similar to SCALE-UP classrooms. Brooks (2012)'s study on ALCs indicated very interesting aspects of instructors' and students' behaviors. The lecture type of delivery was observed more in traditional classroom than in ALCs, while instructors tried to deliver the course in the same way (Brooks, 2012). Although group activities observed were not significantly differently in ALCs than in traditional classrooms, Brooks' (2012) study on the impact of space on students' and instructors' behaviors

indicated that space influences students' and instructors' behaviors that, in turn, would influence student engagement in learning.

In his study, Brooks (2012) also discussed different spaces (traditional classrooms and ALCs) can be used more appropriately to different types of teaching methods. What may be more important is to recognize that traditional classrooms may be appropriate for lecture delivery and active learning classrooms are more suitable for student engagement.

Methods

As aforementioned, we examined the effect of active learning pedagogies on students' satisfaction of learning processes in active learning classrooms and traditional classrooms. In order to do this, we categorized students' satisfaction of learning processes (dependent variable) into individual and group learning processes, as students in our sample were required to work individually and in groups, depending on the activities in class. Next, we modeled our hypotheses to test whether active learning pedagogical activities will generally influence students' satisfaction in individual and group activities (Hypotheses 1 & 2), as well as whether active learning pedagogical activities will influence students' satisfaction in individual and group activities in traditional classroom settings (Hypotheses 3 & 4). Since Hypotheses 3 and 4 examined the relationship between active learning pedagogies and students' satisfaction of learning processes in traditional classrooms, we used a subset of our sample to focus on traditional classrooms only. Therefore, we provided descriptive statistics (Table 2) and the results of our regression models (Table 3 & 4) using the total sample for Hypotheses 1 and 2 while providing descriptive statistics (Table 5) and regression models (Table 6 & 7) using a subset of our sample focusing on traditional classroom settings for Hypotheses 3 and 4. Ordinary least squares (OLS) regression models were used to test the hypotheses in our study. In the following sections, we explain our sample, procedures, variables, and results.

Participants

For this study, we surveyed sixteen classes in a private liberal arts university taught by seven different faculty using a student assessment tool that was created for the University of Minnesota STSS Research Project. While the survey was available online, this survey was used with permission of the director of the STSS project. We altered the original first five questions by adding questions that elicited information on age, gender, major, and year in school. The classes in our study included eleven undergraduate classes and five graduate courses. Five of the classes were taught in

active learning classrooms (four undergraduate and one graduate), and eleven of the classes were taught in traditional classrooms (seven undergraduate and four graduate). These classes represented a variety of disciplines. For the undergraduate classes, business, economics, geography, political science, and theology were represented with some classes serving majors and some serving non-majors as a part of their liberal arts study, and others were populated with a combination of majors and non-majors. The graduate classes surveyed included courses in business and education, serving graduate programs in Business Administration, Education Administration, and School Counseling.

Procedure

In the eighth and ninth week of the ten-week quarter, depending on the class schedule, a FERPA-trained student research assistant visited the designated class and administered the survey to the students. The Informed Consent Form was attached to the survey, and a student signified their consent by filling out the survey. In order to protect their privacy, all students were instructed to remain in their seats for the twenty minute period allowed for the survey so that those who did not participate were not distinguishable from those who did. The faculty member was also asked to leave during this time. To maintain procedural consistency, the Informed Consent form and its accompanying questionnaire were administered by the same FERPA trained research assistant in most of the classes. At the end of each survey, the research assistant delivered the completed and uncompleted surveys to the institution's Instructional Technology Office where the results from all the surveys were entered into a specially created SurveyMonkey by a FERPA trained student worker employed by the institution's Instructional Technology Services office.

In order to facilitate analysis, the responses were coded. For questions nine through forty, answers were coded as Strongly agree = 4, Agree = 3, Disagree = 2, Strongly disagree = 1. For questions forty-one through fifty-eight answers were coded thusly: More than once per class = 8, About once per class = 7, About once a week = 6, Two or three times a month = 5, About once a month = 4, Two or three times a quarter = 3, About once a quarter = 2, Never = 1. For questions fifty-nine through sixty-one the responses were coded: Easy = 5, Somewhat easy = 4, Neither easy nor difficult = 3, Somewhat difficult = 2, Difficult = 1.

Because we did not link student answers to individual students in order to protect their privacy, it was possible for a student to take our test more than once by virtue of being in two or more of the classes in our study. Since we asked each student to answer the questionnaire focusing on the class in

which the survey was administered, the negative effects appeared minimal.

Variables

Student Satisfaction. This dependent variable was constructed from a principal components analysis to reduce the twenty-eight measures of student satisfaction into dependent variables for regression analyses. The twenty-eight items (numbers 9-36) were based on the University of Minnesota STSS Research Project survey that were designed to measure student satisfaction. These items used a 4-point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree). Results showed that a simple structure of loadings was achieved by extracting two components from eight measures of student satisfaction, which accounted for 65.85 percent of the total variance explained (Table 1).

The Kaiser-Myer-Olkin measure of sampling adequacy (MSA) for the set of variables was .87, exceeding the recommended minimum of .50 for overall MSA (Kaiser, 1974). Bartlett's test of sphericity was statistically significant at $p < .001$. After a further examination of the dimensions of the components, student satisfaction was operationalized into two dependent variables for our analyses. These two were 1) student satisfaction in promoting participation with regard to group-based activities (e.g., "Helps me develop connections with my classmates."), and 2) student satisfaction in promoting individual development with regard to understanding subject matter and professional skills (e.g., "Helps me to define issues or challenges and identify possible solutions."). Thus, the two dependent variables were designated $satisfaction_{group}$ and $satisfaction_{individual}$ respectively. Internal consistency for these two dependent variables was good, Cronbach's $\alpha = .87$ for $satisfaction_{group}$ and Cronbach's $\alpha = .86$ for $satisfaction_{individual}$. The mean scores were used for analysis: a higher score indicated higher student satisfaction.

Active Learning Pedagogy. Eighteen items (numbers 41-58 on the survey) from the student assessment tool created for the University of Minnesota STSS Research Project were used to assess the amount of active learning pedagogy present in each class. Each of these eighteen items focused on a different aspect of active learning pedagogy. For example, one item focused on whether or not students worked in small groups (2-3) on an in-class learning activity, and another focused on the degree that "the instructor consulted with individual students during an in-class learning activity." To facilitate the assessment of the level of active learning pedagogy, each variable counted as a measure of active learning pedagogy when the activity was present at least "once a week" or more. This meant that the variable "Active Learning

Pedagogy" had a potential range of 1 to 18 with a mean of 9.90 ($S.D. = 4.10$ and had approximate normality (skewedness = $-.12$).

Classroom type, Student Sex, and Course Level.

A dummy variable (traditional classroom, active learning classroom) was used to indicate the type of classroom in which a given course was held. Students' sex (male, female) and the level of course (undergraduate, graduate) were also dummy coded to be included in the regression analyses as control variables.

Results

Hypothesis 1: Active learning pedagogical activities will influence students' satisfaction with their individual learning process positively.

Table 2 displays the means, standard deviations, and bivariate correlations for Hypotheses 1-2, which are regressions using the dependent variables $satisfaction_{individual}$ (Hypothesis 1) and $satisfaction_{group}$ (Hypothesis 2) on classroom type and active learning pedagogy. The variables that significantly correlated with $satisfaction_{individual}$ were active learning pedagogy ($r = .16, p < .01$) and classroom type ($r = -.13, p < .01$). The variables that significantly correlated with $satisfaction_{group}$ were also active learning pedagogy ($r = .15, p < .01$) and classroom type ($r = -.12, p < .01$).

We conducted an ordinary least squares (OLS) regression analysis to predict student $satisfaction_{individual}$ from active learning pedagogy (Table 3 displays the results). Predictors were entered hierarchically: Model 1 includes control variables only (e.g., sex, level of course), Model 2 includes control variables and classroom type (e.g. traditional vs. active learning classroom), and Model 3 includes all variables including active learning pedagogy. Model 2 explained a proportion of the variance in student $satisfaction_{individual}$, $R^2 = .15$, $F(3, 349) = 2.69$, $p = .047$. Classroom type was a statistically significant predictor of student $satisfaction_{individual}$, $B = -.16$, $p = .017$, suggesting that with control variables held constant, the active learning classroom was associated with higher student $satisfaction_{individual}$ as compared to a traditional classroom. Model 3 explained a proportion of the variance in student $satisfaction_{individual}$, $R^2 = .20$, $F(4, 348) = 3.52$, $p = .008$. Active learning pedagogy was a statistically significant predictor of student $satisfaction_{individual}$, $B = .02$, $p = .016$, supporting Hypothesis 1, suggesting that with control variables held constant and the classroom type considered, the number of active learning pedagogy methods was positively associated with student $satisfaction_{individual}$. Sex of the student ($B = -.06$, $p = .322$) and level of course ($B = -.12$, $p = .063$) were not statistically significant.

Table 1
Component Analysis for Student Satisfaction (Dependent Variable)

Dependent Variable	Questions
"Satisfaction _{individual} "	Q11: Helps me develop professional skills that can be transferred to the real world Q27: Helps me to define issues or challenges and identify possible solutions Q30: Deepen my understanding of a specific field of study
"Satisfaction _{group} "	Q10: Facilitates multiple types of learning activities Q13: Helps me develop confidence in working in small groups Q14: Promotes discussion Q15: Encourages my active participation Q18: Helps me develop connections with my classmates

Table 2
Bivariate Correlations, Means, and Standard Deviations for the First-round Study Variables

Variable	1	2	3	4	5	6
Student satisfaction _{individual}	—					
Student satisfaction _{group}	.96***	—				
Student's sex	-.08	-.07	—			
Level of course	.01	-.01	-.13***	—		
Type of classroom	-.14***	-.13**	.10	.12**	—	
Active learning pedagogy	.16***	.15***	-.13**	.21***	-.19***	—
<i>N</i>	361	361	356	361	361	358
<i>M</i>	2.66	2.69	.63	.17	.69	10.37
<i>SD</i>	.56	.58	.48	.38	.46	3.98

* $p < .10$; ** $p < .05$; *** $p < .01$.

Table 3
Ordinary Least Squares Regression Analyses Predicting Student Satisfaction_{individual} from Active Learning Pedagogy

Predictor	<i>B</i>	β	<i>t</i>	<i>R</i> ²
Model 1				.11
Student's sex	-.09	.06	-1.47	
Level of course	.00	.08	.10	
Model 2				.15**
Student's sex	-.07	.06	-1.70	
Level of course	.03	.08	.41	
Type of classroom	-.16**	.07**	-.24**	
Model 3				.20***
Student's sex	-.06	.06	-.99	
Level of course	-.01	.08	-.15	
Type of classroom	-.12*	.07*	-1.87*	
Active learning pedagogy	.02**	.01**	2.43**	

* $p < .10$; ** $p < .05$; *** $p < .01$.

Table 4

<i>Ordinary Least Squares Regression Analyses Predicting Student Satisfaction_{group} from Active Learning Pedagogy</i>				
Predictor	<i>B</i>	β	<i>t</i>	<i>R</i> ²
Model 1				.11
Student's sex	-.09	-.07	-1.36	
Level of course	-.03	-.02	-.39	
Model 2				.14*
Student's sex	-.07	-.06	-1.08	
Level of course	-.01	-.01	-.10	
Type of classroom	-.15*	-.12*	-2.16*	
Model 3				.18*
Student's sex	-.06	-.05	-.91	
Level of course	-.05	-.04	-.64	
Type of classroom	-.11	-.09	-1.64	
Active learning pedagogy	.02**	.13**	2.36**	

* $p < .10$; ** $p < .05$; *** $p < .01$.

Table 5

<i>Bivariate Correlations, Means, and Standard Deviations for the Second-round Study Variables</i>					
Variable	1	2	3	4	5
Student satisfaction _{individual}					
Student satisfaction _{group}	.96***				
Student's sex	-.11	-.10			
Level of course	.02	-.00	-.24***		
Active learning pedagogy	.16***	.15***	-.16**	.26***	
<i>N</i>	248	248	245	248	246
<i>M</i>	2.6	2.6	.66	.20	9.87
<i>SD</i>	.57	.60	.47	.40	4.10

* $p < .10$; ** $p < .05$; *** $p < .01$.

Hypothesis 2: Active Learning Pedagogical Activities Will Influence Students' Satisfaction with Their Group Learning Process Positively. We conducted an ordinary least squares (OLS) regression analysis to predict student satisfaction_{group} from active learning pedagogy (Table 4 displays the results). Predictors were entered hierarchically: Model 1 includes control variables only (e.g., sex, level of course), Model 2 includes control variables and classroom type (e.g. traditional vs. active learning classroom), and Model 3 incorporates all variables, including active learning pedagogy. Model 2 explained a proportion of the variance in student satisfaction_{group}, $R^2 = .14$, $F(3, 349) = 2.18$, $p = .090$. Classroom type was a statistically significant predictor of student satisfaction_{group}, $B = -.15$, $p = .032$, suggesting that with the control variables held constant, the variable "active learning classroom" was associated with higher student

satisfaction_{group} as compared to the variable "traditional classroom." Model 3 explained a proportion of the variance in student satisfaction_{group}, $R^2 = .18$, $F(4, 348) = 3.04$, $p = .017$. Active learning pedagogy was a statistically significant predictor of student satisfaction_{group}, $B = .02$, $p = .019$, supporting Hypothesis 2, suggesting that with control variables held constant and the classroom type considered, the number of active learning pedagogy methods was positively associated with student satisfaction_{group}. Sex of student ($B = -.06$, $p = .364$) and level of course ($B = -.05$, $p = .524$) remained statistically insignificant.

Hypothesis 3: Active Learning Pedagogical Activities in Traditional Classrooms Will Influence Students' Satisfaction with Their Individual Learning Process Positively. Table 5 displays the means, standard deviations, and bivariate correlations for the study variables for Hypotheses 3-4, which are

regressions of satisfaction_{individual} (Hypothesis 3) and satisfaction_{group} (Hypothesis 4) on active learning pedagogy in a traditional classroom setting. The study variable that significantly correlated with satisfaction_{individual} was active learning pedagogy ($r = .16, p < .01$). The study variable that significantly correlated with satisfaction_{group} was also active learning pedagogy ($r = .15, p < .01$).

We conducted an ordinary least squares (OLS) regression analysis to predict student satisfaction_{individual} within traditional classroom from active learning pedagogy (Table 6 displays the results). Predictors were entered hierarchically: Model 1 includes control variables only (e.g., sex, level of course), and Model 2 includes all variables including active learning pedagogy. Model 2 explained a proportion of the variance in student satisfaction_{individual}, $R^2 = .18, F(3, 239) = 2.75, p = .043$. Active learning pedagogy was a statistically significant predictor of student satisfaction_{individual}, $B = .02, p = .024$, supporting Hypothesis 3 and thus suggesting that with control variables held constant, the number of active learning pedagogy methods in traditional classrooms was positively associated with student satisfaction_{individual}. Sex of student ($B = -.12, p = .142$) and level of course ($B = -.06, p = .511$) were not statistically significant.

Hypothesis 4: Active Learning Pedagogical Activities in Traditional Classrooms Will Influence Students' Satisfaction with Their Group Learning Process Positively. We conducted an ordinary least squares (OLS) regression analysis to predict student satisfaction_{group} within traditional classroom from active learning pedagogy (Table 7 displays the results). Predictors were entered hierarchically: Model 1 includes control variables only (e.g., sex, level of course), and Model 2 includes all variables including active learning pedagogy. Model 2 explained a proportion of the variance in student satisfaction_{group}, $R^2 = .17, F(3, 239) = 2.44, p = .065$. Active learning pedagogy was a statistically significant predictor of student satisfaction_{group}, $B = .02, p = .025$, supporting Hypothesis 4 and suggesting that with control variables held constant, the number of active learning pedagogy methods in traditional classrooms was positively associated with student satisfaction_{group}. Sex of student ($B = -.10, p = .213$) and level of course ($B = -.10, p = .342$) were not statistically significant.

Discussion

Are students satisfied with their individual learning process when active learning pedagogy was used in a traditional classroom? Students were satisfied with their individual learning process in a traditional classroom when active learning pedagogy was used. From the results of Hypothesis 1 and

Hypothesis 3 that tested if active learning pedagogical activities affected students' satisfaction with the individual learning process, it was observed that students' satisfaction with individual learning process was significantly increased in ALCs compared to measures of satisfaction in traditional classrooms. This may be due to the large screen TVs available for each group, writable walls, and the movable tables present in ALCs. These elements may contribute to an atmosphere of active learning and thus encourage students to feel more satisfied with their learning process. While students showed higher satisfaction with their individual learning process in ALCs than those in traditional classrooms, further results clearly showed students' satisfaction in both active learning and traditional classrooms were significantly related to active learning pedagogical activities. Satisfaction was not significantly related to gender or level of course (undergraduate or graduate).

As for the characteristics of classrooms, both active learning classrooms and traditional classrooms may be considered not to be optimal for students' individual learning process. Active learning classrooms are ideal for enhancing student engagement in groups, and traditional classrooms are efficient for delivering information. However, our finding suggests active learning pedagogical activities make it possible for students to be satisfied with their individual learning process. It is consistent with the study where students' evaluation on their learning goals became more positive when active learning and student-centered pedagogy were utilized, and students attitudes were improved (Armbruster et al., 2009).

Are students satisfied with their group learning process when active learning pedagogy was used in a traditional classroom? Not only with their individual learning process, but also with their group learning process (Hypothesis 2 and Hypothesis 4), students' satisfaction was increased in ALCs than those in traditional classrooms. This is not surprising because active learning classrooms are designed specifically for efficient group work: ALCs with eight chairs around each circled and positioned table, TV screens for each grouped table, and four writable walls may enhance students' satisfaction with their group learning process. More notably, further results give much hope to faculty teaching in traditional classrooms. Students' satisfaction with their group learning process in traditional classrooms were affected by active learning pedagogical activities. Even in the traditional classroom where there are only either desks or chairs at rectangular tables, one or two white board(s), and a computer with a projector, students can feel satisfied with their group learning process when active learning pedagogy activities are implemented. Active learning pedagogy activities seem to be able to override the rigidity of classroom structure in the student group learning process.

Table 6
*Ordinary Least Squares Regression Analyses Predicting Student Satisfaction_{individual} in Traditional Classrooms
 from Active Learning Pedagogy*

Predictor	<i>B</i>	β	<i>t</i>	<i>R</i> ²
Model 1				.11
Student's sex	-.14*	-.11*	-1.71*	
Level of course	-.01	-.00	-.12	
Model 2				.18*
Student's sex	-.12	-.10	-1.47	
Level of course	-.06	-.04	-.66	
Active Learning Pedagogy	.02**	.15**	2.28**	

* $p < .10$; ** $p < .05$; *** $p < .01$.

Table 7
*Ordinary Least Squares Regression Analyses Predicting Student Satisfaction_{group} in Traditional Classrooms
 from Active Learning Pedagogy*

Predictor	<i>B</i>	β	<i>t</i>	<i>R</i> ²
Model 1				.11
Student's sex	-.13	-.10	-1.71*	
Level of course	-.04	-.03	-.12	
Model 2				.17*
Student's sex	-.10	-.08	-1.47	
Level of course	-.10	-.06	-.66	
Active Learning Pedagogy	.02**	.15**	2.28**	

* $p < .10$; ** $p < .05$; *** $p < .01$

Does a classroom have to be configured as an active learning classroom to successfully accommodate active learning pedagogical activities as measured by student satisfaction? While this study confirmed that space may help enhance active learning pedagogical activities (Brooks, 2012), further analysis showed that intentional implementation of active learning pedagogy can enhance students' satisfaction with their learning process no matter where one is teaching. It means active learning pedagogy is the key. Whether space is accommodated in active learning classrooms or in classrooms that have no benefits for students' active engagement, instructors' intentional planning and implementation of activities help students' learning processes. It means instructors need to bring resources on their own that will help group work (e.g., markers, a large paper, tapes, etc.) relevant to active learning pedagogy activities. It also suggests that not all the classrooms have to be remodeled for students' active engagement.

Can active learning pedagogy be executed effectively into traditional classrooms as measured by student satisfaction? Some researchers prefer lecture format, and other researchers argue that both lecture format and other instructional methods need to be used according to the subject matter and the objectives of the class. Our results appear to add to the literature supporting the supposition that more engagement methods would be more appreciated by students no matter where they are. Brooks (2012) found in his study that in the traditional classrooms, faculty are more likely to stay at the podium and to utilize a lecture format. Space is a huge factor impacting faculty's behaviors. However, this study confirms that faculty can intentionally provide more active learning pedagogical activities in traditional classrooms and, in turn, students' satisfaction with their learning process can be increased. This confirms that faculty are crucial to students' learning (Umbach & Wawrzynski, 2005).

Our findings also add to the literature an important notion that faculty do not need to completely make over their whole curriculum to involve students' in active engagement. Although this study primarily concentrated on student satisfaction, preliminary analysis of the types of active learning activities that were transferred into the TC by report of frequency included large and small group activities, the work of individuals or groups of students being displayed or projected to the whole class, and faculty interaction with individuals or groups of students. As indicated in the methods section, active learning pedagogy in this study was defined as using any of these active learning pedagogy activities once a week (ranging 1-18). At least one active learning pedagogical activity, especially in a graduate course where students meet in class once a week, can be enough for students to feel satisfied with their learning processes.

Anecdotally, faculty members in the active learning community (ALC) shared that they tended to spend more time before class in class preparation once they were committed to active learning pedagogy. This is consistent to Niemi's research (2002) with student teachers in teacher education. With active learning pedagogy, the teacher acts more as a facilitator rather than a lecturer, by both making students more responsible for their own learning and using students as resources for their learning. While ALCs may make it easier for faculty to use more active learning instructional methods by being set up to encourage group activities, in traditional classroom settings the faculty have to be self-motivated to provide more active learning pedagogical activities, to pay more attention to orchestrating when the activities need to be implemented and how they should be implemented, and to observe how students learn through the activities in the classroom. In this case, what is needed is support for faculty. Such as a community group where faculty members can motivate each other to be more cognizant of what they are doing in classroom, share ideas of active learning pedagogical activities, and encourage each other to use active learning pedagogical activities more often. Professional development workshops for active learning pedagogy may help more faculty members be committed to practicing active learning pedagogy and maintain their practice with active learning pedagogy.

Active Learning Pedagogy Beyond Undergraduate Engineering and Science

A significant result of this study concerns the use of active learning pedagogy in classrooms other than engineering or science, as well as in graduate

classrooms. This study showed that students' satisfaction both with their individual and group learning process was positively affected by active learning pedagogical activities both at the undergraduate and graduate level. It is clear from the results that active learning pedagogy can increase students' satisfaction in their learning process (both individual and group) even at the graduate level. In particular, the results may have special salience for the participants we studied. It is worth to note that the classes are not engineering or science courses: participating undergraduate courses are business, economics, geography, political science, and theology, and graduate levels are business and education related courses. Students in the courses other than engineering and/or sciences can benefit from faculty's active learning pedagogical approaches.

Limitations and Future Research

This study has several limitations. First, there may be an error in students' perception of how intensively the active learning methods were used, as was illustrated in surveys given to students after the quarter was almost finished. Students may not remember exactly how many times active learning instructional methods were used in their course. At the same time, some students may not pay good attention to instructional methods. Therefore, the reported instructional methods by the students in the study can be very subjective. Given that the frequency of instructional methods can be lower than what really happened in class, the results of this study can be considered to be very significant.

Second, objective documentation on what kinds of active learning pedagogy activities are used in a classroom would make a study stronger. Also, examining both the instructor's and students' perception on active learning pedagogy activities would be worthwhile in order to see how students' metacognitive awareness helps increase their satisfaction of learning process as well as learning itself.

Third, the results may not be generalizable because of the size of the participant pool. We had only 317 undergraduate students and 67 graduate students. At the same time, the number of classes was pretty small. An expanded model with more classes would make generalization more feasible.

Fourth, since this current study did not collect the evaluation piece of the student outcomes in classes, we may not see what kind of connections students' satisfaction can have with students' outcomes. A study to examine a direct connection between students' satisfaction and learning outcomes in both undergraduate and graduate levels with active learning pedagogies would be beneficial.

Conclusion

While this study has several limitations, the results are worthwhile to show active learning pedagogy activities are a significant factor in positively influencing students' satisfaction with their individual and group learning processes in both active learning classrooms and traditional classrooms. At the same time, this study suggests that active learning pedagogy activities affect students' satisfaction positively in graduate level courses. In higher education today, new technology is introduced, and new ways of teaching are invented and practiced. However, implementing new technologies at a large scale could be costly and sometimes impossible to implement across campus. In the limitedly equipped classrooms, learning can be promoted and enhanced with intentional implementation of active learning pedagogy activities by faculty. Faculty matter.

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Using Diffusion of Innovation Theory to Promote Universally Designed College Instruction

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Universal Design applied to college instruction has evolved and rapidly spread on an international scale. Diffusion of Innovation theory is described and used to identify patterns of change in this trend. Implications and strategies are discussed for promoting this inclusive approach to teaching in higher education.

Forty years have passed since the gateway to higher education broadened for students with disabilities through passage of the Rehabilitation Act of 1973. Four decades have yielded significant changes, many the result of advocacy efforts by students and their parents, disability service providers, and incremental civil rights decisions by the courts and the federal Office for Civil Rights. A consequential paradigm shift now reframes the analysis of disability away from the medical model where disability is inherent to the individual. In the current social model, disability “stems from the failure of society to adjust to meet the needs of disabled people” (Loewen & Pollard, 2010, p. 9). Society is responsible to adapt and create environments that are inclusive and flexible. Equal access, preferably achieved by design, not by accommodations, is the goal.

Access and inclusion, inherent values in the social model of disability, are key elements of universal design (UD), a concept familiar to the field of disability. Since UD’s genesis in the architectural field contiguous with the implementation of Section 504, the concept has followed a trajectory of change not unlike many novel ideas. As its applications in one field have gathered widespread support, other disciplines have adapted the concept to their contexts, in part because of UD’s overall appeal and generalizability. In higher education the application of UD to teaching has been the focus of intensive work and exploration. As described in this manuscript, examples of UD’s adoption and its applications are numerous. But what do we know about the progression of UD in college teaching? Has it evolved according to identifiable patterns of change? If so, what are the implications for promoting and sustaining this approach to inclusive higher education? In sum, does the movement for infusing inclusive instructional strategies in college teaching reflect characteristics of a model of change? To address this query, this manuscript examines two distinct concepts: universal design (UD) as applied to teaching, and diffusion of innovation (DOI), a theory of change proposed and studied by Rogers (2003). The intent is to explore elements of the DOI theory that

offer substantive points to ponder about the process of change and the potential for UD to permeate postsecondary instruction.

The Evolution of Universal Design and Its Applications

In the early 1970s, the idea of universal design germinated from the efforts of Ronald Mace, an architect, and his colleagues at the Center for Universal Design (CUD) at North Carolina State University. They articulated a value system for the architectural and design fields that assumes human diversity as the norm. UD is defined as the design of products and environments to be usable by all people to the greatest extent possible without having to retrofit accommodations to assure access (Welch, 1995).

With its intuitive appeal – who could disagree with the notion of design for inclusion? – the extension of UD to education has sparked creative applications subsumed in several models. At the K-12 level, discussions in the early 1980s explored ways to adapt the curriculum including the emerging role of technology to enhance learning for students with learning disabilities. In 1984, the Center for Applied Special Technology (CAST) initiated its work in creating Universal Design for Learning (UDL), “a set of principles for curriculum development that give all individuals equal opportunities to learn” (National Center on Universal Design for Learning, n.d.). In the past decade, CAST’s efforts have expanded to include UDL based professional development activities at the postsecondary level. Another application is seen in the model, Universal Design in Education (UDE), defined by Bowe as “the preparation of curricula, materials, and environments so that they may be used, appropriately and with ease, by a wide variety of people” (2000, p. 45). Bowe described the application of the seven principles of UD articulated by the Center for Universal Design with examples from K-postsecondary educational settings.

Extending the application of UD solely to postsecondary settings, Silver, Bourke, and Strehorn

(1998) conducted a pilot study to explore faculty ideas about universal instructional design (UID) and its implementation within a university setting. Through a government funded UID initiative at the University of Guelph (n.d.), faculty training and instructional materials incorporated the seven UD principles. Multiple teaching methods created by faculty offered approaches to accommodate diverse students. Higbee (2003) spearheaded another project based on UID at the University of Minnesota, however, widespread efforts to implement the UID model are not reflected in the literature due in part, as is so often the case, to lack of funding.

Scott, McGuire, and Foley (2003) described Universal Design for Instruction (UDI), a framework for three federally funded projects at the University of Connecticut based on the seven principles from the CUD and two drawn from literature sources on effective instruction and college teaching. Focusing exclusively at the postsecondary level, project activities included development of two web sites, faculty training and implementation activities at partner colleges and universities, and publications. The UDI framework also guided a faculty development curriculum project at Longwood University to assist faculty in the Modern Languages program in designing strategies for inclusive pedagogy (Scott & Edwards, 2012). Finally, Burgstahler (2007) has used the descriptor Universal Design of Instruction, an approach that draws on the CUD principles and underlies numerous initiatives of the DO-IT Center at the University of Washington.

What unifies these different applications of UD is the notion of diversity and ways to proactively plan for instructional access for students with disabilities and other diverse learners. Within a relatively short period of time, UD applied to instruction has spawned numerous initiatives extending to the international level. Activities range from professional development training for K-12 teachers, postsecondary faculty, and disability service providers to funding to operationalize the concept and begin to gather data on implementation results and a few research studies. These developments affirm the appeal of universal design for advancing instructional access and inclusion and underscore a pattern of change worthy of analysis if adoption is to become more widespread. Everett Rogers, a communications scholar, studied the spread of innovations by means of social systems. His work is relevant as it addresses elements of change that influence the rate by which a novel idea germinates and is widely adopted. Its application to the UD movement in postsecondary education is intriguing.

Diffusion of Innovation: A Theory of Change

The idea of diffusion, or the spread of new ideas and products, has been studied since the beginning of

the 20th century. Rogers (2003) is credited with observing a series of general, common elements across early diffusion studies from a variety of disciplines including seminal work in his own field of rural sociology. Pioneers in diffusion study, Ryan and Gross (1943) and others, were examining the spread and adoption of agricultural techniques in the cultivation of hybrid corn and use of weed killers in Midwest farming communities. Rogers and his colleagues built upon a growing understanding of generalizable change processes. They recognized the influence of select factors on the rate of adoption of new farming techniques in local Midwest communities. Communication channels, interpersonal networks, and social modeling were particularly powerful elements in the change process. Across broader cultural and disciplinary contexts, Rogers identified general patterns and similarities in the change process. In his 1962 seminal work on the topic entitled *Diffusion of Innovations*, Rogers first proposed significant and universal factors that help explain how social change occurs. His observations and propositions on the diffusion of ideas and products have undergone multiple iterations and expansions as DOI theory has evolved and grown (as cited in Rogers, 2003).

Rogers (2003) defined Diffusion of Innovation as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (p. 3). The functional value and applicability of DOI theory to many disciplines are documented by its use in empirical research over the past several decades. Educators examining adult education practices (Cervero & Rottet, 1984), medical researchers interested in the adoption and use of new drugs by medical doctors (Leslie & Rosenheck, 2002), and scholars of public health policy (Bradley, Webster, & Baker, 2004) all have applied the theory to their work. An additional testament to the validity and usefulness of the theory is its ability to evolve and continue to be applicable to emerging innovations and social issues (Dearing, 2009). More current applications reflect contemporary social issues not under discussion when the commonalities of social change and DOI theory were first proposed. For example, DOI theory has been used to inform AIDS outreach and prevention practices (Barker, 2004), understand terrorist social networks (Rogers, 2003), and examine the public adoption of the Apple iPhone (Vaccaro, Ahlawat, & Cohn, 2010). Notably, the substantive questions that DOI theory attempts to explain including how, why, and at what rate new ideas spread through cultures remain current and timely.

Components of DOI Theory

As a framework for examining the process of change, DOI theory incorporates four overarching

components that characterize the spread of ideas that are perceived as new: (a) the innovation itself, (b) the communication channels used for education and outreach, (c) the time involved in adoption of an idea, and (d) the social system being introduced to the innovation (Rogers, 2003). Within these four elements of the framework, there are growing numbers of sub theories and concepts as DOI theory is applied and continues to evolve. Each main component is highlighted as a backdrop for considering the diffusion of UD in postsecondary instruction.

The innovation. In DOI theory, innovation refers to “an idea, practice, or object that is perceived as new” (Rogers, 2003, p.12). Innovations may include, for example, anything from a new form of technology, to educational policy, to emerging medical practices. Certain attributes of innovations relate to the likelihood and rate of their adoption. Individuals are more likely to adopt an innovation that (a) is perceived as having some relative advantage over current practice, (b) is compatible with existing values and needs, (c) is not too complex, (d) can be tested for a limited time before adoption, and (e) has observable results and outcomes. When an innovation offers some flexibility, such as allowing the user to modify or adapt it to fit his or her needs, the likelihood of adoption increases. Diffusion scholars also have found that this process of “re-inventing” or customizing by the user, strengthens the likelihood of sustained use of the innovation.

Communication channels. Distributing or disseminating information about an innovation is viewed as a social and dynamic process within DOI theory. Different methods of communication are effective at different times in the adoption process. *Mass media* channels, including newspapers, television, radio, and now the Internet, for example, are quick and efficient means of reaching a large audience of potential adopters. Mass media are most effectively used to increase general knowledge and broad awareness of the innovation. In contrast, *interpersonal communication* channels involve face-to-face communication with two or more individuals including outreach in such venues as technical assistance structures, professional conferences, workshops, classes, and so forth. This form of communication is more persuasive in encouraging individual adopters to embrace the innovation. Diffusion studies also indicate that *near peers* or individuals who are most similar to the potential adopters along such lines as education levels comprise the most effective communication channels in promoting adoption of the innovation.

Time. There are a number of aspects of DOI theory that involve the consideration of time in the adoption of an innovation. Three relevant sub theories are described.

The innovation-decision process. Diffusion scholars have found that the decision to adopt an

innovation occurs in five progressive stages. Beginning with initial *knowledge and awareness*, adopters must first learn about the innovation. The need to know its elements as well as how and why it works is often addressed through mass media communication channels. This is followed by *persuasion* of the value of the new practice, and a *decision* to adopt it. Interpersonal networks and peers are often the best source of information on the advantages and disadvantages of the innovation that inform these stages. Adopters then *implement* the innovation including possible customization to meet specific needs and then *confirm* their decision. The length of time required to move through the innovation-decision process can vary widely across individuals and circumstances.

Individual innovativeness. Some individuals adopt a new idea much more readily than others. Rogers (2003) described this quality as innovativeness, or earliness in relation to others in adopting an innovation. Adopter categories range from *innovators* (the small number of risk-takers who are first to adopt) to *laggards* (the small number who are the last to adopt or never adopt an innovation). In between these two extremes are the *early adopters* who follow the lead of innovators and play an important role by adopting the innovation and furthering dissemination to peers in their local network. They are often viewed as *opinion leaders* in the system to whom others look for advice and information. Soon to follow are the *early majority* who adopt new ideas but are not typically viewed as opinion leaders in the group. Finally, the *late majority* approach innovation with skepticism and caution waiting until most of their peers have adopted the innovation and there is substantial proof of its merits.

Rate of adoption. While the quality of innovativeness pertains to individual adoption decisions, the rate of adoption provides a measure of the cumulative number of adopters in a field or social system. When plotting this cumulative number over time, the resulting distribution reflects an S-shaped curve. Beginning with a few innovators, the practice or technology is next embraced by the early adopters and the early majority, and the trajectory of the S-curve climbs. Numbers increase rapidly as the influence of early adopters and the early majority persuades the later majority. At this point, cumulative numbers begin to level off with the final adoption of the innovation by the remaining few laggards. Although patterns are consistent across diffusion studies, the rate of diffusion may vary widely, and this is reflected by the slope of the S-curve. A steeper S-curve represents a more rapid diffusion process. As described above, the perceived attributes of the innovation, the innovativeness of individual adopters, and the sources and channels of

communication all play a role in how rapidly an innovation is diffused over time.

Social systems. Diffusion of an innovation occurs within a social system comprised of members who share a common objective. The system may be made up of individuals, informal groups, subgroups, or professional organizations. Social structures within the system that influence diffusion are often both *formal* (e.g., the bureaucratic hierarchy of a government agency) and *informal* (e.g., interpersonal linkages between a system's members). Members of the system have been found to function in some predictable ways. Communication structures often reveal that members who are most alike (i.e., near peers) communicate most readily with each other. Early adopters within the system who are also connected with interpersonal networks may serve as *opinion leaders* who can be quite influential in promoting the adoption of an innovation within a social system. *Change agents* who actively work to promote an innovation within a system often capitalize on the influence of opinion leaders.

The Movement for UD Based Pedagogy: Is DOI Theory Relevant?

As colleges examine ways to produce student learning (Hutchings, Huber, & Ciccone, 2011), several trends illustrate a growing movement as Universal Design (UD) based instruction expands access for an increasingly diverse student population. Diffusion of Innovation (DOI) theory offers a provocative lens for analyzing the progress and trajectory of this pedagogical change. An examination of two types of dissemination efforts follows.

Dispersion of UD Awareness

A quick scan of the higher education landscape confirms widespread interest and applications. Discussions of UD and inclusive teaching now extend to national and international audiences, illustrating the role communication channels play in the transmission of a new idea from one individual or community to another. In the culture of higher education, conferences and grass roots efforts comprise formal, large scale, and informal interpersonal communication networks for proposing innovative ideas and sharing practices.

A relatively short amount of time has transpired from initial conversations about UD as an instructional framework to articulated implementation guidelines. Despite this, numerous higher education institutions and professional organizations in the U. S. have sponsored workshops and conference sessions about UD based inclusive teaching strategies. Some efforts emanate from disability related professional groups offering intensive conference workshops as well as

single session presentations (e.g., Association on Higher Education and Disability [<http://www.ahead.org/>]; Center on Postsecondary Education and Disability [<http://cped.uconn.edu/>]; and University of Hawaii Center on Disability Studies [<http://www.pacrim.hawaii.edu/about/>]). Other sources support conferences and websites exploring UD and inclusive instructional techniques for students with disabilities (e.g., Educause [<http://www.educause.edu/>]; Merlot [<http://www.merlot.org/merlot/index.htm>]) (McGuire, 2014).

International conferences with sessions about UD and inclusive teaching are drawing participants from numerous countries who comprise networks of disability professionals, higher education administrators, and faculty. The Association for Higher Education Access & Disability in Ireland (<http://www.ahead.ie/>), an independent non-profit organization working to promote full access to and participation in further and higher education for students with disabilities, is continuing its efforts to promote inclusive instruction through annual themed conferences showcasing UD frameworks (e.g., <http://www.ahead.ie/conference2015>). Since 1992, the University of New Orleans and the University of Innsbruck have collaborated to cosponsor a conference every three years (<http://www.uno.edu/trac/international-conference.aspx>). The eighth annual conference held in 2013 included numerous presentations based on UD with presenters from 20 countries and 4 continents (http://www.ahead.ie/newsletter_winter13_innsbruck). Several examples from Canada include the University of New Brunswick which recently sponsored a symposium, "Universal Design in Post-Secondary Teaching: Reality or Utopia?" (<http://www.unb.ca/conferences/udlconference/english/index.html>) and McGill University which sponsored a conference in 2015 (<http://www.mcgill.ca/osd/udl-conference-2015>). As a result of conference presentations, the spread of UD has also occurred within subgroups of professional social systems. An example from Ireland is informative (A. Heelan, personal communication, November 4, 2014). In the summer of 2013, through a partnership between AHEAD and the School of Nursing, University College Dublin, a summer school program enrolled 25 academics from nursing, medicine, and physiotherapy. Participants collectively explored the application of UD in instruction and the interface with disciplinary performance standards for students in clinical placements. There was unanimous agreement that certain non-negotiable tasks (i.e., essential standards) were not flexible and could not be waived within a clinical setting. The importance of customizing and adapting an innovation such as UD to disciplinary

needs and professional standards underscores a critical component of the change process, its context.

Widespread dissemination is also advanced through communication channels which have become more complex and at the same time more widely accessible since initial research studies on DOI in the 1950s and 1960s. Technology facilitates connections among professionals beyond national boundaries to encompass global communities and networks that provide valuable forums for idea sharing. These communication channels and social systems are increasing general knowledge about UD, as well as providing opportunities for modeling by peers that Rogers (2003) described as “the heart of the diffusion process” (p. 19). Two examples are illustrative. The European Association on International Education (EAIE) (<http://www.eaie.org/home/about-EAIE/who-we-are.html>) was formed in 1989 to promote training, conferences, knowledge acquisition, and sharing focused on efforts to promote international study programs with diverse student participants in Europe and across the world. One of its 15 expert communities is ACCESS, a network of professionals involved in disability services. Through training focused on UD frameworks, its members seek to increase the participation and improve the experience of students and staff with disabilities in international higher education. Another powerful example of a focused global communication channel is the Learning Inclusively Network + Know-How (LINK), “a network of organisations, educational institutions, disability professionals, academics, students and interested individuals who all share the same ultimate goal, the full inclusion of students with disabilities in higher education” (<http://www.thelinknetwork.eu/>). Founded in 2008, countries with partners sponsoring the network include Belgium, Ireland, the Netherlands, Norway, Slovenia, and Sweden. In addition to assisting students with disabilities who are seeking to study in other countries, LINK activities include a discussion forum for sharing innovative ideas and practices, annual conferences, and a shared library. At its 2014 annual conference held in Stockholm, sessions addressed inclusive learning environments in higher education based on UD frameworks for instruction (<http://www.universell.no/english/building-bridges-2014/>).

These examples depict the rapid spread of UD in college instruction and the role of different communication sources at various stages in the innovation-decision process. Conferences promote awareness and the spread of innovative ideas by knowledge dissemination. They also can generate a powerful connection, a growing network of attendees who are persuaded by the content of presentations to explore in more depth UD based classroom teaching.

Implementation of UD Based Instruction

Another vantage point for viewing the diffusion of UD based instructional practices is to look at

initiatives focused on systemic campus-wide change. While many application efforts are underway, two examples are highlighted and examined for elements that reflect DOI.

Project ShIFT. Project ShIFT (Shaping Inclusion through Foundational Transformation) was a three-year demonstration project, one of 23 funded by the U.S. Department of Education, Office of Postsecondary Education (U.S. Department of Education, 2015) during the 2008-2011 funding cycle. ShIFT was designed to bring UD and the related social model of disability to individual college campuses across the country. At the outset, disability resource professionals from 25 college campuses were selected for training and support. Their role in the project was to “serve as leaders for faculty in the redesign of curriculum, the use of UD instructional strategies, and the infusion of disability into course content” (Refocus, n.d.). As campus change agents, each disability resource professional identified one faculty member to join them in Year 2 of the project. Activities included intensive training and the development of a plan for infusing UD into instructional practices in the faculty member’s teaching. In DOI terms, these faculty members might be viewed as early adopters who were to bring observable UD practices to campus and their network of faculty colleagues and peers. In Year 3, each campus was charged with exploring how to best “increase institutional capacity” (Refocus, n.d.) through additional diffusion of UD. Strategies for additional campus implementation are varied (e.g., Meyer, Tanner, & Camp, 2014; Refocus, n.d.; Staeger-Wilson & Sampson, 2012). For example, one disability resource professional and faculty colleague returned to campus to develop a faculty partners program for training for a small core of faculty colleagues who in turn were available to work with their faculty peers and share inclusive teaching practices (Smith & Buchannan, 2012). Strategic change on this campus clearly involved peer-to-peer communication and development of a network of early adopters who could continue to support and spread UD instructional practices. Another example from Project ShIFT included participants returning to campus to partner with the institution’s faculty development center and the online support team to offer varied inclusive design workshops in both face-to-face and online learning environments. Faculty participants in the training are asked to incorporate some aspect of the workshops into a course they are teaching (A. Meyers, personal communication, January 12, 2015). Promoting change on this campus was approached by aligning with other professionals with compatible values for inclusive teaching. In both examples strategic change included highlighting

the trialability of UD or the ability of faculty to design, adopt, and apply UD to their own instruction.

McGill University. Change efforts at McGill University provide another example of diffusion and adoption of UD in college instruction. The Disability Services (DS) office implemented an intentional plan to bring UD to instruction beginning in September 2011. First identifying campus partners with mutual goals and values, the DS office collaborated with the Social Equity and Diversity Education office (SEDE) and the Teaching and Learning Services (TLS) based on a “happy conjuncture where our missions meet and our expertise is mutually beneficial” (Fovet & Mole, 2013). They offered workshops and video resources as well as individual consultation for implementing UD. Over an 18-month period of collaborative training, qualitative feedback and reactions were monitored to better understand “stressors” and “facilitators” for campus constituents considering implementation of UD. Faculty responded positively to the framework and saw the linkage between UD and the development of long-term teaching practices. Challenges included lack of time and lack of support from faculty leadership. Administrators responded most positively to the rationale of UD as a sustainable approach to managing disability access (Fovet, 2012). The Disability Services office was recently awarded a three-year government grant in collaboration with other Canadian institutions to develop an online toolkit to support faculty in implementing UDL (Office for Students with Disabilities, n.d.). The work at McGill illustrates diffusion efforts that make notable use of formal social structures including collaboration with peer support offices (SEDE and CTL) and advocacy to include UD in campus conversations about the value of sustainable practices. The strategies used for training faculty by modeling UD practices and providing “grab and run tools” (Fovet & Mole, 2013) provide observable practices that address faculty time concerns.

Discussion

DOI theory offers a new lens for examining the appeal and rapid spread of an innovation, UD based approaches to inclusive college teaching. From our vantage point as early adopters and research faculty who teach undergraduate and graduate courses, DOI theory provides provocative perspectives on the future of this innovation. As change agents working to promote UD based instruction through a variety of professional development and training initiatives for more than 16 years, we find features of this theory of change to be intriguing. Elements of DOI theory suggest some predictable patterns and supports for diffusion that have not yet been fully explored. We identify and discuss four components that are promising

areas of focus for strategic planning: the impact of time, communication channels, social systems, and the innovation itself. Each component is discussed as it relates to advancing UD informed college teaching.

Time and decision-making. While efforts to promote this idea are widespread and impressive, we speculate that its diffusion is in the early stages of decision-making and adoption. The rapid expansion of knowledge about UD with examples at a global level reflect the work of innovators, early adopters, and change agents sharing early adoption initiatives. Knowledge of UD and persuasion based on concrete applications to college teaching represent the current status of the innovation-decision process. On a global level there is continued need for broad awareness initiatives and strategies. Professional forums for faculty in discipline specific conferences such as health sciences, modern languages, and STEM education, appear particularly apropos. Elements of state higher education systems including outreach and professional development resources for two-year or community college faculty are another promising outlet for advancing knowledge and awareness of UD. Individual institutions that are farther along in the decision-making process represent a potential cadre of leaders who can serve as models for the field by providing examples of success and failure as well as concrete outcomes.

Time and individual innovativeness. Innovativeness is a continuous variable and relates to individuals and their choice of whether and when to adopt a new idea. Early adopters, those who readily embrace new ideas, are adventuresome and risk takers. How this plays out in the culture and values of different higher education settings bears consideration. On one hand, if research and publications in refereed journals are the gold standard for promotion and tenure, faculty at research intensive universities in early stages of their careers may be reluctant or unable to engage in activities that are heavily focused on pedagogy. Yet, as societal conversations swirl around the cost and outcomes of college enrollment, accountability and institutional commitment to instructional excellence are sharpening the focus on learning and student competence. As the idea of UD based college teaching diffuses, leaders in the movement can take on a role of change agents who explore reasons some individuals are early adopters using that information to inform efforts that address potential barriers to diffusion. Early adopters are more interconnected by means of interpersonal networks in their social systems than later adopters (Rogers, 2003). They may be prime candidates to assume leadership roles in promoting this inclusive approach to teaching. Sharing their creativity in adapting and reinventing UD in their disciplines could generate excellent vignettes/case studies about implementation, its challenges, and its benefits.

Concrete examples providing clear applications and outcomes are important tools for persuading the next group of potential adopters, the early majority whom Rogers describes as pragmatists who are intrigued with change but require proof.

Another area for exploration centers upon institutional innovativeness. Within a college or university, are there programs or disciplines with a propensity for experimenting with innovation? Are there clusters of faculty across or within disciplines who are receptive to “taking the lead” in innovative and creative thinking and actions targeted on teaching for diversity? Campus centers for teaching and learning might serve as the nexus for showcasing innovative teaching practices through institutional awards centered on instructional excellence. Faculty who distinguish themselves by pedagogical creativity in their disciplines are a valuable resource who might form a core for faculty learning communities. Presentations by faculty at professional conferences and in scholarly publications about their ideas and outcomes of inclusive instruction can address unique disciplinary elements with which their colleagues can identify. Opportunities for peer-to-peer communication via interpersonal communication channels are important in advancing the change process from knowledge to persuasion and adoption.

Time and rate of adoption by the field. Diffusion studies typically describe the adoption of innovation as slow and gradual at the beginning with more rapid growth as the concept takes hold. Peer networks become more important in accelerating the decision-making process over time. Alignment of the innovation with existing value systems is apparent on campuses where UD adoption is underway. Tapping in to the variety of campus values and priorities ranging from diversity, to retention and graduation, to social justice, to sustainability initiatives, can provide fruitful linkages. Technology in the classroom has become the norm in higher education. With the expanding presence of blended and online classes, there is prime opportunity to anchor these learning environments in UD and inclusive instruction. Another accelerant for diffusion is the strategic collaboration with faculty opinion leaders on campus. In addition to serving as role models described previously, these faculty are typically well connected with a variety of colleagues. Their insights into how to design outreach and supports for colleagues who are perhaps less innovative in teaching are opportune. Examples from Project SHIFT participants illustrate the importance of considering campus culture for the evolving needs of the next adopter group. Peer training, online workshops, and faculty book clubs are a few of the activities that were successful in engaging faculty peers.

Communication channels and social systems. Different communication channels serve different roles at each stage of the innovation-decision process. To

expand knowledge about an innovation, mass media channels are more effective. Potential opportunities abound to expand global awareness of universal design via conversations about adoption of the *International Convention on the Rights of Persons with Disabilities* (United Nations, 2006), a treaty now signed by 159 nations and ratified by 152 (United Nations, 2015). This document including a definition of universal design comprises 50 articles delineating goals of full inclusion to protect the rights of persons with disabilities in the civil, political, economic, educational, social, and cultural spheres. By capitalizing on widespread discussion and advocacy surrounding this treaty, mass communication channels hold promise of rapidly spreading information about UD based instruction to reach a worldwide audience (Powell, 2013).

As early adopters of this instructional framework multiply, a challenge emerges about effective methods for moving beyond the awareness and persuasion stages to decision making about adoption. The importance of communication via near peers and both formal and informal structures on individual campuses cannot be overemphasized including open and constructive dialog about challenges of implementation and examples of reinvention or “fine-tuning” disciplinary based UD instructional strategies.

Closely aligned with communication channels are the social systems within which diffusion occurs. Within the hierarchy of higher education, organizational structures include senior administration, academic and student affairs units, and information and communication technologies (ICT) services, among others. As illustrated by the example of McGill University, opportunities for collaboration across units around shared institutional values may represent an untapped resource. In general, initial efforts to diffuse the notion of UD based instruction have emanated from campus disability services personnel. In her analysis of literature dealing with the diffusion of innovative teaching and learning practices in higher education, Smith (2012) found that strong senior level management support is a critical variable in the effective spread of an innovation. At a micro level, if the idea is to become systemic, conversations about implementation across relevant units of the system must expand beyond a disability context. Is this a role for a change agent, someone external to the system with expertise about systems change and the process of garnering institutional support for inclusive teaching? With the burgeoning role ICTs are playing in instruction, faculty and instructional design professionals working together could unleash dynamic synergy and create powerful alliances. Another challenge centers on extending the idea at a macro level, moving the dialog about inclusive instruction to a national and international audience of faculty.

Innovative opinion leaders within a discipline, those who can influence attitudes and behaviors of colleagues, could play a significant role by their leadership in social systems important to faculty such as professional associations and organizations. Within the context of research on the scholarship of teaching, a renewed emphasis on student learning has placed a spotlight on pedagogy (Hutchings et al., 2011). Drawing on emerging research about the benefits and outcomes of UD based instruction, intentional strategizing about approaches to systemic change that address diversity of learners could foster collaboration across higher education systems.

The innovation of UD. How do we maximize the already appealing attributes of UD applied to instruction? Diffusion research studies underscore the importance of intentionally showcasing the relative advantages of an innovation. Universally designed instruction is compatible with existing values and practices in higher education and flexible for faculty adaptation to fit their individual teaching styles and contexts. As the field prepares for later adopter groups of faculty, moving along a continuum from innovators, to early adopters, to early and late majority, the growing collection of observable strategies and outcomes will become essential tools for encouraging diffusion of UD with new faculty groups. Case studies of UD applications by faculty in varying career stages, disciplines, and campus settings can prove to be powerful tools for professional development (Scott & McGuire, 2015). Emerging strategies such as the UD Toolkit being developed by McGill University and informed “leader” colleagues are promising supports for reducing complexity in learning new skills or knowledge about inclusive approaches to teaching. Research in DOI has demonstrated that as an idea is implemented, reinvention often occurs as adopters customize its use to meet specific situations. An intriguing line of inquiry revolves around essential elements of various academic disciplines and whether reinvention occurs differentially in different fields of study. If UD is to thrive in college instruction, it is essential that adaptations and modifications over time keep pace with other pedagogical innovations that are a hallmark of college teaching and learning. Rogers (2003) stated that a higher degree of reinvention leads to a higher degree of sustainability, defined as “the degree to which an innovation continues to be used over time...” (p. 183). This clearly sets the stage for longitudinal research on anticipated and unanticipated results of this movement to promote instructional access and inclusion.

Conclusion

Viewing initiatives to infuse UD into college teaching through the lens of DOI theory offers a perspective on change that may alert proponents of the

movement to limitations that may impede its progress. Concerns about the DOI theory and factors affecting implementation of a UD innovation are relevant. Rogers pointed out that change agents and diffusion scholars have often overlooked the importance of studying an innovation’s consequences, a limitation that could be parlayed into an action agenda. For example, there is limited evidence about the consequences of infusing inclusive instructional strategies into college curricula, a critical fact that reflects the relative recency of the movement. There have been sporadic attempts to document outcomes, and scholars examining the efficacy of this approach are generating a small but growing research based literature (McGuire, 2014). This type of “proof” resonates with faculty and administrative audiences. Rogers also discussed pro-innovation bias, the assumption that an innovation should be adopted. Given the intuitive appeal of UD in general, this caution remains timely. Since the articulation of DOI theory, communication channels, an integral component of the change process, have been transformed by technology, particularly the World Wide Web. Messaging can occur across multiple audiences in widely disparate locations nearly instantaneously. The impact of this phenomenon as it relates to the knowledge and persuasion stages and rate of decision making remains to be examined. Limitations related to UD based instructional strategies and the process of adopting them also warrant attention. Smith (2012) found that challenges to successful adoption of a teaching and learning innovation can include support of high level administration, a sustainability plan, time commitment, faculty supports, contextual relevance, and institutional infrastructure. When viewed in conjunction with DOI theory, these factors may be particularly relevant at the decision and implementation stages. Other constraints on use of the theory include systematic ways to monitor implementation efforts. With a now global interest in this new idea, significant challenges exist to forging connections among multinational researchers. In what ways is the World Wide Web an agent of diffusion? Will implementation be sustainable? What factors affect sustainability? As articulated by Rogers, “The growth and development of a research field are a gradual puzzle solving process by which important research questions are identified and eventually answered” (2003, p. 106). Refining and investigating hypotheses will be instrumental in addressing limitations and objectively documenting intended and unintended consequences of this movement.

Despite these challenges, insights gained from DOI theory prompt the field to be intentional, reflective, and strategic in how we approach the spread and adoption of UD in college instruction. How far have we advanced along the innovation decision-making

continuum? Who is next in line for considering the adoption of inclusive teaching practices, and what does this mean for how we conduct outreach and support? Are there new ways to work through our communication channels and social systems to address some of the inherent and emerging challenges? How do we continue to reinvent UD in college instruction and document outcomes that make a difference? DOI theory gives us a lens for examining these and other provocative questions in ongoing efforts to understand and promote inclusive college instruction.

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The Experiential Learning Impact of International and Domestic Study Tours: Class Excursions That Are More Than Field Trips

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Experiential education programs, such as international and domestic study tours, bridge the limitations of formal learning classroom by allowing students to experience reality in a new learning dimension. This mixed-methods study explores experiential learning during a domestic interior design study tour to New York City and an international fashion-merchandising study tour to China operated by the same fashion-merchandising and interior design department at a public university in the United States southeast region. Both study tours intended to prepare students for the workforce by expanding their understanding of business and the creative process. The tours' organization allows students to meet industry professionals and to investigate and analyze issues such as collaborative work, cultural differences in business and creativity, cultural and social identity in the environment, and personal development. This research explores students' perceptions of a domestic and an international study tour to analyze their effectiveness in achieving learning outcomes. Before and after the study tours, students completed a survey to gauge their perceived level of understanding and attitudes toward the study tours. Additional student feedback came from reflection journals documenting students' personal development, design expressions in the environment, and experiences.

Kolb (1984) defines learning as “the process whereby knowledge is created through the transformation of experience” (p. 38). In an attempt to provide students with the most engaging learning environments possible, higher education has sought to guide students through the continuous adaptation and transformation of experiential knowledge. Bruski (2011) suggests that these transformational experiences enhance creativity as new occurrences force students to compare and contrast prior events and construct new associations.

This study compares a new domestic study tour to New York City and a popular, established international study tour to China operated by the same fashion merchandising and interior design department at a public university in the United States southeast region. The study examined the domestic New York study tour because student participation has dwindled in the last few years while the international study tour to China has grown, and the tour is popular among students, especially fashion merchandising students.

The university used in this study has fashion merchandising and interior design programs that have a long tradition of incorporating student tours in their educational programs. This tradition grew from the awareness that students' learning experiences could be enriched by firsthand experience of the socio-cultural issues influencing design environments and the interconnected working processes of business and creative thinking. Study tours, as a form of experiential learning, became an integral part of the curricula. However, in recent years, several factors have resulted in fewer students participating in domestic and international study tours. Therefore, this research focused on exploring the important role that domestic and international student study groups can have in the

fashion merchandising and interior design curricula. This study explores students' perceptions of the effectiveness of the domestic and international study tours at achieving the desired learning outcomes, the relevance of course content to students' career aspirations, and students' understanding of cultural design expression and identification.

This research makes significant contributions because neither of these study tours has undergone an assessment in recent years. Therefore, this study provides student feedback for incremental improvements to the content and delivery of the tours.

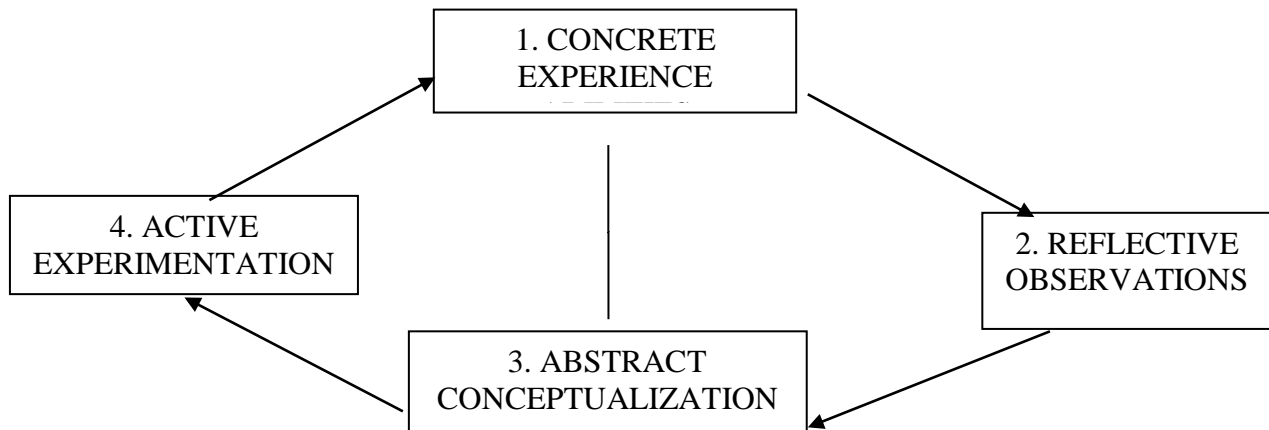
Literature Review

Experiential Learning Theory

The roots of experiential learning lie in the work of Dewey (1897, 1938) and Kolb (1984). Both scholars gave a central role to experience in improving the processes of learning and human development. Dewey (1897, 1938) and Kolb (1984) shared the belief that learning is a dynamic, multi-linear, cyclical process as experiences constantly generate and modify ideas, attitudes, and interests. Learning is a major element of human adaptability and is present in human activities beyond the boundaries of the classroom—indeed, in all aspects of life (Kolb & Kolb, 2008). Experiential learning thus suggests a constructivist theory of learning in which the social and personal knowledge of students are continually and collectively adapted (Kolb & Kolb, 2008).

Most educators seeking to understand the processes of experiential learning, or learning by doing, as it is commonly known, refer to Kolb's (1984) experiential learning theory and model. Kolb based his theory on

Figure 1
Kolb's Experiential Learning Model



the belief that learning is a cyclical process in which knowledge is achieved through the transformation of experience, specifically, through the combination of grasping and transforming experiences (Kolb, 1984; McCarthy, 2010). The learner can begin at any stage but must complete all four stages of the experiential learning model. Kolb's model requires four student abilities for successful learning: concrete experience abilities, reflective observations, abstract conceptualization, and active experimentation (Kolb, 1984; McCarthy, 2010). The structure of the experiential learning model indicates the dual dialectics of the grasping experience (concrete experience abilities /abstract conceptualization) and the transformation experience (reflective observations / active experimentation) (Kolb, 1984; McCarthy, 2010).

According to Kolb (1984), to acquire knowledge students in the model's first phase, concrete experience abilities, have to be openly involved and without bias in new experiences. In other words, the learner gains knowledge by choosing to participate in the activity (McCarthy, 2010). The model's second phase, reflection, dictates that the student must be able to reflect on and observe their experiences from various points of view in order to approach different ways of executing an idea. The learner gains knowledge by observing others involved in an experience, reflects upon what is occurring, and applies the experience. Conversely, the learner can also develop knowledge through the model's third phase, abstract conceptualization, whereby the learner creates concepts by integrating their reflections, observations, and experiences into logically sound theories. Lastly, in the model's fourth phase, active experimentation, the student uses these new theories to make decisions on how to solve problems. Through grasping of theories

when immersed in a particular environment, the learner perceives and analyzes new information that is tangible and real (Kolb, 1984; McCarthy, 2010) (Figure 1). Kolb (1984) further suggests that in the process of learning, students at various times must move from actor to observer, as well as from specific involvement to generic detachment.

Experiential Learning in Practice

Experiential learning is a critical, positive element in the learning process in higher education (Harsell & O'Neil, 2010). For example, in research on political science students involved in exit polls for two local elections, Berry and Robinson (2012) found that engaging students in the design and analysis of the exit poll assignment helped them better connect theories and methodologies to the realities of local voting preferences. This experiential learning exercise also yielded the unexpected finding that the exit poll assignment proved to be a rewarding experience for students and faculty alike (Berry & Robinson, 2012).

In research by Ball (1995), students in a hotel and catering course found value in openly collaborating on real-world projects addressing the business needs of a real client. As well, Justo and DiBiasio (2006) found a relationship between experiential learning and lifelong learning among engineering students who saw significant improvements in their writing, critical thinking, and research skills while participating in an off-campus experiential activity. The study showed that independently led faculty team reviews found that study abroad students demonstrated higher performance levels on their final project reports than on-campus students. The researchers concluded that the engineering students participating in global programs

performed at higher levels because of the structure and nature of the off-campus experience.

Among the numerous ways of integrating experiential learning into curricula, the most common are work experience (Commander et al., 2012), field trips (Arcodia & Dickson, 2013), case studies (Howard & Gulawani, 2014), role playing (Ruhanen, 2005), gaming (Bowes & Johnson, 2008), and service learning (Pelco, Ball, & Lockeman, 2014). In particular, student study tours, as a form of field trips, have proven to be effective at bridging the gap between theory and practice in a short time. Study tours provide opportunities for students to understand the socio-cultural influences of the local environment, engage in personal and academic growth, and gain an expanded view of the realities of the world (Howard & Gulawani, 2014). Research conducted by Howard and Gulawani (2014) of a study tour to India found study tour faculty assessments corroborated survey results that indicate that the majority of study tour students were better able to achieve course learning outcomes because of their study tour participation to India. Howard and Gulawani (2014) concluded that well designed learning outcomes connected to course design and assessment increases the depth of student learning.

Research conducted by Allen and Young (1997) suggests that students on study tours learn because they participate in firsthand experiences, especially when all five senses—sight, smell, hearing, taste and touch—are engaged. This engagement gives students a much deeper understanding and appreciation of the culture and environment in which they are immersed (Allen & Young, 1997). Howard and Gulawani (2014) found that undergraduate business students participating in study tours learned, both personally and academically. Miao, Harris, and Sumner (2005/2006) suggest that effective learning occurs during study tours because it is achieved firsthand and takes place in more natural and less controlled environments than standard educational settings. Despite the similar learning and experiential outcomes of domestic and international study tours, literature appears focused on international study tours as effective learning experiences. The global marketplace's need for work-ready graduates who can work outside their known environment has encouraged the globalization of higher education (Di Iorio, Cerotti, & Richardson, 2009).

While the literature shows that active learning experiences through international study tours are worthwhile in any discipline, it is essential that educators not lose sight of the importance of providing both domestic and international study tours. Students in all disciplines need a strong understanding of theory, research, and practical skills. The combination of these three knowledge areas provides skill sets, work, expertise, and a knowledge base that a work-ready

graduate can use in diverse circumstances, both international and domestic. Consequently, this research study set out to explore three research questions pertaining to study tours. The first research question was whether domestic and international study tours equally promote student learning and general knowledge. The second research question explored whether the cultural engagement in domestic and international study tours equally enhance experiential learning. Lastly, the third research question looked at whether the use of daily reflection journals on domestic study and international study tours play a role in more in-depth learning.

Methodology

Study Tour Program Description

The purpose of both the domestic interior design study tour to New York City and the international fashion and merchandising study tour to China was to provide students with a deeper understanding of their disciplines, particularly significant issues in business, design, creative thought, and cultural environments. As such, providing opportunities to meet industry professionals, attend lectures, view collaborative work, and engage in personal growth. The New York study tour lasted six days and the study tour to China ten days. Both were composed of three phases. Phase 1 consisted of a series of pre-departure meetings during the preceding academic semester for participants to get to know each another and collaboratively plan the tour with faculty. Phase 2 consisted of field experiences in New York City and various cities in China. Both tours included a variety of learning activities such as showroom and museum visits, lectures, meetings with manufacturers and industry professionals, and visits to historical buildings and sites. Phase 3 included final assessments, review of the course, and analysis of pre- and post-tour surveys and student reflection journals.

Participants

To meet the inclusion criteria, students had to participate in either the New York or the China study tour and to be enrolled in the university's residential interior design or fashion merchandising program. Because factors such as age, gender, academic year, or grade point average had no bearing on the research questions, they were not considered. The researcher was the faculty chaperone for the interior design portion of the New York study tour. The research study occurred at a large, public higher education institution in the southeastern United States.

The New York study tour had 24 participants, including six interior design students and 18 fashion

merchandising students. Unlike earlier tours, the 2015 summer New York tour was sub-divided into two tours with their own chaperones: an interior design study tour and a fashion merchandising study tour. The 2015 summer China study tour had 18 students enrolled, all fashion merchandising students consisting of one graduate and 17 undergraduate students. The tour's chaperone was a fashion merchandising faculty member. Five of the six interior design students on the New York study tour participated in the research study, while none of the fashion merchandising students did. Even though the 18 students on the China study tour agreed to participate, only 12 undergraduate students completed the surveys.

Both study tours have always welcomed participants from the interior design and fashion merchandising programs in order to reach the minimum number of participants for the tours to be viable. However, two to three times more fashion merchandising students than interior design students have usually participated on both study tours. Consequently, over the years, tour activities have become geared primarily toward fashion merchandising students, leaving interior design students to become less interested in either study tour. Thus, fewer interior design students benefit from the rewarding experiential learning opportunities of the study tours.

Recognizing the importance of student exposure to experiential learning and seeking to encourage interior design students to become more engaged in the study tours, the college's leadership divided the 2015 New York study tour into an interior design portion and a fashion merchandising portion. As well, the interior design students were chaperoned by an interior design faculty member, who developed an itinerary with only interior design activities. The fashion merchandising portion of the study tour remained unchanged. As in the past, fashion merchandising students were chaperoned by a fashion merchandising instructor and followed an itinerary of fashion merchandising activities.

Conceptual Framework

To facilitate the comparison of international and domestic study tours in terms of the effectiveness of learning from concrete experiences in environments outside of the classroom, Kolb's experiential learning model served as the research study's conceptual framework (Kolb, 1984). Kolb's model supports the activities of study tours when it encourages students to interact with the subject material outside of the classroom while experiencing new cultural environments, consequently moving away from passive learning by hearing and seeing to active learning by doing and engaging with real world issues. Kolb's model framed the research questions around exploring the depth of transformational knowledge acquired from the concrete experiences, adaptability, and reflections from learning in new real world environments. The online survey questions revolved around the study tour's course objectives of exposing learners to design trends, industry standards, and principles, as well as the relationship of industry and a global design culture.

Study Tour Assessment

With neither study tour formally evaluated before, the researcher developed survey questions based on the New York study tour's course objectives. According to the China study tour instructor, historically the China study tour has not had any formal written course objectives, yet there is the perception that the educational content of both study tours is the same. That is, both study tours focus on students having exposure to industry professionals, business practices, design trends, and the interconnection between design and culture. Consequently, Table 1 presents the course objectives for the New York study tour.

Table 1
New York City Study Tour Course Objectives

Objective Number	Objective
1	Provide an introduction to New York's interior design industry
2	Provide insights into what it is like to work in New York as an interior designer by participating in structured visits to interior design firms and showrooms
3	Meet with interior design professionals to discuss the operations of an interior design firm and the factors that lead to a firm's success
4	Familiarize students with potential career options and expectations for knowledge and skills in interior design
5	Participate in the cultural and daily life of the city as students relate to interior design; visit relevant interior design spaces, museums, and exhibits

To determine the extent to which the study tours allowed students to connect theory and practice, the researcher created a survey with a five-point Likert scale for quantitative data collection purposes. No reliability test was conducted for survey questions 1 through 5 because they pertained to demographic information. However, for survey questions 6 through 22 the researcher performed three separate reliability tests. For survey questions 6 through 15, the reliability test found a Cronbach's alpha of 0.797 for the pre-study tour survey responses and 0.912 for the post-study tour survey responses, indicating that the construct is reliable in both surveys. For survey questions 16 through 20, the researcher found a Cronbach's alpha of 0.886 for the pre-study tour survey responses and 0.976 for the post-study tour survey responses, indicating that the construct was reliable for both surveys. A reliability test found survey questions 21 and 22 to measure the same construct. The researcher found a Cronbach's alpha of 0.905 for the pre-study tour survey and 0.955 for the post-study tour survey, which indicated that the construct was reliable for both surveys.

The researcher emailed participants a link to the surveys before the tours started. By administering the same survey before and after the study tours, the researcher could explore students' attitudes and perceptions of what they expected to learn from the study tour. In addition, the researcher could discern whether it helped students apply concepts learned in the classroom; understand the inter-connection of business practices, design creativity, and client needs; and learn about the impact of culture on business practices and design creativity and expression. The first section of the survey, questions 1 through 5, consisted of basic demographic questions. The second section, questions 6 through 22, consisted of closed-ended questions pertaining to learning experiences.

For qualitative data collection purposes, students on both tours were required to keep reflection journals which were made available to the researcher at the conclusion of both study tours. Students were required to write a minimum of one page daily and to include hand sketches and photographs of the items they saw. The reflection journals encouraged students to write about, and graphically express, their views of their tour experiences and what activities or items were engaging and beneficial. This reflection served to document design expressions in the environment and experiences that might have affected students' personal development and personal views of the industry. Ultimately, the reflection journals became libraries of the visual stimuli and experiences that adapted regenerated student knowledge.

Procedures

The researcher secured participants' consent to participate in the research the semester before the tours commenced in May 2015. Once students became study participants, the researcher shared links to the online pre- and post-tour surveys with them via email. However, due to time constraints, the China study tour participants completed a printed copy of the pre-tour survey which the tour instructor collected and returned to the researcher. The researcher entered the responses into the online service, SurveyMonkey®, so the data could be formatted and downloaded to Statistical Package for the Social Sciences version 22 (SPSS 22). The pre-tour surveys were completed one week before the tours began, and the post-tour surveys were completed one week after the tours ended. Also, the researcher received the reflection journals one week after the tours ended. The weeklong New York tour took place the third week of May 2015 and the week-and-half-long China tour on the third and fourth weeks of May. Data analysis began in June 2015, after all the data were collected.

The researcher developed the survey using SurveyMonkey® so that participants could easily access the survey at their leisure and the researcher could format and download the collected data to SPSS 22 software for statistical analysis. The survey questions were based on exploring three research questions to assess participants' perceptions of the study tour learning experience. The 25 survey items included closed-ended questions measured with a 5-point Likert-type scale ranging from (1) *strongly agree* to (5) *strongly disagree* and open-ended questions that solicited additional information about participants' reasoning and best and worst tour experiences.

Analysis and Findings

This exploratory research study used a mixed-methods approach with both quantitative and qualitative elements. The quantitative phase consisted of processing and analyzing responses to an online survey developed by the researcher and administered twice: one week before and one week after the study tours. The survey allowed identifying the differences between participants in the New York and China study tours and examined their expectations for and perceptions of the study tour experience. The survey first presented basic demographic questions concerning participants' age, academic level, field of study, and chosen study tour program. In addition, an open-ended question asked participants to explain their reason for participating in their chosen study tour. Next, participants were asked to rate their level of agreement with closed-ended

Table 2
Pre-Study Tour Descriptive Group Statistics by Study Tour

Survey Questions	Study Tour Location	N	Mean	Std. Deviation	Std. Error Mean	Mann-Whitney Significance
I feel that I have an understanding of the business practices of firms in my field of study.	China	12	2.1667	0.83485	0.24100	
	New York	5	2.8000	0.44721	0.20000	
I feel that I have an understanding of the key trends impacting firms in my field of study.	China	12	1.8333	0.57735	0.16667	*
	New York	5	2.8000	0.83666	0.37417	
I feel that it is important to tour spaces that apply the concepts I have learned in the classroom.	China	12	1.2500	0.45227	0.13056	
	New York	5	1.6000	0.89443	0.40000	
I expect this trip to increase my understanding of the responsibilities expected of a professional in my industry.	China	12	1.5000	0.52223	0.15076	
	New York	5	1.6000	0.54772	0.24495	
I feel that touring showrooms enhances the application of classroom concepts.	China	12	1.5833	0.66856	0.19300	
	New York	5	1.2000	0.44721	0.20000	
I feel that I have an understanding of the key competencies necessary for a career in my field of study.	China	12	2.0833	0.79296	0.22891	
	New York	5	2.6000	0.89443	0.40000	
I feel that I have an understanding of the strategies firms use to be successful in my field of study.	China	12	2.5000	0.90453	0.26112	
	New York	5	3.0000	0.70711	0.31623	
I feel that I have an understanding of the various career opportunities offered in my field of study.	China	12	1.6667	0.65134	0.18803	
	New York	5	2.0000	0.00000	0.00000	
I expect this trip to help apply the concepts I have learned in the classroom.	China	12	1.3333	0.49237	0.14213	*
	New York	5	2.4000	0.89443	0.40000	
I expect this trip to help me relate classroom concepts to the real-world problems of a firm.	China	12	1.3333	0.49237	0.14213	*
	New York	5	2.0000	0.00000	0.00000	

* indicates a Mann-Whitney Exact p-value less than 0.05

survey questions using a 5-point Likert scale ranging from *strongly agree* (1) to *strongly disagree* (5). The online quantitative data were entered into the SPSS 22 software program. The analysis used descriptive statistics and Mann-Whitney tests to explore whether significant differences existed between the New York and China study tour participants.

The reflective journals provided data on participants' views of the tours' daily activities and the experience of being in an alternate learning environment. The researcher transcribed the data, noted, and coded by hand similar phrases and content. The researcher wrote a case study for each participant and then performed a cross-case comparative analysis of the data collected, following the procedure recommended by Patton (2002) for qualitative analysis. Next, the data were broken into topics and similar statements coded, leading to the identification of themes.

The researcher found regularities within the data that validated the accuracy of the themes and represented the most prominent components of themes which affected participants' experiences.

Quantitative Analysis

Research question 1: Do domestic and international study tours equally promote learning and general knowledge of the profession's practices and trends?

HO1: There are no significant differences between domestic and international study tours in how they promote learning and general knowledge of the profession's practices and trends.

HA1: There are significant differences between domestic and international study tours in how they

promote learning and general knowledge of the profession's practices and trends.

With survey questions pertaining to demographic information, survey questions 6 through 15 were used in the quantitative analysis seeking to answer research question 1. The researcher performed a reliability test to determine whether survey questions 6 through 15 measured the same construct. Descriptive statistics analyses were run to find the mean scores for the responses to both surveys. From these 10 items, the mean for the post-study tour survey was lower or equal than the mean of the pre-study survey, indicating that understanding increased for the combined

participants, and the combined had a more positive learning experience on the study tour than they expected before it.

Pre-Study Tour Findings

The mean for both study tour groups (Table 2) indicated that students generally had a positive perception of what they expected on the study tours. Lower mean scores indicate perceptions that are more favorable, while higher mean scores indicate less favorable perceptions. A Mann-Whitney U test was conducted because it is an appropriate test for ordinal data, which cannot have a normal distribution. The

Table 3
Post-Study Tour Descriptive Group Statistics by Study Tour

Survey Questions	Study Tour Location	N	Mean	Std. Deviation	Std. Error Mean	Mann-Whitney Significance
I feel that I have an understanding of the business practices of firms in my field of study.	China	12	1.4167	0.51493	0.14865	*
	New York	5	2.2000	0.44721	0.20000	
I feel that I have an understanding of the key trends impacting firms in my field of study.	China	12	1.2500	0.45227	0.13056	*
	New York	5	2.0000	0.00000	0.00000	
I feel that it is important to tour spaces that apply the concepts I have learned in the classroom.	China	12	1.3333	0.49237	0.14213	*
	New York	5	2.2000	0.44721	0.20000	
I expect this trip to increase my understanding of the responsibilities expected of a professional in my industry.	China	12	1.3333	0.49237	0.14213	*
	New York	5	2.0000	0.00000	0.00000	
I feel that touring showrooms enhances the application of classroom concepts.	China	12	1.4167	0.90034	0.25990	*
	New York	5	2.0000	0.00000	0.00000	
I feel that I have an understanding of the key competencies necessary for a career in my field of study.	China	12	1.3333	0.88763	0.25624	*
	New York	5	2.0000	0.00000	0.00000	
I feel that I have an understanding of the strategies firms use to be successful in my field of study.	China	12	1.0833	0.28868	0.08333	*
	New York	5	2.0000	0.00000	0.00000	
I feel that I have an understanding of the various career opportunities offered in my field of study.	China	12	1.0000	0.00000	0.00000	*
	New York	5	1.8000	0.44721	0.20000	
I expect this trip to help apply the concepts I have learned in the classroom.	China	12	1.0000	.000000 ^a	0.00000	*
	New York	5	2.0000	.000000 ^a	0.00000	
I expect this trip to help me relate classroom concepts to the real-world problems of a firm.	China	12	1.1667	0.38925	0.11237	*
	New York	5	2.0000	0.00000	0.00000	

* indicates a Mann-Whitney Exact p-value less than 0.05

Table 4
Pre-Study Tour Descriptive Group Statistics by Study Tour

Survey Questions	Study Tour Location	N	Mean	Std. Deviation	Std. Error Mean	Mann-Whitney Significance
I feel that it is important to experience the impact that an urban culture has on business strategies of a firm.	China	12	1.3333	0.49237	0.14213	*
	New York	5	2.0000	0.00000	0.00000	
I feel it is important that I experience the integration of culture and the concepts I learned in the classroom.	China	12	1.0833	0.28868	0.08333	*
	New York	5	2.0000	0.70711	0.31623	
I feel that experiencing cultural activities enhances my learning.	China	2	1.1667	0.38925	0.11237	*
	New York	5	2.0000	0.00000	0.00000	
I feel that I will be better able to explore concepts because of being immersed in a different culture.	China	12	1.1667	0.38925	0.11237	
	New York	5	1.8000	0.83666	0.37417	
I feel it is important that this trip expand my global perspective.	China	12	1.0833	0.28868	0.08333	
	New York	5	1.8000	0.83666	0.37417	

* indicates a Mann-Whitney Exact p-value less than 0.05

Mann-Whitney U test for the pre-study tour survey revealed that differences between domestic and international study tour participants were generally not statistically significant, with $p > 0.05$ in seven of 10 cases. However, p values were less than 0.05 or $p < 0.05$ for the three questions that focused on whether the trip helped apply classroom concepts and trends to the real world. This finding indicates that, before the study tours, students had significantly different expectations for how domestic and international study tours promote learning and general knowledge of the profession's practices and trends.

Post-Study Tour Findings

The low mean values suggest that participants had very positive experiences on both study tours (see Table 3). In all cases, the China study tour participants consistently had very positive expectations and perceptions before and after the study tour. As with the pre-study data, a Mann-Whitney U test that was conducted for the post-study data. The Mann-Whitney U test for the post-study tour survey revealed statistically significant differences between domestic and international study tour participants, with $p < 0.05$ in all cases. Therefore, the null hypothesis is rejected, indicating that, after the study tours, students perceived a significant difference in how domestic and international study tours promote learning and general knowledge of the profession's practices and trends.

Research question 2: Does the cultural engagement in domestic and international study tours equally enhance experiential learning?

H02: There is no difference between international and domestic study tour students with respect to their perception of cultural engagement and enhancement of experiential learning.

HA2: There is a significant difference between international and domestic study tour students with respect to their perception of cultural engagement and enhancement of experiential learning.

Survey questions 16 through 20 were used in the quantitative analysis seeking to research question 2. To calculate the mean score for responses to both surveys, descriptive statistics were performed. The mean for the pre-study tour survey was higher than for the post-study survey, indicating that participants tended to perceive their future tour experiences were going to be negative. However, both groups of participants indicated a more positive learning experience after the study tours.

Pre-Study Tour Findings

Both study tour groups had low mean values, suggesting that they held favorable expectations for the educational and cultural opportunities and the expansion of their view of the profession and interconnections with other cultures on the tour (see Table 4). However, the China study tour participants consistently indicated the most positive expectations for their study tour experience. A Mann-Whitney U test revealed statistically significant differences between domestic and international study tour participants, with $p < 0.05$ in three out of five questions. Therefore, in three out of five cases null hypothesis is rejected,

Table 5
Post-Study Tour Descriptive Group Statistics per Study Tour

Survey Questions	Study Tour Location	N	Mean	Std. Deviation	Std. Error Mean	Mann-Whitney Significance
I feel that it is important to experience the impact that an urban culture has on a business strategies of a firm.	China	12	1.0000	0.00000	0.00000	*
	New York	5	1.8000	0.44721	0.20000	
I feel it is important that I experience the integration of culture and the concepts I learned in the classroom.	China	12	1.0000	0.00000 ^a	0.00000	*
	New York	5	2.0000	0.00000 ^a	0.00000	
I feel that experiencing cultural activities enhances my learning.	China	12	1.0000	0.00000	0.00000	*
	New York	5	1.8000	0.44721	0.20000	
I feel that I will be better able to explore concepts because of being immersed in a different culture.	China	12	1.0000	0.00000	0.00000	*
	New York	5	2.2000	0.83666	0.37417	
I feel it is important that this trip expand my global perspective.	China	12	1.0000	0.00000 ^a	0.00000	*
	New York	5	2.0000	0.00000 ^a	0.00000	

* indicates a Mann-Whitney Exact p-value less than 0.05

indicating that there is a statically significant difference in how cultural engagement enhances learning on domestic and international study tours.

Post-Study Tour Findings

The mean values suggest that both study tour groups viewed their experiences as extremely positive in terms of promoting learning and expanding their global perspective through exposure to culture (See Table 5). The extremely low mean values for both sets of study tour participants overwhelmingly supports that placing students in a different cultural context enhances learning. A Mann-Whitney U test that was conducted for the post-study tour survey revealed statistically significant differences between domestic and international study tour participants, with $p < 0.05$ for all items concerning whether cultural engagement enhances learning. The null hypothesis is rejected, indicating that cultural engagement in domestic and international study tours significantly enhances experiential learning.

Research question 3: Do daily reflection journals create a more in-depth learning experience on domestic study and international study tours?

H03: There is no difference between national and international study tour students with regard to reflection journals and the depth of the learning experience.

HA3: There is a significant difference between national and international study tour students with

regard to reflection journals and the depth of the learning experience.

Survey questions 21 and 22 were used in the quantitative analysis seeking to answer research question 3. Descriptive statistics were used to calculate the mean scores. Of the responses to the two items, the mean was higher for the pre-study tour survey than the post-study survey, indicating that participants in both study tours expected a less favorable learning experience before the tour.

Pre-Study Tour Findings

The low mean values for both tour groups suggest that participants, especially those on the China tour, favorably viewed the future task of writing reflection journals and saw it as important to their learning rather than as a burden or arduous task (Table 6). In terms of reflection journal improving the understanding of classroom concepts a Mann-Whitney U test revealed statistically significant differences between domestic and international study tour participants, with $p < 0.05$. The null hypothesis was rejected, indicating that there is a significant difference between national and international study tour students with regard to reflection journals and the depth of improving the understanding of classroom concepts.

Post-Study Tour Findings

The mean values suggest that the New York and China study tour participants perceived writing in

Table 6
Pre-Study Tour Descriptive Group Statistics by Study Tour

Survey Questions	Tour Location	N	Mean	Std. Deviation	Std. Error Mean	Mann-Whitney Significance
I feel that reflecting on the day's activities helps improve my understanding of classroom concepts.	China	12	1.5000	0.67420	0.19462	*
	New York	5	2.2000	0.44721	0.20000	
I feel that keeping a daily reflection journal will give more meaning to my tour experiences.	China	12	1.5000	0.67420	0.19462	*
	New York	5	2.4000	0.54772	0.24495	

* indicates a Mann-Whitney Exact p-value less than 0.05

Table 7
Post-Study Tour Descriptive Group Statistics by Study Tour

Survey Question	Study Tour Location	N	Mean	Std. Deviation	Std. Error Mean	Mann-Whitney Significance
I feel that reflecting on the day's activities helps improve my understanding of classroom concepts.	China	12	1.2500	0.45227	0.13056	*
	New York	5	2.2000	0.44721	0.20000	
I feel that keeping a daily reflection journal will give more meaning to my tour experiences.	China	12	1.3333	0.65134	0.18803	*
	New York	5	2.4000	0.54772	0.24495	

* indicates a Mann-Whitney Exact p-value less than 0.05

reflection journals as an important tool for improving their understanding of classroom concepts and providing greater meaning to tour experiences (Table 7). A Mann-Whitney U test revealed statistically significant differences between domestic and international study tour participants, with $p < 0.05$ in all cases. The null hypothesis is rejected, indicating that there is a significant difference between national and international study tour students with regard to reflection journals and the depth of the learning experience.

Qualitative Analysis

The reflection journals provided a clearer, qualitative understanding of the overall learning experiences. Table 8 identifies the themes that emerged after reviewing the reflection journals by the China and New York study tour participants. The review uncovered five themes for the study tours.

All study tour participants overwhelmingly reported positive experiences throughout their reflection journals. The reported themes were developed from the journal accounts of study tour activities, such as meeting professionals, attending lectures, and touring offices and showrooms. In addition, the participants described the learning aspects

of experiencing a new culture, architecture, and sites in general. Overall, the study tours participants reported that they felt grateful to have participated and learned all that they had from their study tour experiences.

The theme of real-world application. This theme was a central component of the study tours. In addition to experiencing a new culture, the opportunity for meeting industry professionals attracted students to the study tours. Both sets of students perceived these meetings as pivotal in leading them to gain a deeper, richer, and expanded understanding of their future profession. In the case of the China study tour students, their meeting of world-renowned fashion designers was especially meaningful since the students had studied these individuals in class. Even though the New York City tour participants did not meet with world famous designers, the students met with professionals that were highly knowledgeable with industry standards and trends. The following quotations offer a representative sample of participants' comments related to the real-world application theme:

- China study tour participant: "After lunch was the part that many of us were waiting for during this entire trip: we were going to meet world-famous fashion designer Gou Pei. She

Table 8
Theme by Study Tour

Theme	Number of Respondents: China Tour N=12	Number of Respondents: New York Tour N=5
Real-world application/	12	5
Integration of course concepts/visiting job sites	10	4
Experiencing new culture, architecture, and sites	12	5
Peer interaction	10	3
Personal growth	10	5

told us [that], as long as we are doing what we want to do, we will have a happy life. Right after talking to us, she headed over to a radio interview with the BBC. We were amazingly lucky to meet this very sweet and humble designer. It was a true pleasure.”

- A New York study tour participant: “Today was such a great day as a future interior designer. I loved the lighting designs of our breakfast restaurant. Then we went to the D & D building and looked at different showrooms. I loved them all. They each had so much information and products. Visiting the showrooms makes me want to intern in NYC.”

The theme of integration of course concepts.

Several participants reported that viewing and experiencing the different tour sites encouraged them to focus on interior design and fashion. For instance, one of the NYC tour participants revealed that because of visiting showrooms and experiencing different interior environments, they were able to connect the principles of history, furniture design and industry trends. Touring Chinese manufacturing plants offered students first hand insightful experiences into the relationship between the design and production of clothing, as well as also gaining an awareness of how production time and seasonal designs interrelate to one another. The New York City participants' tour of a high-end condominium under construction allowed them to experience a construction site while speaking to the contractor and interior designer in charge of the project. Furthermore, students learned about the regional differences in how interior designers work in New York City as opposed to their own local area. For the theme of integration of course concepts, study tour participants reported the following statements:

- China study tour participant: “Our first stop was a factory outside of Shenzhen where we got a tour of all the production processes. It was insightful and eye opening to see actual brands, such as Abercrombie & Fitch, being produced right before our eyes. We saw the different prints in the computer design room that they were making for the holiday season.”
- New York study tour participant: “I loved the history lesson on the furniture company and learning all about their iconic furniture pieces. While there, I also learned about commercial office design and how important it is to truly evaluate a workspace to make it work for the individual. Today, we saw and learned so much.”

Regarding the theme of experiencing new culture, architecture, and sites, the study tour participants overwhelmingly viewed experiencing the physical context of a new culture as an essential learning component of the study tours. Participants positively described the way different languages, customs, foods, architecture, and historical sites played important roles in learning about, and experiencing, a culture different from their own. Visiting landmarks that were culturally and historically significant supported the students learning two-fold. Visiting the landmarks not only consolidated architecture, design elements, and historical concepts, but they are served to expand awareness of how cultural values and beliefs over time impact the expression of the built environment.. The following samples are representative of participants' comments:

- China study tour participant: “Nothing could compare to how it would feel to actually be there in person, though, feeling the wind on top of the wall in the Chinese mountains, seeing a different

facial expression on each soldier, watching a garment being made. I was excited about all the new experiences I was about to have, as well as all the opportunities to learn about the culture and the politics and apply our classroom concepts I've learned (especially from Global Retailing) to the culture there."

- New York study tour participant: "It was interesting getting to see the historic architecture in person, rather than just on a slideshow. It was so awesome to be able to learn about the history of a building and view it."

The theme of peer interaction. Although the New York study tour participants interacted with each other throughout the tour, they did not view peer interaction as a strong contributor to the study tour experience. However, for the China study tour participants, peer interaction was an important element. They reported forming close social bonds and memories with fellow students, resulting in tour experiences with deeper meanings. The following sample is representative of participants' comments:

China study tour participant: "We all had a blast singing everything from NYSNC to Justin Bieber. Therefore, we sang every pop song that ever existed. It was the most professional karaoke I have ever been to. The girls and I are planning on doing a karaoke reunion when we get back to Athens."

The theme of personal growth. Both study tours participants reported they were grateful to have been part of the tours. For some participants, the study tour was life changing, while others were encouraged to seek an internship in New York City. The following quotations offer a representative sample of participants' comments related to theme of gratitude for participating in the study tour:

- China study tour participant: "I had two of the best weeks of my life which I will always remember, from the crazy food to the Great Wall and the factory tours. I experienced much as a 21 year old, that many people never get the opportunity to see. I feel extremely lucky and blessed to have gone on this trip."
- New York study tour participant: "This week has been incredible. We have seen and learned so much about our industry. I would recommend future students take this class because you learn, meet, and see what you need for all aspects of the industry."

Discussion

This research investigated the effectiveness of domestic and international study tours at accomplishing learning outcomes, such as awareness of the relevance of course content to understanding cultural design expression and identification. Both the quantitative and qualitative findings support the research by Commander and colleagues (2012), Jiusto, and DiBiasio (2006) showing that study tours are worthwhile learning arenas outside the classroom. The present research findings strongly suggest that both study tours not only provided participants with a positive academic learning environment, but also promoted cultural learning and expanded students' personal worldview, especially among the China study tour participants. For instance, the findings indicate that both sets of tour participants integrated classroom concepts into real-world challenges, gained understanding of the inner workings of their field of study, and acquired a new global perspective from exploring a culture different from their own. In the reflection journals, students reported that tour activities and social outings, such as meeting industry professionals, attending lectures, and touring showrooms and businesses, contributed to positive learning experiences.

Though the findings indicate that both New York and China study tour participants perceived their tour experiences as educational, the quantitative analysis also found statistically significant differences in how domestic and international study tours promote learning and general knowledge of the profession's practices and trends. The analysis suggests that the China study tour participants perceived their learning experiences as more meaningful and positive than the New York study tour participants did. This finding lends support to research by Arcodia and Dickson (2013) indicating that cultural immersion results in greater student learning. Though the New York study tour participants were immersed in a new culture, it was still an American environment with regional differences. In contrast, the China study tour immersed participants in a foreign culture.

The present study's findings also support Allen and Young's (1997) work suggesting that cultural immersion promotes experiential learning by integrating classroom concepts with real-world issues through the five senses. Allen and Young (1997) contended that if students can see, taste, feel, hear, and touch the objects or items in the study tour environment, then learning will have a greater and deeper meaning for students. For instance, in the present study participants reported how much they learned from going to showrooms, meeting professionals, and exploring building sites about which they had first learned in the classroom. In addition, participants from both study groups cited food,

conversations with locals, and personal explorations of the tour environment as additional elements in their learning of local culture.

The quantitative findings also indicated that before both study tours, participants expected that the cultural engagement during the tours would make no significant difference in enhancing experiential learning. However, after completing their study tours, participants' perceptions had undergone statistically significant changes, and they perceived the cultural engagement during domestic and international study tours as making a significant difference in enhancing experiential learning. Once again, the quantitative findings indicate that, before and after the study tours, the China study tour participants overwhelmingly had the most positive view of the experiential learning obtained from the study tour. Although the New York tour participants also held a positive attitude toward their experiential learning, their enthusiasm for the study tour was consistently less than that of their counterparts on the China study tour.

The qualitative analysis indicates that China study tour participants developed and valued close social bonds with fellow students, while the New York study tour participants placed less emphasis on creating such peer bonds. The China study tour participants' inability to understand the Chinese language, cultural customs, and beliefs could have encouraged them to form strong social strong bonds with their fellow students. The longer duration of the China study tour might have also played a role in promoting closer student bonds.

The reflection journals proved to be a useful educational tool for students' critical thinking skills and ensured that students observed and experienced the world around them. The journals encouraged students to write freely their thoughts on their daily experiences and to create a visual inventory that they can reference for future inspiration. The quantitative findings indicate that students, especially the China study tour participants, perceived reflection journals as a positive, significant assignment. The quantitative findings suggest that the China study tour participants, more so than the New York study tour participants, strongly perceived the reflection journals as contributing to their learning experiences.

Conclusions

In conclusion, the research study's findings indicate that both participants on domestic and international study tours benefit from the experiential learning opportunities. The findings indicate that course objectives are being met; however, findings also indicate that the China study tour participants perceived their study tour experiential learning as being more robust academically than New York study tour

participants did. In terms of cultural engagement enhancing experiential learning, the findings suggest that China's tour participants more so than the New York tour participants had a more positive outlook toward their international study tour. The reasons for this occurrence may lie in the following: participants' immersion in a foreign culture, the longer tour duration of the China study tour, social ties amongst participants that were forged due to a lack of foreign language skills, participation in a cultural study tour in a country few people experience, and exposure to global designers and industry leaders. Consequently, the study lends support to the idea that the cultural experiences of participants on international study tours tend to lead to more positive learning experiences than those of students who participate on domestic study tours.

Findings further support making reflection journals an integral part of experiential learning. The act of writing in detail the day's activities and experiences allowed constructive reflection, which through adaptation into new knowledge can serve as a base for future inspiration and creation of ideas. Overall, international study tour participants appeared to gain more appreciation for the learning experiences obtained on the study tour than domestic study tour participants did.

Even though the analysis suggests that the study tours are achieving course objectives, there are opportunities for improvement. The first area for improvement pertains to developing formal course objectives for the China study tour. The second area for improvement is setting up a yearly assessment process for both study tours that would allow for both student and faculty feedback. This is of particular importance because presently the study tours are not being reviewed or revised to respond to the constantly changing needs of students and faculty.

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Appendix Survey Questions

Demographics:

1. Circle your age.
 - a) 18–21
 - b) 22–25
 - c) 26–29
 - d) 30 or older
2. Circle your academic level.
 - a) Sophomore
 - b) Junior
 - c) Senior
 - d) Graduate
3. Circle your academic major.
 - a) Fashion merchandising
 - b) Furnishings and interiors
 - c) Other
4. Circle your study tour program.
 - a) China
 - b) New York Fashion merchandising
 - c) New York Furnishings and interiors
5. Briefly describe why you chose to participate in the study program.
Indicate your level of agreement with the following statements.

	Strongly Agree agree (SA)	Neutral (A)	Disagree (N)	(D)	Strongly disagree (SD)
6. I feel that I have an understanding of business practices of firms in my field of study.	SA	A	N	D	SD
7. I feel that I have an understanding of the key trends impacting firms in my field of study.	SA	A	N	D	SD
8. I feel that it is important to tour spaces that apply the concepts I have learned in the classroom.	SA	A	N	D	SD
9. I expect this trip to increase my understanding of the responsibilities expected of a professional in my industry.	SA	A	N	D	SD
10. I feel that touring showrooms enhances the application of classroom concepts.	SA	A	N	D	SD
11. I feel that I have an understanding of the key competencies necessary for a career in my field of study.	SA	A	N	D	SD
12. I feel that I have an understanding of the strategies firms use to be successful in my field of study.	SA	A	N	D	SD
13. I feel that I have an understanding of the various career opportunities offered in my field of study.	SA	A	N	D	SD
14. I expect this trip to help apply the concepts I have	SA	A	N	D	SD

	learned in the classroom.					
15.	I expect this trip to help me relate classroom concepts to the real-world problems of a firm.	SA	A	N	D	SD
16.	I feel that it is important to experience the impact that an urban culture has on the business strategies of a firm.	SA	A	N	D	SD
17.	I feel it is important that I experience the integration of culture and the concepts I learned in the classroom.	SA	A	N	D	SD
18.	I feel that experiencing cultural activities enhance my learning.	SA	A	N	D	SD
19.	I feel that I will be better able to explore concepts because of being immersed in a different culture.	SA	A	N	D	SD
20.	I feel it is important that this trip expand my global perspective.	SA	A	N	D	SD
21.	I feel that reflecting on the day's activities helps improve my understanding of classroom concepts.	SA	A	N	D	SD
22.	I feel that keeping a daily reflection journal will give more meaning to my tour experiences.	SA	A	N	D	SD

Factors Related to Cognitive, Emotional, and Behavioral Engagement in the Online Asynchronous Classroom

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The purpose of this investigation was to examine the relationships among measures of student engagement, instructor engagement, student performance, and properties of the online classroom. The authors assessed behavioral, cognitive, and emotional engagement of students and instructors in asynchronous discussion forums and collected measures of student performance (e.g., class completion and discussion forums' grades) as well as properties of the online classroom (e.g., class size and depth of discussion prompts). Quantitative analyses on conduct exhibited by instructors and students in discussion forums from 303 online classrooms in a variety of disciplines revealed a positive association of students' cognitive engagement and instructors' behavioral engagement with the depth of the discussion prompts. Both cognitive and behavioral measures of students' engagement decreased with increased class size. For instructors, as class size increased, behavioral engagement decreased, and cognitive engagement increased. Grades improved with students' emotional engagement but declined with instructors' cognitive engagement. These idiosyncratic patterns of relationships suggest the need for further inquiry into the unique aspects of instruction in the asynchronous online classroom.

In classrooms around the world, engagement refers to the investment of resources (i.e., time and effort) that either students or instructors make to optimize the experience of learning and enhance learning outcomes (Kuh, 2003, 2009; Trowler, 2010). Several studies have found that students' engagement is related to students' satisfaction, persistence, and academic achievement (see Booliger & Wasilik, 2009; Carini, Kuh, & Klein, 2006; Trowler, 2010). Although less attention has been given to instructors' engagement, the latter is often linked not only to students' engagement, but also to instructors' satisfaction, pedagogical success, and persistence in the teaching profession (Betts, 2014; Umbach, & Wawrzynski, 2005). These are all factors that contribute to the sustainability of academic programs. In light of the challenges that higher education institutions are increasingly facing to retain students and ensure not only the acquisition of relevant knowledge and skills, but also comfort and satisfaction with the experience of learning specialized materials, engagement may be the phenomenon that can make both goals possible.

The widespread nature of online learning (Murray, Pérez, Geist, & Hedrick, 2012) has brought to the forefront the need to determine the extent to which engagement is related to students' performance (i.e., outcome measures) and to specific aspects of the online classroom (i.e., potential antecedents shaping educational practices). Although data exist, they often refer to unique small samples of classes and students and/or to less than uniform operational definitions of engagement. Furthermore, they are split between two modes of instruction, synchronous and asynchronous. The former offers both students and instructors the opportunity for

real-time (i.e., live) interactions in discussion and/or lecture forums, thereby capturing a key aspect of the traditional classroom, whereas the latter relies heavily on delayed social exchanges. The asynchronous mode allows students to complete work at their own convenience and submit it to a discussion forum or assignment drop box by a required due date. Thus, in contrast to synchronous discussion and lecture forums, where learning is based on immediate reactions to the presented material and ongoing discussion, asynchronous forums invite active reflection and analysis prior to the action of producing a response (Bates, 1997; Gilbert & Dabbagh, 2005; Petty & Farinde, 2013). As such, they emphasize more heavily the role of the instructor as a facilitator of learning, a purportedly less visible role than the one performed by the instructor in both traditional and synchronous online classrooms (Dennen, Darabi, & Smith, 2007; Schellens, Van Keer, & Valcke, 2005). Interestingly, in the synchronous online environment, evidence exists that interactions with instructors in discussion forums are related to students' satisfaction and participation (McBrien, Jones, & Cheng, 2009). However, in the asynchronous online environment, where students can access class materials at any time, questions exist on the nature of student-instructor interactions and on their potential impact on engagement (Hew, Cheung, & Ng, 2010).

The Present Study

Although questions exist regarding the influence of the asynchronous mode of instruction on engagement, little or no evidence exists of its impact in quality-assured classrooms where key aspects of the curriculum,

presentation, and instruction not only are uniform across sections of the same course (Boston, Ice, & Gibson, 2011; Legon, 2006), but also have been reviewed and judged by independent subject-matter and education experts as promoting learning (Coffman & Klinger, 2013). Quality-assured classrooms offer unique opportunities for studying engagement as they largely eliminate the variability (i.e., noise) related to the distinctive characteristics of the instructor's selected material and presentation across different sections of the same course. They also rely on activities (e.g., discussion forums) that can be found in all courses and sections, thereby making aggregation or comparison of different classes easier. Yet, standardization of course materials and activities may have an undesirable impact on engagement. For instance, it may unintentionally promote the strict adoption of uniform rules of conduct in both students and instructors, thereby concealing evidence of engagement. Thus, the main purpose of the present study was to examine the relationship between engagement measures of students and instructors (Fredricks, Blumenfeld, & Paris, 2004; Kuh, Kinzie, Bridges, & Hayek, 2007) in asynchronous discussion forums of quality-assured classrooms and students' performance measures (e.g., class completion and discussion forum grades), as well as common properties of the online classroom (e.g., class size and depth of discussion prompts). The ancillary purpose was to examine the relationship between measures of engagement of students and instructors in such classrooms.

The predictions tested in the present study relied on the assumption that if the characteristics of the quality-assured asynchronous classroom did not conceal engagement, findings could be expected to illustrate the educational value of engagement and thus replicate those observed in other more traditional types of classrooms (including face-to-face and online synchronous). Based on this assumption, we predicted that students' performance measures (i.e., grades of discussion forums and class completion) would be positively correlated with the engagement exhibited by both students and instructors (Booiger & Wasilik, 2009; Carini et al., 2006). Of course, the possibility that each dimension might contribute to performance differently was examined, although existing evidence did not permit specific predictions regarding the relative contribution of cognitive, emotional, and behavioral engagement to students' performance (Duncan, Kenworthy, & McNamara, 2012; Grier-Reed, Appleton, Rodriguez, Ganuza, & Reschly, 2012).

Furthermore, the prediction that specific properties of the asynchronous classroom, such as depth of discussion prompts and class size, might impact engagement differentially was assessed. Existing evidence suggested that the depth of the discussion prompts might be positively related to cognitive engagement (Robinson, & Hullinger, 2008; Zhu, 2006), whereas class size might be negatively related to behavioral engagement (Kim, 2013; Taft,

Perkowski, & Martin, 2011). As students and instructors would be likely to interact with each other in a pattern of mutual influences, we expected engagement of the former to be positively related to engagement in the latter (Nandi, Hamilton, Chang, & Balbo, 2012; Xie, DeBacker, & Ferguson, 2006). Therefore, although dimensions of students' engagement might be expected to be more strongly linked to performance measures and properties of the asynchronous classroom than instructors' dimensions of engagement, we anticipated engagement of both parties not only to mimic the same patterns of variability, but also to be mutually compatible. We tested these predictions following the methodology described below.

Method

Participants

Three hundred and four online asynchronous classes ranging in size from 2 to 31 students ($M = 15.26$; $SD = 6.86$) were selected for the study, resulting in 4,639 students and 304 instructors. Four or five sections of the same course taught by different instructors were selected from the pool of available archived sections, and up to four students were randomly selected from each class section. For sections consisting of four or fewer students, all students in the class were included. Courses covered a variety of academic subjects, including business, healthcare, and behavioral and social sciences. Their curriculum was largely predefined in accordance with standards specified by Quality Matters (see Legon, 2006; Willis, 1994; Zygoris-Coe, Swan, & Ireland, 2009). Such standards are assumed to ensure optimal, evidence-based learning conditions in key aspects of the curriculum and instruction of a course, such as course overview, learning objectives, assessment, instructional materials and resources, course activities, learner interaction, technology, learner support, and accessibility and usability of tools and materials (Shattuck, Zimmerman, & Adair, 2014). The structural frame of each section of a course included the following weekly responsibilities on the part of the instructor: offer a lecture in the form of a document and/or video, serve as an interactive facilitator in discussion forums, and provide feedback on students' discussion posts and written assignments. Additionally, during the first week of each class, the instructor was required to respond to each student's introduction in a forum specifically devoted to this purpose.

Materials and Procedures

For each section of a selected class, key properties of the online classroom (i.e., class size and depth of discussion prompts), students' performance (i.e., class

completion rates and discussion forum grades), and measures of behavioral, cognitive, and emotional engagement were collected (see Table 1 for a summary of the variables used).

The online classroom. Key properties of the online classroom included class size and depth of discussion prompts as determined by the six levels of the Bloom's Taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956).

Students' performance. Students' performance included class completion rates (i.e., the proportion of students who completed a class over the number of students who attended during the first week) and discussion forum grades.

Engagement. According to Fredricks and colleagues (2004), engagement is characterized by three dimensions: behavioral (e.g., compliance with attendance and involvement), cognitive (e.g., investment in one's activities and appreciation of challenges), and emotional (e.g., positive affective reactions, including enjoyment and sense of belonging). In the present study, key aspects of each dimension were translated into indices that

could be observed and measured in the online classroom.

Behavioral engagement. A key aspect of behavioral engagement is involvement (Fredricks et al., 2004). As a result, two indices of involvement were selected: response rates in discussion forums and length of discussion posts. For both students and instructors, response rates in discussion forums (i.e., average number of posts per student or instructor) and length of discussion posts (i.e., the average number of words in posts) served as measures of behavioral engagement (i.e., participation).

Emotional engagement. Emotional engagement is an overall positive affective reaction to the class, including enjoyment and sense of belonging (Fredricks et al., 2004). To capture this definition, two indices were identified: frequency of self-referential notes (e.g., I, we, etc.) relative to the number of words in posts, and overall connotation of posts (as determined by the difference between positive and negative words used).

Cognitive engagement. According to Fredricks and colleagues (2004) and Pintrich (2003), cognitive engagement is investment in one's activities. To assess

Table 1
Descriptive Statistics

Measure	<i>M</i>	<i>SD</i>	Scale	<i>n</i>
<i>Properties of the online classroom</i>				
Class size	15.260	6.861		304
Depth of discussion prompts	3.658	1.343	1-6	304
<i>Instructors</i>				
<i>Behavioral engagement</i>				
Response rate	0.212	0.120		304
Length of discussion posts (i.e., number of words)	75.318	50.205		303
<i>Cognitive engagement</i>				
Depth of posts	2.248	1.076	1-6	304
Lexical density of posts	78.765	9.828	0-100	303
<i>Emotional engagement</i>				
Frequency of self-referential quotes in posts	0.005	0.006	0-1	303
Connotation of posts	3.944	3.309		304
<i>Students</i>				
<i>Behavioral engagement</i>				
Response rate	3.480	0.543		304
Length of discussion posts (i.e., number of words)	349.381	123.334		304
<i>Cognitive engagement</i>				
Depth of posts	3.153	0.993	1-6	304
Lexical density of posts	55.245	10.773	0-100	304
<i>Emotional engagement</i>				
Frequency of self-referential quotes in posts	0.011	0.012	0-1	304
Connotation of posts	1.788	2.391		304
<i>Performance</i>				
Class completion rates	0.906	0.090	0-1	304
Grades of discussion forums	4.303	0.581	1-5	304

Table 2
Pearson Correlations

	PC:CS	PC:DP	IB:RR	IB:LP	IC:DP	IC:LD	IE:SR	IE:PN	SB:RR	SB:LP	SC:DP	SC:LD	SE:SR	SE:PN	S:CC	S:DG
PC:CS	1															
PC:DP	-.249**	1														
IB:RR	-.312**	.144*	1													
IB:LP	-.013	.019	-.053	1												
IC:DP	.230**	.074	-.075	.503**	1											
IC:LD	.059	-.015	.077	-.855**	-.509**	1										
IE:SR	.131*	.035	-.149**	.302**	.246**	-.288**	1									
IE:PN	-.043	-.020	.045	-.285**	-.278**	.279**	-.092	1								
SB:RR	-.189**	.075	.062	-.045	-.042	.062	.003	-.113*	1							
SB:LP	-.126*	.018	-.002	.110	-.033	-.095	-.219**	-.050	.112	1						
SC:DP	-.144*	.435**	-.024	.048	-.023	.014	-.030	.021	.101	.313**	1					
SC:LD	.052	-.002	.018	.025	.019	.029	.058	-.017	-.027	-.401**	-.138*	1				
SE:SR	-.019	.098	-.067	.037	.004	-.027	.192**	.029	.035	-.091	.085	-.019	1			
SE:PN	.041	.006	-.034	-.136*	-.075	.117*	-.045	.256**	-.108	-.094	-.092	.127*	-.168**	1		
S:CC	.088	.031	-.056	-.061	-.042	.005	.021	-.060	.013	-.069	.104	.062	.008	.013	1	
S:DG	.160*	-.084	-.005	.061	-.160**	-.015	.012	.039	.023	.016	-.077	.063	.139*	-.068	.011	1

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

Listwise n = 303

Key: PC = Properties of the online classroom; I = Instructor; S = Students; B = Behavioral engagement; C = Cognitive engagement; E = Emotional engagement; CS = Class size; DP = Depth of discussion prompts or posts; RR = Response rate; LP = Length of posts; LD = Lexical density; SR = Frequency of self-referential quotes; PN = Positive or negative connotation of posts; CC = Class completion rate; DG = Discussion forum grade

this factor, the depth of posts in discussion forums and their lexical density (i.e., the number of different words relative to the total number of words) were utilized. Depth was evaluated according to Bloom's taxonomy (Bloom et al., 1956; Zhu, 2006). Lexical density, which measures the difficulty of reading text, was computed by dividing the number of different words by the total number of words, and then multiplying the obtained value by 100. The easier a text is to read, the lower its lexical density.

Results

Descriptive statistics regarding the variables examined in the present study are reported in Table 1. Due to some missing data in one record, most variables have a sample size 304, while a few have 303 cases. As indicated earlier, the purpose of the present study was to examine the relationships among measures of behavioral, cognitive, and emotional engagement (Fredricks et al., 2004; Kuh et al., 2007) of students and instructors in asynchronous discussion forums and students' performance as well as properties of the online classroom. Pearson correlations were calculated for the set of variables described above using listwise deletion, yielding a uniform sample size of 303 class sections. The complete correlation matrix is provided in Table 2, and significant correlations are reported below. All significance tests were two-tailed.

Properties of the Online Classroom

The selected properties of the classroom were correlated with specific types of engagement. For instance, the depth of the prompts of discussion forums was positively related to students' cognitive engagement (depth of posts, $r = .435$, $p < .01$) and faculty's behavioral engagement (response rate, $r = .144$, $p < .05$).

For students, increases in class size were accompanied by decreases in behavioral engagement (response rate, $r = -.189$, $p < .01$, and length of discussion posts, $r = -.126$, $p < .05$) and cognitive engagement (depth of posts, $r = -.144$, $p < .05$). For instructors, cognitive engagement increased (depth of posts, $r = .230$, $p < .01$), one measure of emotional engagement increased (frequency of self-references, $r = .131$, $p < .05$), and behavioral engagement decreased (response rate, $r = -.312$, $p < .01$) as class size increased. There was a negative correlation between the class size and the depth of the discussion prompt ($r = -.249$, $p < .01$).

Measures of Students' Performance

Measures of students' performance produced a different pattern of results. Class completion rates were not related to measures of engagement, yet

discussion forum grades correlated positively with students' emotional engagement (self-references, $r = .139$, $p < .05$) while grades had a negative correlation with instructors' cognitive engagement (depth of posts, $r = -.160$, $p < .01$). There was a positive correlation between class size and discussion grades ($r = .160$, $p < .05$).

Measures of Engagement of Students and Instructors

Emotional engagement in students and instructors tended to be positively correlated (frequency of self-referential quotes: $r = .192$, $p < .01$; connotation of posts: $r = .256$, $p < .01$). Students' emotional engagement (as measured by the positive connotation of posts) improved as the lexical density of instructors' posts increased ($r = .117$, $p < .05$). However, there was a negative correlation between the emotional connotation of students' posts and the instructors' behavioral engagement measure of length of posts ($r = -.136$, $p < .05$). Instructors' emotional engagement, as measured by frequency of self-references, was negatively associated with the length of students' discussion posts ($r = -.219$, $p < .01$). The correlation between students' response rate and instructors' connotation of posts was also negative ($r = -.113$, $p < .05$).

The strongest correlations among the variables examined in this study were between different measures of engagement of instructors. There were also several significant correlations between different measures of students' engagement. For instance, the correlation between lexical density (cognitive) and length of posts (behavioral) was negative for both instructors ($r = -.855$, $p < .01$) and students ($r = -.401$, $p < .01$). An inverse relationship between lexical density and depth of posts (both cognitive measures of engagement) was also observed for instructors ($r = -.509$, $p < .01$) and students ($r = -.138$, $p < .05$). Other significant correlations with instructors' lexical density were the instructors' emotional engagement measures of frequency of self-references ($r = -.288$, $p < .01$) and connotation of posts ($r = .279$, $p < .01$). For students, the correlation between lexical density and connotation of posts was positive ($r = .127$, $p < .05$).

Depth of instructors' posts was associated positively with instructors' emotional engagement, as measured by the frequency of instructors' self-references ($r = .246$, $p < .01$), but negatively with the instructors' emotional engagement measure of connotation of posts ($r = -.278$, $p < .01$). Positive correlations were observed between behavioral length of posts and cognitive depth of posts for both students ($r = .313$, $p < .01$) and instructors ($r = .503$, $p < .01$). Other significant correlations that appeared for instructors, but not for students, were a negative association between response rate and frequency of

self-references ($r = -.149$, $p < .01$), a positive relationship between length of posts and frequency of self-references ($r = .302$, $p < .01$), and a negative association between length of posts and connotation of posts ($r = -.278$, $p < .01$). Finally, for emotional engagement, frequency of self-references and positive connotation of posts were negatively correlated for students ($r = -.168$, $p < .01$), but this relationship was not significant for instructors.

Discussion

The results presented above can be summarized in five points. First, the positive correlations between depth of the discussion prompt and measures of engagement (i.e., students' cognitive engagement and faculty's behavioral engagement) suggest that both students and instructors may respond well to high pedagogical expectations. Second, the pattern of relationships involving class size suggests that instructors may be more cognitively engaged in larger classes, perhaps as a means of counteracting their concerns regarding learning and/or their reduced behavioral engagement in such classes. Instead, students' responses to larger classes seem to be more uniform, including declines in both behavioral and cognitive engagement. Third, the fact that students who are performing well in a class may express their comfort by using a more personal tone (as indicated by the positive relationship between use of self-references and grades) is not surprising. It is also not surprising that instructors' cognitive engagement (as measured by depth of posts) is inversely related to discussion grades. This may suggest that instructors who are more cognitively engaged have more discriminating grading practices. It supports the commonly held view that increased focus on content accompanies "tough graders." Fourth, the concurrent increase in students' emotional engagement (as measured by the positive connotation of posts) and instructors' cognitive engagement (as measured by lexical density) is open to two possible interpretations. It is possible that an instructor's well-articulated posts lead students to feel appreciation for the challenges offered by the instructor's writing. Alternatively, students who express their appreciation of the discussion forum activity in their post may lead the instructor to be more cognitively engaged in his/her responses. Of course, a correlational study such as ours cannot offer a test for assumptions involving cause-effect relationships. Fifth, the declines in students' behavioral engagement (as measured by the length of discussion posts) with increases in instructors' use of self-referential quotes also entertain two feasible interpretations. Namely, it is possible that an

instructor's enhanced self-focus may discourage students from further developing the narratives of their posts. Alternatively, the instructor's response to minimal posts may be to offer more self-referential information in hopes of increasing students' output. Although in our correlational study these cause-effect relationships cannot be directly tested, it is reasonable to interpret the emotional engagement experienced by students and instructor as mutually reinforcing (as demonstrated by the use of self-referential quotes and words with a positive connotation). However, the fact that less emotional engagement in students is accompanied by longer narratives posted by the instructor appears to tell a different story. It is entirely possible that the instructor responds to students' weak engagement by writing longer posts in hopes of introducing a helpful model. It is also possible that longer posts by instructors are perceived by students as creating unattainable standards, thereby leading to discouragement and/or disengagement.

Did the findings of analyses conducted on the quality-assured asynchronous classrooms of the present study replicate those observed in other more traditional types of classrooms (including face-to-face and online synchronous)? We predicted that students' performance measures (i.e., grades of discussion forums and class completion) would be positively correlated with the engagement exhibited by both students and instructors (Booliger & Wasilik, 2009; Carini et al., 2006). We found either no relationship or a more complex one than expected. In fact, class completion rates were not significantly related to engagement, whereas grades increased with students' emotional engagement and decreased with instructors' cognitive engagement.

Interestingly, the prediction that specific properties of the asynchronous classroom, such as depth of discussion prompts and class size, might impact engagement differentially found more support. In fact, class size was found to be negatively related not only to behavioral engagement (Kim, 2013; Taft et al., 2011) of both students and instructors, but also to students' cognitive engagement. Contrary to expectations, instructors' cognitive and emotional engagement was found to increase with class size, indicating that instructors' responses to the number of students in class were more diverse than those of students, perhaps because instructors recognized class size as a problem that is to be addressed. The present data, however, did not warrant reliable conclusions regarding the ideal class size for asynchronous online instruction as they represented mere correlations. Data from targeted experimental manipulations of class size could offer evidence of cause-effect relationships and perhaps help researchers and educators identify a

threshold above which adding more students to a class would be unwarranted.

Nevertheless, the prediction that the depth of the discussion prompts would be positively related to students' cognitive engagement (Robinson & Hullinger, 2008; Zhu, 2006) was supported. It was also found that the depth of the discussion prompts was positively related to instructors' behavioral engagement. As students and instructors were expected to interact with each other in a pattern of mutual influences, we predicted that engagement of the former would be positively related to engagement in the latter (Nandi et al., 2012; Xie et al., 2006). Findings regarding the emotional engagement of both parties supported this prediction, but the pattern uncovered was much more complex. Students' emotional engagement was found to increase with instructors' cognitive engagement and decrease with instructors' behavioral engagement, whereas students' behavioral engagement decreased with instructors' emotional engagement.

Although relationships were detected, the magnitude was small for most. It is reasonable to assume that the constraints related to quality-assured curricula and standards of conduct might have weakened the variability of the data set and thus reduced the magnitude of the observed relationships. The relatively small relationships between performance measures and dimensions of engagement (see also Umbach & Wawrzynski, 2005) might also underscore the fact that learning outcomes stem from a variety of sources, of which students' engagement is only one. Nevertheless, distinctive patterns of relationships were observed which encourage further inquiry into the unique aspects of the human dynamics of asynchronous online learning.

In our opinion, the main task of future research is to determine whether the variables contributing to the patterns of relationships uncovered in the present investigation can be described as the causes of specific effects, the effects themselves, or the mere recipients of the influence of a third factor. For instance, the experimental method may be used to manipulate key aspects of the online classroom (e.g., class size) to assess their potentially different effects on the engagement of both students and instructors. If this approach is applied to a variety of subject matters, it may be able to offer valuable information regarding the ideal number of students for asynchronous online classes in general or for asynchronous online classes covering specific subject matters. Future research may also directly examine the extent to which current results can generalize to the synchronous online modality and to face-to-face instruction across the multitude of subject matters that are taught in colleges and universities. Although future research is intended to address the limitations of current research, it is important to recognize that the present findings have

implications for the design of curricula in asynchronous classes. The most relevant take-home message of the present study, which also illustrates one of its limitations, is that learning is a complex process shaped by the array of factors and properties that, at any given point in time, characterize the online classroom and the cognitions and actions of its participants (i.e., students and instructors). Thus, immediate measures of performance, such as class grades and completion rates, may be less able to capture the impact of these factors and properties than long-term measures of attitudes towards learning and future performance. For instance, discussion prompts whose cognitive demands approach the top levels of the Bloom's taxonomy can be beneficial to student learning, albeit their impact may not be visible on immediate measures of performance, such as class grades and completion rates, but may redefine students' approach to learning and performance in subsequent classes.

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Engaged Journalism: Using Experiential Learning Theory (ELT) for In-Class Journaling Activities

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Educators have long recognized the value and import of class journaling. Traditional approaches to journaling, however, only engage students in one mode of communicative expression while allowing them to procrastinate in writing their entries. Typical journals are also read exclusively by the instructor, which overlooks the opportunity for students to learn from one another. In response to each of these limitations, the present paper outlines a semester-long journaling activity we call Engaged Journalism. We begin by situating Engaged Journalism within the theoretical framework of Kolb's (1984, 2015) Experiential Learning Theory (ELT). Next, we offer a step-by-step description of the activity. We then discuss four specific benefits from using such a creative approach to in-class journaling: (1) a more holistic measurement of student comprehension, (2) engagement of potentially disengaged students, (3) enriched class discussion and cross-interaction, and (4) the creation of additional entry points for clarification. We conclude with variations on a theme (i.e., alternative ways in which Engaged Journalism can be used both within and outside of the classroom).

Educators have long recognized the value of class journaling as a tool to engage students in constructive and reflective processes (Hampton & Morrow, 2003; Hubbs, & Brand, 2005; Ross, 1998; Russ, 2012). Semester-long journaling activities typically require students to synthesize and reflect upon the material they have read in a series of brief entries, which are then turned into the instructor periodically or at semester's end. The resulting journals are read by the instructor, graded, and returned to the student.

Such a traditional approach to class journaling is beneficial in several ways; however, it is not without its limitations. The first shortcoming is that it only engages students in one mode of communicative expression: essay writing. Second, even when students are tasked to write journal entries periodically, they often procrastinate until the entire journal is due (Robey, n.d.). Finally, a fundamental shortcoming of the typical class journal is that its end result is only seen by the instructor. This reality results in limited feedback for the student while overlooking the invaluable opportunity for students to learn from one another (Curtis et al., 2009).

Addressing these limitations, scholars from a variety of disciplines have advocated for more creative approaches to journaling in order to engage students and provide a deeper learning experience (Deaver & McAuliffe, 2009; Hampton & Morrow, 2003; La Jevic & Springgay, 2008). Such suggestions include photo journaling (Ardoin et al., 2014; Land, Smith, Park, Beabout, & Kim, 2009), creative art project development (Deaver & McAuliffe, 2009; La Jevic & Springgay, 2008), online blogging (Bouldin, Holmes, & Fortenberry, 2006), and even dance experiences (Barbour, 2005). Building on suggestions by each of these scholars to engage students through several modes of creative expression (Sridevi, Gunasekaran, &

Paranthaman, 2012) while simultaneously grounding our understanding in Kolb's (1984, 2015) Experiential Learning Theory (ELT), the present paper presents a teaching activity we call Engaged Journalism.

Engaged Journalism can be used in a variety of courses, spanning a multitude of disciplines (e.g., Anthropology, Communication, Sociology, and Psychology, to name but a few). Four specific learning objectives of Engaged Journalism include: (1) engagement with course concepts through multiple modes of creative expression; (2) experience with all four stages of ELT's learning process: concrete experience, reflective observation, abstract conceptualization, and active experimentation; (3) presentation of course concepts and understanding before a classroom of peers; (4) observation, critique, and engagement in dialogue with one others' understandings of course concepts. In order to adequately address each of these learning objectives, Engaged Journalism is envisioned within the present paper as a semester-long activity. Although its entry prompts intentionally vary in both form and style, each prompt should require approximately 15-30 minutes of class time.

Theoretical Framework

Scholars from a variety of fields who focus on curriculum development within higher education use Kolb's (1984, 2015) Experiential Learning Theory (ELT) as a framework for educational innovation (see Kolb, Boyatzis & Mainemelis, 2001; Kraft & Kielsmeier, 1995; Moon, 2004). Kolb (2015) defines learning as "the process whereby knowledge is created through the transformation of experience" (49). Thus, it is the grasping or interpretation of raw experience and the transformation of that experience that builds

knowledge. Kolb also argues that knowledge creation occurs as a dynamic learning cycle driven by the resolution of the dual dialectics of action/reflection and experience/abstraction. For each of these reasons, ELT portrays two dialectically related modes of grasping raw experience – Concrete Experience (CE) and Abstract Conceptualization (AC) – and two dialectically related modes of transforming experience – Reflective observation (RO) and Active Experimentation (AE). The learning process then consists of these four modes which build upon each other in stages. The first stage of ELT, Concrete Experience (CE) (i.e., feeling), endorses a receptive and experience-based approach to learning. The second stage, Reflective Observation (RO) (i.e., watching), scrutinizes the thoughts and behaviors that emerge during concrete experience. The third stage, Abstract Conceptualization (AC) (i.e., thinking), uses personal observation to develop an idea or generalized theory from which new action can be formulated. Finally, Active Experimentation (AE) (i.e., doing) tests hypotheses in order to implement new knowledge into future situations and experiences (Kolb et al., 2001; Kolb & Kolb, 2006).

Kolb (1984, 2015) argues that the learning process works best when learners have the opportunity to connect with concepts at each stage, as immediate or concrete experience is the basis for observation and reflection. In other words, when the learner “touches all the bases” (51) by experiencing (CE), reflecting (RO), thinking (AC), and acting (AE) in a recursive process, they are more likely to retain information and develop critical thinking abilities (Arends, 2014; Coffield, Moseley, Hall, & Ecclestone, 2004b; Kolb, 2015; Muscat & Mollicone, 2012). Developing assignments geared towards all four stages of the ELT “prepares learners for cultivating and directing personal growth by compelling them to plan for and apply the insights and knowledge gained” (Russ, 2012, 316). Consequently, the four-stage learning cycle of Kolb’s ELT creates a “recursive, holistic, and dialectic process of human learning” necessary for full student engagement as each stage of the cycle places different demands on learners (317; see also Frontczak, 1998; Healey & Jenkins, 2000; Jamil & Naureen, 2011; Sugarman, 1985).

Kolb’s (1984, 2015) theoretical framework is especially significant for Engaged Journaling, as it requires students to engage with course material in ways that speak to all four stages of ELT. Students are to choose from a variety of creative journaling options and then share their responses via presentation and peer critique. The result is a more holistic process of learning for the student, which spans throughout the entire semester. The following section outlines the specific steps of this semester-long activity in more detail.

Description of Activity

Step 1. Assign course readings as regularly scheduled. At least four different readings must be scheduled to ensure students have the opportunity to apply a journaling activity in each stage or dimension of ELT.

Step 2. In response to each reading, require students to evidence their understanding of major course concepts by choosing one mode of creative expression from within each of the four stages outlined below. Giving students a choice of engagement is consistent with Kolb’s ELT, as presenting students with options allows them to engage with the dialectical tensions of action/reflection and experience/abstraction (Kolb, 2015; Kolb et al., 2001).

Stage one: concrete experience. In accordance with the first stage of Kolb’s (1984, 2015) four-stage learning cycle, the following five prompts can be used to ensure students engage in receptive and experience-based learning. Each of these options aligns with stage one because they require students to take an active and hands-on approach to learning through the creation of social media artifacts. In fact, Bouldin, Holmes and Fortenberry (2006) advocate for the use of technology – such as blogs or the development of social media – because it engages students in a way that traditional journaling cannot, while creating a deeper learning experience and increased retention of course concepts.

- #1. *Tweet*: Summarize one major concept from the reading in 140 characters or less.
- #2. *YouTube video*: Upload an original 2-minute video that illustrates one major concept from the reading (see also Jenkins & Dillon, 2013a).
- #3. *Podcast*: Upload an original 2-minute podcast that illustrates one major concept from the reading.
- #4. *Facebook profile* (1 of 2): Conduct a content analysis of your own Facebook profile, focusing on the representation of identity formation and performance (see also Jenkins & Dillon, 2013b; Gallardo, Jenkins, & Dillon, in press).
- #5. *Facebook profile* (2 of 2): Conduct a content analysis of Facebook profiles from a particular grouping of your friends (work, social, church, family), focusing on the representation of identity formation and performance as it relates to group membership.

Stage two: reflective observation. The second stage of Kolb’s (1984, 2015) model involves reflective observation via shared experience. Consequently, the following journal options require students to connect course content with their own lived experiences via

storytelling, self-reflection, and/or personal observation. This opportunity encourages deep learning, as the intention is to develop a personal understanding of the material and relate it to what is already known by the student (Kraft & Kielsmeier, 1995).

- #6. Short story: Write a 1-page short story based on past experiences that illustrates one major concept from the reading.
- #7. Personal example: In 1-2 pages, use a personal example from your life to illustrate one major concept from the reading.
- #8. Original poem or song lyric: Create an original poem or song lyric that illustrates one major concept from the reading.
- #9. What if...?: In 1-2 pages, respond to a hypothetical scenario provided by the instructor (see Appendix for a sample scenario we have used in past semesters).
- #10. Muddiest point: Write 3 well thought-out questions inspired by the reading.

Stage three: abstract conceptualization. Building upon stage three of Kolb's learning cycle, Deaver and McAuliffe (2009) argue that visual prompts can engage students in ways that non-traditional teaching strategies cannot. Requiring students to reflect on experience and course concepts through the creation of art and/or visual journaling (e.g., painting, sculpture, photography, etc.) can be highly beneficial as imagery captures experience in a way that allows them to make cognitive sense of concepts (Ardoin et al., 2014; La Jevic & Springgay, 2008; Land et al., 2009). In order to engage students through visual thinking and abstract conceptualization, we suggest a number of creative journaling options:

- #11. *Sculpture*: Create a piece of sculpture that illustrates one major concept from the reading.
- #12. *Photographs*: Produce 2-3 original photos that illustrate one major concept from the reading.
- #13. *Comic strip*: Create an original cartoon that illustrates one major concept from the reading.
- #14. *Conceptual art/poster/diagram*: Create a visual image that illustrates one major concept from the reading.
- #15. *Clothing/furniture*: Design an original piece of clothing or furniture that illustrates one major concept from the reading.

Stage four: active experimentation. The final learning stage of ELT emphasizes the implementation of new knowledge into future experiences, thus creating a shared experience for students and their fellow classmates (Barbour, 2005). Journal prompts that challenge students to move beyond comprehension and self-reflection in order to physically embody course concepts include the following:

- #16. *Silent film scene*: Write and perform an original silent film scene that illustrates one major concept from the reading.
- #17. *Class activity*: Develop and present a 5-minute activity that illustrates one major concept from the reading.
- #18. *Dance moves*: Demonstrate a set of choreographed dance moves that illustrate one major concept from the reading.
- #19. *30-second short*: Prepare and share a 30-second oral presentation that illustrates one major concept from the reading.
- #20. *Reconciliatory letter*: Write a reconciliatory letter to someone in your past/present life.

Step 3. For each assigned reading, have students present their Engaged Journaling entries with one another in dyads, small groups, or one-by-one to the entire class. Students who choose to upload an original video to YouTube (option #2), for example, should present the video to their classmates and explain how it illustrates one major concept from the reading. Similarly, students who respond to a hypothetical scenario (option #9) should explain the rationale for their written response, and students who developed an original class activity (option #17) should invite volunteers to help demonstrate how their activity works.

Step 4. Following each student's presentation, classmates should then be given the opportunity to critique, discuss, and ask questions. If students share their journal entries with the entire classroom, this offers a seamless entry point into class discussion on major course concepts. If students share in dyads or small groups, each group can take time to report out on their conversations, conclusions, points of confusion, etc.

Debriefing with Results

Over the past four years, we have used this activity in nearly a dozen course sections at four different universities. Classes in which we have successfully used Engaged Journaling include Communication Theory, Interpersonal Communication, Organizational Communication, and Intercultural Communication, to name but a few. Throughout this time, we have been routinely surprised by the students' positive reactions, as well as the activity's positive effects upon our classroom environment. More specifically, we have observed that Engaged Journaling (1) offers a more holistic measurement of student comprehension, (2) engages potentially disengaged students, (3) enriches class discussion and cross-interaction, and (4) creates additional entry points for clarification.

Holistic measurement of comprehension. The first result we have observed from our use of Engaged Journaling stems from the way it engages students

through multiple modes of creative expression. Traditional journaling activities only ask students to write about their understanding of course concepts. Such a limited and limiting approach favors English-speaking students, as well as students who have strong writing skills. It ultimately serves as a better measure of students' ability to *write about* course concepts than it does students' actual understanding of those concepts. The requirement to explain a reading via standard essay format, for instance, might prove difficult for a student who is not a strong writer. Similarly, international and second-language students may find it impossible to express the depth of their understanding through written expression alone. Engaged Journaling, however, allows students to express themselves in a variety of ways – many of which are unhindered by the limitations of language (Jenkins, 2014a, 2014b; Leitch, 2006). Consequently, the opportunity to record a podcast (option #3), create an abstract piece of sculpture (option #11), or design a piece of clothing/furniture (option #15) can result in a much more holistic measurement and accurate representation of student comprehension.

Engaging the disengaged student. While using Engaged Journaling in the classroom, we have also witnessed time and time again as non-participatory students seem to come “out of their shell” in front of classmates. During one of our first semesters using this activity, for instance, a seemingly disengaged student who did not excel at writing or feel comfortable participating in class discussion became visibly excited about the opportunity to share an original poem/song lyric (option #8). On the day his first journal entry was due, this student walked to the front of the classroom with an iPod and small set of speakers in hand. He then proceeded to rap before 30 of his peers on social judgment theory to the ubiquitous beat of “Rapper’s Delight.” Additional students have expressed a similar reaction via end-of-semester course evaluations and personal communication. Within her/his course evaluation for Interpersonal Communication, one student commented, “Loved the journal options... very unique and helped me pay attention to the content covered.” Another student responded similarly by describing Engaged Journaling as the “best part” of the class, and yet another student took the time to send a personal message: “Thanks you for making the class interesting... It meant a lot to a student like me to be able to use music and art to express myself... [and] the options kept me interested.”

Class discussion and cross-interaction. In addition to offering a more holistic measure of comprehension while engaging potentially disengaged students, this activity has also shown to enrich class discussion. Research shows that the majority of college students enjoy learning from their peers while also having their own opinions heard in the classroom

(Arends, 2014). For these reasons, after listening to a classmate’s three well thought-out questions (option #10) or watching a peer’s choreographed dance moves (option #18), students are typically fraught with their own comments and questions. This approach not only spurs additional participation and cross-interaction among students, but also allows a natural opportunity for students to help co-construct the classroom experience (Jenkins, 2013). Rather than covering course material through the use of a typical lecture format, instructors can use Engaged Journaling as a launching pad for classroom conversation. Consequently, they can address course material in a much more organic manner that allows the students to learn from one another while also letting their voices and opinions be heard.

Entry points for clarification. The fourth effect we have observed in the classroom includes additional entry points for clarification. When a student shares her/his understanding of a concept with the class, it not allows them to help co-construct the classroom, but also allows instantaneous feedback from the instructor. This reality is especially significant in the case that a student’s explanation is inaccurate. The same is also true for classmates who comment on, or ask questions about, another student’s journal entry. Each of these circumstances allow the instructor to immediately recognize and correct misunderstandings in the moment: misunderstandings that might have otherwise gone unnoticed with a standard journal turned in at semester’s end.

Conclusion

The present activity outlined twenty unique entry options for Engaged Journaling, five for each stage of Kolb’s (1984, 2015) four-stage learning cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Once an instructor has moved beyond the conventional mindset of class journaling, however, the range and variety of entry options is virtually endless and limited only by one’s own imagination. For instance, additional journal options we have used for abstract conceptualization (stage three of ELT) include the creation of paintings, business cards, model buildings, card/board games, secret handshakes, advertising slogans, reality television synopses, and even 3-course dinner menus, to name but a few.

Over the years we have also found the specific way in which students share journal entries with their classmates can vary dramatically, adding additional levels of interest and engagement. For example, at one point each semester we usually draw a bracket on the whiteboard prior to class. The names of those who created a 30-second short (option #19) are then placed on the bracket as a way to create a fun and playful sense

of competition. One-by-one, students face off with one another by sharing their oral explanation of a major concept. Classmates vote anonymously by a raise of hands, indicating which explanation they felt was most accurate and explanatory. The winner for each round advances, and the process is repeated until a class champion is determined.

An alternative option for presenting journal entries in an interesting and engaging manner involves displaying original sculptures (option #11), photographs (option #12), comic strips (option #13), conceptual art/poster/diagrams (option #14), and clothing/furniture designs (option #15) around the room or in a nearby hallway. Students can then take time to peruse the work, not unlike they would at a major museum or gallery exhibit. Outside faculty and students can also be invited to view these “student exhibitions,” further disseminating the students’ work and garnering outside perspectives.

Yet another unique way for students to engage with their journal entries is to (re)consider what is done subsequent to their grading. We have often offered bonus points, for instance, to students who actually mailed their reconciliatory letter (option #20). The results of this particular journal entry are especially profound, as students often use the activity’s gentle nudge as opportunity to reconcile with a friend or family member. On more than one occasion students have credited their reconciliatory letter for mending a fractured friendship, reuniting them with a distant sibling, or reopening lines of communication with an estranged parent.

Despite each of these options – or rather because of them – one potential limitation of Engaged Journaling is its myriad of choices: the activity’s greatest strength is also a possible weakness. For this reason, certain instructors might find it helpful to align 1-3 journal options with each class reading in a way that ensures students “touch all the bases” within ELT’s four-stage learning model (Kolb, 1984, 2015). This approach makes certain that students experience each stage of ELT while still offering them a certain level of flexibility. Yet it avoids overwhelming students with too many alternatives to choose from. This approach also allows the instructor to match specific journal options with appropriate/corresponding course readings. The writing of a short story (option #6), for instance, might be coupled with readings on Fisher’s (1984) Narrative Paradigm, the performance of an original silent film scene (option #16) might be coupled with readings on nonverbal communication, and the writing of a reconciliatory letter (option #20) might be coupled with readings on conflict negotiation. Likewise, the Tweet (option #1), YouTube video (option #2) and podcast (option #3) might each be coordinated with readings on social media or virtual communication. The sculpture (option #11), photographs (option #12), comic strip (option #13), conceptual art/poster/diagram (option #14), and clothing/furniture

design (option #15) might be assigned alongside readings on visual communication, and so on.

In the end, each of these variations enable Engaged Journaling to build upon traditional approaches to class journaling while simultaneously avoiding many of journaling’s limitations: its focus on one mode of expression, the tendency for students to procrastinate until semester’s end, and the missed opportunity for students to learn from one another. In accordance with Kolb’s (1984, 2015) Experiential Learning Theory (ELT), Engaged Journaling also employs multiple learning styles through several modes of creative expression, and it allows opportunities for students to engage in each level of ELT’s four-stage learning cycle.

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Appendix
Journal Option #9: *What if...?*

Directions: In 1-2 pages, respond to the following hypothetical scenario by employing one major concept from the reading.

Unbeknownst to you, a close friend recently turned in one of your class papers as her/his own. The friend was caught by her/his professor who now assumes you conspired with your friend to help her/him cheat. The professor wants to meet with you in her office about possible expulsion from the university.

When Twitter Meets Advocacy: A Multicultural Undergraduate Research Project From a First-Year Seminar

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Two professors share how they combined Web 2.0, multicultural themes, and undergraduate research in a first-year seminar. The professors explain the “perfect storm” of a project in which undergraduate students collected and analyzed tweets from advocates for various multicultural causes to produce their first collegiate research project. Capitalizing on student interest in social networking, professors aimed to meet multiple student learning objectives and satisfy an overarching theme of multiculturalism for the first-year seminar at a university in the southwestern United States. Students analyzed Twitter handles for causes or individuals advocating for causes related to social, political, and humanitarian efforts. Using basic qualitative and quantitative approaches, students wrote undergraduate research papers and presented their findings about how their cause and advocates used Twitter. The article provides project and assessment rubrics, ideas for improvement, and tools for replication.

As we consider the new face of activism in a digital age and the impact of social media on college students, instructors of a first-year seminar course developed a project where students conducted research on the use of Twitter as a channel for advocacy. Capitalizing on student interest in their social media feeds, professors aimed to meet multiple student learning objectives and satisfy an overarching theme of multiculturalism for the college’s inaugural first-year seminar at a university in the southwestern United States. Social media, or social networking sites (SNS), provide a modern way to connect students to current issues related to advocacy and multiculturalism, as well as show students strategic uses of one medium. The undergraduate research component added learning outcomes tied to critical thinking, writing, and oral presentation skills.

Social networking sites encompass the web-based and mobile applications that connect, engage, and distribute user-generated content digitally in a multiway communication model (Boyd & Ellison, 2007; Davis, Deil-Amen, Rios-Aguilar, & Gonzales Canche, 2012). The most popular SNS among American adults who use the Internet include Facebook, LinkedIn, Pinterest, Instagram, and Twitter (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). In its most recent report, Pew Research Center estimated 23% of American adults who are online use Twitter (Duggan et al., 2015). This is an increase from the estimates in a 2013 study in which about 18% of online American adults used Twitter (Duggan & Smith, 2014), and Twitter estimates 288 million monthly active users, with 77% of accounts outside of the U.S. (About Twitter, n.d.).

The Nature of Twitter

Twitter, a micro-blogging site at the center of this project, is used for advertising, personal, and mass

communication. In 140 characters, anyone with a mobile device and Internet connectivity can microblog about topics ranging from individual musings, strategic messages for a company or organization, or news and information. With streaming, real-time content, Twitter provides viewers with the opportunity to examine multiple outlets and various perspectives on a single topic from anywhere. With or without a Twitter account, people can follow users’ messages or specific hashtags (labels used for searches and aggregation) on the free web. Users can follow a variety of other users, or Twitter handles, which include individuals, news agencies, governments, companies, nonprofit organizations, and causes. Users can reply to messages, retweet them to their own followers, and “favorite” them. Twitter’s multi-way communication makes it an ideal platform for spreading awareness and advocating for causes.

Twitter has moved beyond its capabilities as a sheer communication tool. It offers a democratized mass communication vehicle where anyone can be a producer and curator of content. Traditional gatekeepers at legacy media like newspapers and TV stations are not selecting the content to disseminate on their pages and networks. Everyday citizens become news agencies for their followers. They can live-tweet events as they are unfolding, sometimes before the trained legacy media professionals arrive. Twitter users offer other perspectives and eye witness reporting from areas of unrest or controlled media. Everyday citizens become public relations agents promoting and marketing wares, events, and ideas. And on Twitter, they can become modern-day activists. All that the would-be activist needed is a cause, mobile device, free Twitter account, and Internet access. “The Internet and digital technologies open the door for everyday citizens to rally support for an initiative, and in so doing create large networked communities of normal people with

shared beliefs” (Carew, 2014). In other words, the activist’s megaphone now reaches the masses.

Social Media and Advocacy

The Internet and, more specifically, social networking sites have widened the “civic space” (Nugroho, 2011). Social media sites have become rich forums for conversations about social change. Advocacy ranges from politics to social causes to human rights. Zhang (2014) points out that online activism differs from previous activism, citing no centralized leadership, large-scale demonstrations, or radical change. Instead, online activism “emphasizes collaboration, civic participation, and social and cultural change” (292).

In 2011, Alterman described social media’s presence in political changes within the Middle East. He noted that Twitter and other social media sources were often used as a supplement to traditional media (such as television). This pairing of new media with traditional outlets led to a change in the way viewers considered current events. Alterman described the role of social media, noting the following:

...[W]hile there has been considerable concentration on the role social media played in allowing people to receive content, analysts have not placed enough emphasis on the importance of social media’s enabling people to send content, transforming them from observers of activism to activists themselves with a greater stake as leaders, not just followers, of unfolding events (104).

Iran’s 2009 national election linked Twitter and activism on the international stage. CNN’s article, titled, “Tear Gas and Twitter: Iranians Take Their Protests Online,” talked about a new form of protest:

Iranian protesters have found a new outlet to mobilize and take action. The presidential election has proved how much opposition supporters can demand change without necessarily taking to the streets. Just give them a computer and an Internet connection and watch what they can do. (Nasr, 2009)

Gaffney (2010) questioned to what extent Twitter played in the “Twitter revolution.” He added, “by shedding light via the transmission of imagery and video, Twitter likely plays a more important role than some commentators have given it” (7).

Like political activism, advocacy for women’s rights also uses Twitter as a platform. Herman (2014) points to hashtags like #yestoallwomen for making Twitter an “empowering platform for women to speak out.” Any woman could share everyday experiences of sexism and

violence by using the hashtag to join the larger conversation. The hashtag #SolidarityIsForWhiteWoman spurred conversation about feminism and race:

I can’t say what will result from #SolidarityIsForWhiteWomen, but I do know that Twitter is changing everything. Now, people are forced to hear us and women of color no longer need the platform of white feminism because they have their own microphones. (Vasquez, 2013)

Hashtags on Twitter can illuminate issues within issues, as well as issues receiving little attention like those illustrated by Loza (2014): poverty (#EconomicViolence), racial and sexual stereotypes (#NotYourAsianSidekick), cultural invisibility of Latin@s (#SecretLivesofFeministas), Black sexism (#BlackPowerIsForBlackMen), media bias (#NotYourNarrative), the sexual exploitation of black girls (#FastTailedGirls), and the erasure of trans women (#GirlsLikeUs).

Twitter has power and reach. Cheong and Lee (2010) found a link between activism on Twitter and an Australian Earth Hour movement. They concluded that Twitter activity can be translated into action, and activism on the platform can influence people. Harlow (2012) found that a social movement on Facebook moved from the online realm to offline, and Facebook could foster political activism in Latin America.

It did translate into action in the cases of Whole Foods Market and the University of California. Kang (2012) researched a boycott of Whole Foods Market that trended on social media. A Facebook group and Twitter handle called “Boycott Whole Foods” became a national movement. Kang asserts that “social media also offer a space in which enclaves encounter opponents and subject their ideas to scrutiny” (564). Another example is that social media fueled a walkout at the University of California that resulted in a \$500 million funding restoration (Samuels, 2011).

The activism aspect of social media dovetailed nicely with first-year seminar learning objectives to explore multiculturalism, understand and analyze data, and deliver effective written and oral communication. Students at a semi-rural university in the Southwest could listen to content creators from across the globe, enabled to promote a cause with little necessary infrastructure. Students could also view conflicting or competing activists for multiple sides of an issue. Dunbar-Hester (2010) said, “Technologically oriented activism is but one of many strategies to bring about a more democratic media environment” (133).

Twitter in the Classroom

Twitter can be used to connect students with each other, professors, and content. Domizi (2013) studied

the use of Twitter in a weekly graduate course with results that said, “[S]tudents found Twitter to be useful for the sharing of information, both professionally and personally” (49). Carpenter and Krutka (2014) cataloged the different ways educators were using Twitter in the classroom, using a survey of 755 K-16 educators. Of respondents using Twitter for teaching and learning, four main functions emerged: 1) to extend student-student and student-teacher conversations, 2) to use Twitter for in-class activities, 3) to connect students to experts and those outside of the school, 4) and to teach how to use social media.

Marketing students in Rinaldo, Tapp, and Laverie’s (2011) two-semester study perceived benefits to using Twitter in their class. Researchers concluded that “introducing Twitter or any social media tool to students has the potential to engage students with the emerging technology, increase the interaction between professor and students and broaden access to information related to course material” (202).

In this particular project, Twitter was used as a way to connect students to content, namely that of multicultural activists, broadening their access to world issues. Twitter also provided a free and open source for research data that had to be collected and coded.

Undergraduate Student Research

Research, a core function of the university, benefits undergraduate students directly when they take an active role in the research process. The 1998 Boyer Commission recommended that universities provide research-based learning, and suggested that this begins during the first year (Boyer, 1998). This inquiry learning or inquiry-guided learning is a cornerstone at most universities, with numerous published studies of student and faculty perceptions about benefits and challenges (Craney et al., 2011; Hunter, Laursen, & Seymour, 2007; Lopatto, 2003; Tompkins, Rogers, & Cohen, 2009).

Student benefits include personal and professional growth (Craney et al., 2011), critical thinking, the gaining of knowledge, active engagement with their major or research area, better understanding of their future career field (Hunter et al., 2007; Pascarella & Terenzini, 2005), enhancement of professional or academics, understanding of the research process in a field, learning a topic in depth (Lopatto, 2003), and even links to continuing education beyond the undergraduate level (Hathaway, Nagda, & Gregerman, 2002; Russell, Hancock, & McCullough, 2007; Ward, Bauer, & Bennett, 2002). Another benefit is the deeper student-to-professor relationship as research mentor and mentee (Houser, Lemmons, & Cahill, 2013). Astin (1993) found that student-faculty interaction positively correlated with student intellectual and personal growth.

Challenges to incorporating undergraduate research into early college experiences include professor and student time and resources (Merkel, 2001). Professor/mentor time is a challenge because the research project needs shepherding, especially for students not accustomed to self-directed work (Billings, 2013; Tompkins et al., 2009). Assessment, faculty rewards for engaging students in undergraduate research, and reaching a larger number of students are other challenges (Merkel, 2001). Incorporating a research component in a one-hour first-year seminar has the added challenges of a condensed time frame and novice researchers who are acclimating to college. In this current project, Twitter was used because it could be tailored for a small research project that novice researchers might find approachable and interesting.

The open access of Twitter allows for researchers to view the messages as artifacts from the web with no needed institutional review or permissions. Twitter settings allow users to make messages public or private. Tweets, or the 140-character messages on the platform, give researchers small individual texts to analyze, as well as a larger manuscript when looking at a collection of tweets over time. For first-time researchers, analyzing tweets for a short time frame provided a manageable project following a traditional research formula that could be replicated and built upon as the student researcher gained experience.

First-Year Seminars and Multiculturalism

As retention and graduation numbers continue to drive higher education, resources have been increasingly placed in the *transition* process where students acclimate to college life. Since the mid-1970s, first-year student programs have become increasingly prevalent, though their inception can be traced back to 1911 at Reed College (Keup & Petschauer, 2011). The first-year seminar concept has been adopted by over half of the colleges and universities in the United States (Padgett & Keup, 2011). First-year seminars often have broad themes, consistent university goals, and common student learning objectives. They may range from one to three credit hours, be included in learning communities, and have connections with majors or a more general all-major approach. Despite their variability, the goal remains to promote student success and aid in student retention and acclimation to the university setting.

The project described in this paper was launched during the inaugural year of a college-wide first-year seminar. The mix of majors included criminal justice, communication studies, English and languages, social work, sociology, international studies, history, music, political science, theater, digital media, and fine arts. About 250 first-year students were enrolled in the

seminar within the liberal arts college and were divided into sections of about 30 students. Students with more than 30 hours or who were older than 26 were exempt from the one-hour course. Three professors coordinated syllabi and taught the sections in a similar manner. Professors decided on an overarching theme for the college's seminar: multiculturalism. With a diverse set of majors, multiculturalism was a thread woven into each class and thus could benefit any of the college's majors on personal and professional levels.

Engberg and Mayhew (2007) argue that to achieve diversity-related outcomes in first-year seminars, curricula should include multicultural and social justice emphases. Through a comparison with other courses, they determined that the "first year course is very successful in helping students understand group differences and developing their awareness of multiple perspectives on issues of culture and diversity" (253). Plainly stated, "the experience of first year students is enhanced by multiculturalism," and benefit students socially and cognitively (Feldman, 2005, ix). Pascarella, Edison, Nora, Hagedorn, and Terenzini (1996) found that participating in a cultural awareness workshop had significant positive effects on end-of-first-year openness to diversity and being challenged by different ideas, perspectives, and values. The authors suggest these kinds of workshops as a way institutions can "foster appreciation and acceptance of cultural and racial and value diversity" (189). The university highlighted in this paper has an office for diversity and inclusion, but the campus is comprised of predominantly white, rural or semi-rural, low and middle income students from neighboring communities or within the region and state. About 73% of students at the university are white/non-Hispanic, and a number of students commute from all directions in about a one-hour radius. Many have not traveled to a metropolitan area or experienced air travel to farther destinations. International representation on campus remains a small percentage. Given the potentially low exposure to multicultural issues in their communities and high schools, the professors saw a need to introduce students to inclusion and diversity concepts early in their collegiate experience.

The Twitter Project

The professors assigned to teaching a college-wide first-year seminar developed one project they hoped would fuse undergraduate research, multiculturalism, and social media. The project addressed the problem of squeezing multiple student learning outcomes into a mandatory 1-hour credit course that needed to appeal to the many majors in one college.

Students in a college-led first-year seminar class were assigned a beginning research project in order to

satisfy the course's student learning objectives to 1) evaluate evidence in analysis, interpretation or arguments; 2) synthesize varied components of information to form a rational conclusion; and 3) express ideas in written, visual, or oral forms to a range of diverse audiences in multiple settings.

This group project design involved both qualitative and quantitative research, in a basic form, along with the construction of a written product with a literature review, methods, analysis, and results. The professors started collecting a list of activists after being inspired by a presentation about how America Ferrera and Rosario Dawson used Twitter to mobilize the Latino/a vote during the 2012 presidential election (Carstarphen, 2013). During the project planning, professors tasked a graduate student with finding prominent activists and advocates using Twitter to promote their causes. Women's rights and equality, lesbian-gay-bisexual-transgender-queer (LGBTQ) causes, human rights, and Latino/a issues created the starting point. Activists in these areas would expose students to multicultural issues and broaden their understanding of particular groups and causes. Examples include singer Shakira (@shakira), actress America Ferrera (@AmericaFerrera), the NOH8 Campaign (@noh8campaign), Ellen DeGeneres (@theellenshow), Greenpeace (@Greenpeace), etc. Celebrities and sports stars vocal for causes and prominent organizations were included on this list. If a student wanted to add a Twitter handle to the list, he or she had to consult with the professor. See Appendix B for an entire list of Twitter handles available to students.

To prepare students, the project was mentioned in the syllabus and deadlines were expressed on course schedules issued the first day of class. An assignment sheet (see Appendix A for entire sheet) was distributed to students; the project was situated toward the end of the semester so students would have time for introductions to the library, its databases, academic journals, and members of their groups. Students selected a Twitter handle from the list to follow for one week. They captured tweets from an activist and analyzed them for themes, thus exposing themselves to other viewpoints. Students were placed into groups based on the activist feed they selected. For example, students who picked Twitter handles related to women's causes were grouped and those picking human rights activists were grouped. The following groups were formed: women's issues, LGBTQ issues, humanitarian issues, medical causes, domestic violence, equality, child welfare, and political issues.

In their groups, students wrote a collaborative research paper and presented their findings at a class meeting. The research process was a process. Some students were starting at square one; they had to learn how to access and use Twitter and to make sense of the

platform's language (ie. understanding the symbols and abbreviations). Next, students began to build a literature review. Each student was responsible for one peer-reviewed citation from an academic journal. One class period was a library database workshop led by campus librarians familiar with the project. Many students left that class session with the resources they needed to continue. In their groups, individual citations would come together to begin their background for the collective research paper.

After students collected activists' tweets (pasted into a word processing or spreadsheet document), they were to calculate the number of tweets for their activist, the number of messages that were re-tweets (RTs), the number that were advocacy-related, and the percentage of advocacy-related messages to non-advocacy-related messages. This constituted the quantitative portion of their research. For the qualitative portion, they were asked to analyze the tweets for emerging themes. They were prompted with the following: "What themes emerge from the tweets for the account you selected? You are looking for overall concepts, as well as exceptions. Then, as a group, see if larger themes emerge from looking at your group of Twitter accounts."

For their discussion section of the paper, students were asked to think about the bigger picture: "What do the findings mean? What interpretations can be drawn? What limitations are inherent in our research design (e.g., they only looked at one week of tweets)? How could the study expand in for further research?"

Professors disseminated an outline and barebones structure for the research paper to help students pull everything together in a written form. Some groups simply joined four or five individual mini-papers together to make one research paper. Others truly collaborated and wove their observations into one paper.

For the oral presentation, an academic conference style was adopted where teams had five minutes for presentations. Students were instructed to use at least one visual aid and were encouraged to focus on the results and conclusions part of their research. One class period was devoted to presentations. Outside guests like the dean and librarian who helped students with the background research attended on the day of the presentations.

Assessment Rubrics

Projects were assessed with a rubric (Appendix C) and counted for 20% of a student's overall grade for the first-year seminar course. The collective research paper and group presentation were equally weighted. To receive the full credit for the paper, the following criteria were met:

- the structure of the paper was clear (title page, introduction, background, methods, results, discussion/conclusion) and provided examples/support for statements;
- the minimum page count was five pages;
- the writing style (APA) fit paper's audience/purpose;
- the paper was free of spelling, punctuation, and grammatical errors;
- qualitative and quantitative research were evident;
- students used peer-reviewed journal articles (one per team member);
- the background explained the overall topic connecting the Twitter handles;
- methods adequately explained so another could replicate the research;
- the results section reported findings and did not include interpretation, and
- the discussion/conclusion showed a depth of thought and analysis.

To receive full credit on the oral presentation, all members of the active team had to take a role in the presentation, include one strong visual aid, clearly explain the results, speak confidently, and not exceed the five-minute time limit. Additionally, students were able to rate members of their teams, explaining everyone's role and giving feedback on their own contributions (Appendix D) for the paper and presentation. Students were asked what grade they believed they earned as individuals and overall as a team. Then they could report if other team members deserved a higher or lower score. Faculty used the feedback and rubric to assess student performance.

The project satisfied its intended student learning outcomes. Students evaluated evidence, synthesized information to form conclusions and expressed ideas in written, visual, and oral forms. The project experienced both positive and negative outcomes. After a qualitative review of students' written reflections about the project (approved IRB: 2012-012312-12004), researchers identified the chief positive outcome was students' increased familiarity with research processes. Students were introduced to initial ideas of qualitative and quantitative research practices. Additionally, they availed themselves of the library databases while learning about research articles and literature reviews. The project allowed an exploration of written and oral communication. Students appeared to grow in their knowledge of advocacy and enjoyed studying with social media. Negative outcomes also existed at the conclusion of this project. Some students noted that they did not want to work in teams in college because scheduling was a challenge, especially with groups that

experienced class absences. A few of the students had Twitter users who did not tweet during the selected week of analysis, which frustrated the students. If students are originally frustrated by research or team processes, they may not pursue them often or at all.

Ideas for Improvement

Tackling undergraduate research in a first-year seminar course is a large task, and the number of undergraduates participating should be considered. Using groups made the project more manageable for students and professors. Attrition in the first-year seminar created some problems with viable groups at the end of the semester. Some groups were saddled with members who had already decided not to return to school. Professors could assign groups based on students present and ask those who are absent to meet with the professor to secure a group assignment.

Vetting the list of Twitter advocates should be an ongoing process. After the first iteration, it became apparent that some so-called advocates did not provide rich content for students to study. In the second and third semesters teaching with the project, the Twitter list was edited to allow for more consistent advocacy posts. Expanding the tweet collection window from one week to two weeks would give more content for students to study. Some students only had a few tweets to study, and others had hundreds. Narrowing the list to Twitter accounts with a similar number of tweets per week would make the project more equitable. Additionally, in the subsequent semesters with the project, students were placed in more balanced groups. Those who were irregular tweeters were partnered with consistent advocates, and groups were directed in how to share the analysis. This seemed to lead to a better distribution of work and fostered collaboration among student groups.

As a professor, finding the perfect balance of appropriate scaffolding was hard. Samples and too-strict guidelines can dampen true discovery for the learner. Many students struggled with getting started, largely because they were overwhelmed and unsure of the process as first-time researchers. A scheduled trip to the library, where the students meet with librarians familiar with the project, helped ease some tension, but in the end, posting a “barebones” research article for the students helped clear some confusion. “Then a sample essay with instruction was posted and it all made sense to me,” a student wrote in a reflective writing assignment about the project. (IRB approval for use of student narratives on file with university.) The professors did not want to devote too much in-class time for group meetings, but some was necessary to help the groups connect, or at least trade contact information.

Mini-lessons that could be incorporated prior to the research stage include discussions about ethnocentrism

and media literacy. In reflective writings students were required to complete about the project, some students exhibited ethnocentrism. For example, students who followed accounts mentioning arranged marriages looked upon the practice with judgment. In addition, talking about media literacy skills, critical thinking, and evaluating messages would help students consider the message, its purpose, its delivery medium, and possibly its authenticity. Many students seemed to believe everything an advocate posted, and they may not have challenged the fact that the activists might have used hyperbole or other tactics to improve the chances of the message making an impact.

Conclusion

This paper looks at an undergraduate research project within one liberal and fine arts college’s first-year seminar course. In an effort to introduce first-year students to undergraduate research in an approachable manner, professors used Twitter, where students analyzed tweets for signs of advocacy. A myriad of student learning outcomes were addressed with the one Twitter research project. The fusion of undergraduate research with social networking and advocacy created an interesting intersection for first-year students, as well as best practices and lessons for their instructors. Future projects could require students to publicly share their findings via the Web, maybe through a blog or wiki. Expanded dissemination could help with project quality and student motivation. This project could be modeled for other first-year seminars or other courses by selecting a topic matter and finding the related Twitter handles to follow. First-year seminars for nursing students could follow nursing associations, health organizations, or prominent nurses from all over the globe. Future educators could follow the plethora of education groups and advocates, building their professional network while becoming part of the field. Twitter as an advocacy avenue offers opportunities for teaching and learning in all disciplines.

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Appendix A
Project Assignment Sheet

Intro Research Project - An Assignment Sheet
Twitter and Advocacy
COLFA FYS – Fall 2013

Students will participate in a collaborative research project with written and spoken components. Each student will explore one week of tweets by an activist in various areas of multiculturalism. A list of potential activists will be provided by your professor, or you may pitch to your professor a Twitter account you believe would qualify. The account must be approved by the professor.

Students will collate their data as a team to develop findings about their group of activists. Qualitative and quantitative research methods will be used and sources will be required. For example, each student must use and cite at least one peer-reviewed journal article from the library or the library's database. Students will present findings in group presentations to the class. Note: this project can be completed whether or not a student has a Twitter account. Twitter is NOT REQUIRED for use in this activity. To find the accounts listed below, type www.twitter.com/@thename

Limited class time will be devoted to group meetings. You will need to meet with your group outside of class in order to finish this project. This needs to truly be a collaboration, which means all members of the group should contribute. Resist the temptation to take over the entire project yourself, or sit back and let others make decisions for you.

Finished products

Research project write-up (worth 10 points of total course grade) - The group (5-6 in each assigned randomly by the professor) collectively and collaboratively write a five-page (12 pt. double spaced Times or Cambia) paper, with citations from the journal articles. This is a group writing project; your professor expects individual contributions from each group member. The following sections will need to be included: topic background (also called a literature review) with should include a little bit about each activist or organization, methods (like a recipe, tell us step by step what you did), results (what did you find in both qualitative and quantitative areas?), and discussion/conclusion (what does it mean? and what future research could be done in this area?). One paper will be submitted for each group.

TITLE PAGE

Go to <https://owl.english.purdue.edu/owl/section/2/10/> to see how to format a title page. All group members' names should be included.

BACKGROUND

Give a short introduction to your topic generally (women's rights, LGBTQ rights, etc.)

Explain which activists are covered in this paper and what they advocate for. Give a short message about how Twitter is being used as a platform for advocacy -- you will need to find this from a research resource like a peer-reviewed journal article.

METHODS

Tell (in sentence, paragraph form) the steps you took to conduct this research. Tell which week of tweets you pulled and how you handled re-tweets, mentions, quoted in, etc. Did you include them in your counts? This needs to be consistent for your group.

RESULTS

In your results section, simply report what you see. Resist the temptation to tell us what it might mean. Save those thoughts for the next section.

Qualitative section

What themes emerge from the tweets for the account you selected? You are looking for overall concepts, as well as exceptions. Then, as a group, see if larger themes emerge from looking at your group of Twitter accounts.

Quantitative section

This is the “numbers” part of the project. You will essentially fill in this chart for the Twitter account you have selected. You can include a similar table in your results section, and include all of the accounts your team reviewed.

How many total tweets posted for the week?	
How many tweets were RT (re-tweets)?	
How many tweets advocated for a cause?	
Figure the average no. of advocacy-related tweets for the week. (no. of advocacy tweets divided by total number of tweets...then multiply by 100 to obtain the percentage)	

DISCUSSION/CONCLUSION

What do the findings mean? What interpretations can be drawn? What limitations are inherent in our research design (ie. we only looked at one week of tweets;)? How could the study expand in for further research?

REFERENCES

Each group member should find one peer-reviewed journal. This article should help inform your introduction and background section. The minimum number of references is the same as the number of members in your group. List references at the end of the paper in a section called References. Use APA style.

<https://owl.english.purdue.edu/owl/section/2/10/>

Presentation (worth 10 points of total course grade) - All members of the group will orally present their research project. Visual aids are required. This could be screen shots, PowerPoint or handouts. Each group will have only 5 minutes to present to the rest of the class. This is a short time frame, so you will need to practice. Devote more of your presentation time to the findings and conclusions because that’s the reason for conducting the research.

For your deadlines, see your syllabus.

This Twitter research project is worth 20 points of the total course grade.

Assessment & What to Hand In

Research papers will be assessed on writing style, quality of research, demonstration of qualitative and quantitative reporting, and incorporating reasonable discussion and implications of your findings. You will hand in one hard copy of the paper with all group members’ names on the cover page. Also include all of your data tables where you tallied your research.

Suggested Student Timeline

1. Pull articles relating to multicultural topic
2. Grab tweets (can copy and paste into Excel)
3. Read articles
4. Write lit review/background
5. Code tweets
6. Write methods, results and discussion
7. Proof
8. Prepare for oral presentation (with visual aids)

Appendix B
List of Twitter Handles

Potential Twitter Activists

Name	Handle	Activism
Edgar Shoboy Sotelo (many tweets are in Spanish)	@elshoboy	
Paulie Perrette	@PauleyP	
Feed USA	@FEEDprojects	
Ashton Kutcher	@APLUSK	
Michael J. Fox	@RealMikeFox	
Nelson Mandela	@NelsonMandela	
Mark Horvath	@hardlynormal	
Trevor Neilson	@Trevor_Neilson	
Doug Ulman	@LiveStrongCEO	
Danny Glover	@mrdannyglover	
Ellen DeGeneres	@theellenshow	
Shakira	@shakira	
NOH8 Campaign	@noh8campaign	
Greenpeace	@GreenpeaceUSA	
Code Pink	@CodePink	
Marlee Matlin	@MarleeMatlin	
Adam Bouska	@bouska	
Kevin Healey	@kevin_healy	
Prison Reform Movement	@prisonreformmvt	
SAFER campus	@safercampus	
Lena Dunham	@LenaDunham	
Julianne Moore	@_julianne Moore	
America Ferrera	@AmericaFerrera	
Peace First	@peacefirstorg	
National Rifle Association of America	@NRA	
Prolife campaign	@prolifecampaign	
NARAL ProChoice	@naral	
Eva Longoria	@EvaLongoria	

Kristen Bell	@imkristenbell	
Arianna Huffington	@ariannahuff	
Drew Brees	@drewbrees	
Wyclef Jean	@wyclef	
Craig Newmark	@craignewmark	
Amanda Rose	@amanda	
Veronica De La Cruz	@VeronicaDLCruz	
Drew Olanoff	@drew	
Stephanie Rudat	@srudat	
Jenny McCarthy	@JennyMcCarthy	
Amnesty International	@AmnestyOnline	
Everyday Sexism	@EverydaySexism	
Children's Rights	@ChildrensRights	
50 Million Missing	@50millionmissin	
Breakthrough	@bell_bajao	
Break the Cycle	@breakthecycledv	
End Violence Against Women Coalition	@EVAWhd	
Equality Now	@equalitynow	
Holly Kearn	@hkearl	
Kathleen Milliken	@kmmilliken	
Maps 4 Aid	@maps4aid	
Men Can Stop Rape	@mencanstoprape	
Orchid Project	@orchidproject	
Somaly Mam	@Somalymam	
Neil Patrick Harris	@ActuallyNPH	
Cornel West	@CornelWest	
Alicia Keys	@aliciakeys	
Cory Booker	@CoryBooker	
Soledad O'Brien	@soledad_obrien	
Tavis Smiley	@tavissmiley	
Half the Sky	@Half	

Rosario Dawson	@rosariodawson	
United Nations Women	@UN_women	
Room to Read	@roomtoread	
National Association for the Advancement of Colored People	@NAACP	
Patricia Arquette	@PattyArquette	
Wendy Davis	@WendyDavisTexas	
LULAC	@LULAC	
National Multicultural Western Heritage Museum	@NMWHMUSEUM	
National Congress of American Indians	@NCAI1944	
UNESCO	@UNESCO	
Women Deliver	@WomenDeliver	
Third Wave	@3Wave	
Safe World for Women	@safeworld4women	
NOW	@NationalNOW	
AARP	@AARP	
National Council on Disability	@NatCounDis	
Vital Voices	@VitalVoices	
Traffick911	@Traffick911	
Lisa Ling	@LisaLing	

Want to continue this research?

If you have an interest in building upon this project, please let your professor know. This project has the potential for conference presentations nationally, statewide, and on our campus.

Questions?

Ask your professor in class, on the phone (number), or via email at (address).

Appendix C:
Assessment Rubric

LFA 100

Final Project Rubric - Paper

This paper is scored out of ten points. To see a breakdown of how points were assigned to your paper, please review the following rubric.

___/10 points	___ The structure of the paper is clear (title page, intro, background, methods, results, discussion/conclusion) and provides examples/support for statements. ___ Minimum page count of 5 pages is met. ___ Writing style (APA) fits paper's audience/purpose. ___ Is free of spelling, punctuation, and grammatical errors. ___ Qualitative and quantitative research evident. ___ Uses peer-reviewed journal articles (one per team member). ___ Background explains the overall topic connecting the Twitter handles. ___ Methods adequately explained so another could replicate the research. ___ Results section reports findings and does not include interpretation. ___ Discussion/conclusion shows a depth of thought and analysis.
+ or -	Team's input on individual's contribution to paper (<i>see group assessment page</i>)
	Grade

LFA 100

Final Project Rubric - Presentation

This presentation is scored out of ten points. To see a breakdown of how points were assigned to your presentation, please review the following rubric.

10 points	All members of the active team take a role in the presentation. The presentation includes at least one strong visual aid. The team's findings are clearly explained. Speakers are confident in their explanations. The presentation does not exceed 5 minutes.
9 points	All but one team member of the active team takes a role in the presentation. The presentation includes at least one visual aid. The team's findings are clearly explained. Overall speakers are confident in their explanations with only one weak link. The presentation does not exceed 5 minutes.
8 points	All but one team member of the active team takes a role in the presentation. The presentation includes at least one visual aid. The team's findings are explained, with some clarity. A few of the speakers may deliver weak presentations. The presentation does not exceed 5 minutes.
7 points or below	Half of the team members of the active team take a role in the presentation. The presentation includes at least one average visual aid. The team's findings are explained, with some clarity. A few of the speakers may deliver weak presentations. The presentation does exceed 5 minutes, or is too short to properly convey the information.

Appendix D
Group Evaluation Form

Twitter Research Project Evaluation
LFA 100 – Fall 2013

Your Name

What tasks did you handle during the project (paper and presentation)?

What grade would you assign to your individual efforts (A,B,C,D,F)? PAPER _____ PRESENTATION _____

What grade would you assign to your group's paper? _____

What grade would you assign to your group's presentation? _____

About my team

This will not be shared with your team members

Team member	Tasks performed? (list one or two)	Shared in the responsibilities of the project (pulled his/her weight)?	Was a positive influence on overall paper?	Was a positive influence on overall presentation?	Deserves same grade as other members of team?
<i>Sample</i>	<i>Wrote the introduction. Set up meetings.</i>	<i>No – missed meetings and did not contribute.</i>	<i>Yes – helped edit the entire paper.</i>	<i>Yes – helped practice. Lead group.</i>	<i>No – this person should receive a slightly lower grade</i>

Putting Structure to Flipped Classrooms Using Team-Based Learning

Krisztina V. Jakobsen and
Megan Knetemann
James Madison University

Current educational practices and cognitive-developmental theories emphasize the importance of active participation in the learning environment, and they suggest that the first, and arguably most important, step to creating a better learning environment is to make learning an active and reciprocal process. Flipped classrooms, in which students learn the primary course content outside of class, have gained recent popularity. Many institutions, especially medical and business schools, have established flipped classrooms and recorded the method's effectiveness. One key component to the flipped classroom is the absence of traditional lectures inside the classroom. Unfortunately, how to effectively structure the classroom experience in light of this absence is largely missing in the literature and creates a unique challenge for instructors who are unsure of how to spend class time. In this paper, we present Team-Based Learning (TBL) as one way to effectively structure a flipped classroom environment.

Traditionally, teachers are responsible for transmitting information to students while they absorb the material from lecture. Most fundamentally, flipped classrooms result in a critical paradigm shift in which the responsibility for learning the primary course content occurs outside of the classroom and lies with the student (Berrett, 2012; Bishop & Verleger, 2013; Fulton, 2012; Kim, Kim, Khera, & Getman, 2014; McDonald & Smith, 2013; Moffett, 2014). During class, the teacher serves as a guide who helps and leads students toward understanding course content, but students must think more deeply about course content and make connections by actively engaging with the material (Findlay-Thompson & Mombourquette, 2014; Missildine, Fountain, Summers, & Gosselin, 2013). This method of active processing is supported by the sociocultural theory of cognitive development (Hausfather, 1996; Hmelo-Silver, Duncan, & Chinn, 2007; Vygotsky, 1978; 1980; Yildirim, 2008;). Therefore, the responsibility of learning the primary course content shifts from the teacher to the student. In other words, there is a shift from the instructor being the sage on the stage to the guide on the side (King, 1993).

In flipped classrooms, teachers provide students with short pre-recorded video lectures, vodcasts, and podcasts to deliver primary course content outside of the classroom (Kim et al., 2014; Moffett, 2014; Smith & McDonald, 2013). These online resources allow students to learn the material at their own pace because students have the ability to slow down or speed up a lecture or podcast, and they can pause, rewind, and watch the video again (Kim et al., 2014; Smith & McDonald, 2013; Sweet, 2014). Although the use of technology is a focus in the literature, primary course content can be introduced to students through more traditional means, including a textbook or supplemental reading. Once students acquire the primary course content outside of the classroom, class time can be spent clarifying more advanced material

through application based group activities (Bishop & Verleger, 2013; Fulton, 2012; Hawks, 2014; Kim et al., 2014; McDonald & Smith, 2013). In-class activities can include class dialogue, pair discussions, and practice questions (McLaughlin et al., 2014). Rather than spending class time laying down the foundation, students are able to delve into a deeper understanding of the material.

While flipped classrooms outline a general paradigm shift in which what was traditionally done in the classroom (i.e., learning primary course content) now takes place outside of the classroom, the literature lacks clear guidelines for teachers on alternative in-class structures.

Effectiveness of Flipped Classrooms

While some studies have found increases in academic performance using flipped classrooms compared to traditional lectures (Flumerfelt & Green, 2013; Fulton, 2012; McLaughlin et al., 2014; Pierce, Fox, & Dunn, 2012; Talley & Scherer, 2013; Wilson, 2013), others have found no difference in academic performance, even though students perceived to have learned more in the flipped classroom (Findlay-Thompson & Mombourquette, 2014; Kirschner, Sweller, & Clark, 2006). Flipped classrooms seem to lead to additional benefits, including creating strong social ties between students and with their teachers, and overall, students are more positive towards the learning environment (Flumerfelt & Green, 2013). Students who participated in a flipped classroom were more willing to participate in class and to work together to gain a deeper understanding of the material (Strayer, 2012). In addition, flipped classrooms appear to increase class attendance (McLaughlin et al., 2014), increase perceived value of the flipped classroom (McLaughlin et al., 2014), and increase student cooperation and

student involvement (Flumerfelt & Green, 2013). Flipped classrooms also tend to hold student attention for longer spans; the average attention span in a lecture style class is ten minutes, whereas the interactive activities increased attention capacity in flipped classrooms (McLaughlin et al., 2014).

Guidelines for Structuring Flipped Classrooms

Student buy-in. One of the key factors in successfully flipping a classroom is to get students to buy into a method of teaching with which they may be unfamiliar. Oftentimes, students resent a format of teaching that requires them to put in any effort to their learning. There are several strategies that can help with student buy-in. Although students may not perceive it as valuable initially, presenting a flipped classroom as an evidence-based practice that results in higher quality learning is important (Moffett, 2014). Being transparent with the students from the beginning helps to build trust and helps students recognize that the instructor is using a flipped classroom to encourage learning, which may make them more receptive to the process. Balan, Clark, and Restall (2015) suggest having students participate in a sequence of activities to aid in their understanding of the requirements to be successful in a flipped classroom. Although it may take students several units to truly see the value of the flipped classroom, most students are willing to participate and, in the end, appreciate the flipped classroom (McLaughlin et al., 2014; Strayer, 2012).

Structure. While several studies have demonstrated students' positive attitudes toward flipped classrooms, in some cases, students were less satisfied with the flipped classroom compared to more traditional methods (Missildine et al., 2013; Strayer, 2012). Students in the lecture classroom felt like there was more structure, and students in the flipped classroom expressed concern that they never knew what to expect during class (Strayer, 2012). In order to alleviate this concern, researchers suggest setting up a pattern or structure to class time when employing a flipped classroom (Findlay-Thompson & Mombourquette, 2014; Strayer, 2012). Unfortunately, teachers may find it challenging to identify how to structure class time because much of the flipped classroom literature focuses on what to do outside of the classroom, without clear guidance on how to structure class time.

Accountability. A critical factor to consider when flipping a classroom is that students are expected to learn the primary course content outside of class and then be able to use that information to complete activities during the class period. One concern that teachers may have in this scenario is that students do not complete their work outside of the classroom and,

therefore, cannot engage with planned activities during class. There are several ways in which individual students can be held accountable for preparing for class, including requiring students to complete a homework assignment or pre-lecture/class quiz (e.g., Moravec, Williams, Aguilar-Roca, & O'Dowd, 2010; Narloch, Garbin, & Turnage, 2006).

Technology. Another detriment to the flipped classroom is the reliance on technology (Hmelo-Silver et al., 2007; Kirschner et al., 2006). It would be nearly impossible for students who do not have Internet access through electronic devices—such as a computer, tablet, or smart phone—to be successful in a flipped classroom (McDonald & Smith, 2013). Although most higher education campuses are wired, it would be difficult to implement flipped classrooms in areas where these resources are not easily accessible. Previous literature suggests that flipped classrooms can only be successful if they utilize technological advances, and video lectures are paramount to many of these designs (e.g., Kim et al., 2014). Although vodcasts and podcasts can be useful tools, they are not the only ways to transmit primary course content. We argue that it is just as effective to use traditional resources, such as reading the textbook, as it is to access the information online. An advantage to maintaining traditional resources is that flipped classrooms can be utilized in diverse settings where Internet access in the home might be limited.

Structures for Flipped Classrooms

The idea of the flipped classroom is not new, and it is similar to methods described by others (Crouch & Mazur, 2001; Lage, Platt, & Treglia, 2000; Mazur, 2009; Walvoord & Anderson, 2011), including interteaching (Boyce & Hineline, 2002), problem-based learning (PBL; Kilroy, 2004), process oriented guided inquiry learning (POGIL; Pierce et al., 2012), and inverted classrooms (Lage et al., 2000), in which students learn the primary course content outside of class and actively engage with the material during class. Each of these methods has been studied empirically and increases student academic performance (Bishop & Verleger, 2013; Crouch & Mazur, 2001; Lage et al., 2000; Pierce et al., 2012; Saville, Zinn, Neef, Van Norman, & Ferreri, 2006).

Team-based learning is also a successful way to structure a flipped classroom (Moffett, 2014). Team-Based Learning (TBL; Michaelsen, Knight, & Fink, 2004) is a method in which students learn the primary course content outside of class and spend class time working in teams to apply that content. The teacher guides classroom activities and discussions and clarifies any difficult material through the social learning principles of guided participation and scaffolding, but he or she spends little time teaching in the conventional sense of the word (Hausfather, 1996;

Vygotsky, 1978; 1980). TBL has been used across disciplines, including criminal justice (e.g., Tucker & Brewster, 2015), psychology (e.g., Jakobsen, McIlreavy, & Marrs, 2014), sociology (e.g., Hunter & Robinson, 2012), literature and English (e.g., Harde & Bugeja, 2012; Robertson & Reimers, 2012), business (e.g., Michaelsen, Watson, & Black, 1989), biology (e.g., Carmichael, 2009), nursing (e.g., Clark, Nguyen, Bray, & Levine, 2008), and other medical fields (e.g., Chung, Rhee, Baik, & A, 2009; Hunt, Haidet, Coverdale, & Richards, 2003; Zgheib, Simaan, & Sabra, 2010). Additionally, TBL has been used not only in higher education, but also in middle (Kubista-Hovis, 2012; Wanzek et al., 2015) and high schools (Kent, Wanzek, Swanson, & Vaughn, 2015; Wanzek, Kent, Vaughn, Swanson, Roberts, & Haynes, 2014).

Introduction to Team-Based Learning

The methodology of TBL makes it an exemplary structure for a flipped classroom. Most generally, TBL includes the delivery of primary course content outside of the classroom, allowing for class time to be used to apply course content through the use of properly structured permanent teams, ensured readiness, application exercises, and accountability for learning through peer evaluations (Michaelsen et al., 2004).

Traditionally, TBL is designed to cover four to seven units (Michaelsen et al., 2004) during the course of the semester; however, more units may be included if necessary. The key in determining the number of units for a particular class is dependent on the class and up to the discretion of the instructor. For example, each chapter may be an individual unit, which results in 10–12 units for the semester (e.g., Jakobsen et al., 2014; Mahler, 2012). One way to determine how many units to include is to use backward design to develop the course. Backward design starts with identifying what you want students to be able to *do*, then designing the course to meet those goals (e.g., Wiggins & McTighe, 2001). Using backward design ensures that the TBL process results in students being able to *use* the course concepts. Each unit is structured in the same way, alleviating students' uneasiness about expectations for the course (Strayer, 2012).

Teams

The first critical piece to successfully implementing TBL is to create permanent student teams of five to seven members (Michaelsen et al., 2004). Teams should be heterogeneous based on characteristics that are important for the particular class. Some general factors to consider when creating teams may include whether students in the course are required to take the course or whether it is an elective, as well as whether the students are majors or non-majors, but

other factors more specific to the course may be important as well. For example, in a statistics class, the level of students' prior statistical knowledge, performance in previous math and/or statistics classes, and their anxiety for statistics may be factors to consider. Instructors should be transparent about the way they create teams in order to start building trust with students about the TBL process.

Students may resist the *teamwork* initially due to previous experiences with *group* work. Students' previous *group* work experience may have included difficulty in finding a time to meet, the division and completion of the work, and some students' lack of contribution to the task at hand. Students are often relieved when they find out that all teamwork takes place in class. Clearly explaining the structure of the class to students early can help with student buy-in. Additionally, helping students understand that that structure of the course requires students to be prepared for class (i.e., there is accountability for being prepared) helps ease fears about potential social loafers.

Readiness Assurance Process

The Readiness Assurance Process (RAP) holds students accountable for learning the primary content for the course (Michaelsen et al., 2004). Students complete part of the RAP outside of class by individually learning the primary course content through carefully designed preparation/assignments, while other parts of the RAP are completed inside the classroom individually and through teamwork. Each RAP takes about 50–75 minutes to complete.

Outside the Classroom. For each unit, students complete preparatory work outside of the classroom. The preparatory work need not be technology reliant, as in traditional flipped classrooms, but can include readings and guided questions. Scaffolding students' learning outside of the classroom is critical for creating clear expectations with regard to how to prepare for the class activities. Reading/preparatory guides may be particularly useful in guiding students' learning of the primary course content: students may not know what is important from the readings and may not be able to integrate the readings for usable knowledge without guidance. Guides should be based on the learning objectives for each unit and include questions at multiple levels of Bloom's taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956; Krathwohl, 2002) to ensure that students know the basics of the core concepts (e.g., remembering, understanding) and that they think about the content at a deeper level (e.g., applying, analyzing; evaluating; creating; Krathwohl, 2002). The structure of the preparatory work (e.g., readings, watching lecture/videos, completing reading guides) is consistent for each unit, providing clear

expectations for what students need to complete before coming to class.

Inside the Classroom. The RAP process continues inside the classroom. Although teachers clearly outline their expectations for what students should know when they come to class through the preparatory work, they need to ensure that students are indeed prepared for class. For each TBL unit, students first take an individual readiness assurance test (iRAT), which is a short multiple-choice quiz. The questions on the quiz should test students' knowledge of the primary content and should include questions at several levels of Bloom's taxonomy (in line with the reading/preparatory guides and learning objectives provided). The iRAT holds each student accountable for learning the material and decreases the likelihood of social loafing (Michaelsen et al, 2004). Once students have completed the iRAT, they complete a team readiness assurance test (tRAT), which is the same multiple-choice quiz they completed individually. Because the RAT includes questions at all levels of Bloom's taxonomy, questions at higher levels of Bloom's taxonomy should generate discussion among teammates during the tRAT. One of the key features of the tRAT is that teams receive immediate feedback on their performance. There are multiple ways to provide immediate feedback on the tRAT, even in large classes. One of the simplest ways is to use an Immediate Feedback Assessment Technique (IF-AT) scratch-off card (<http://www.epsteineducation.com/home/about/>).

For any questions that the team misses on the tRAT, they can generate a written appeal using evidence from their preparatory work, including the textbook, videos, and guides. This process allows students to revisit the preparatory work and engage with the material again. In the event that students find that they in fact have a valid argument for why their answer was correct on the tRAT, they use evidence from their preparatory work to write an appeal. In the event that students find that they misunderstood the information, they now should have a better understanding or can ask for further clarification. The last step in the RAP involves a facilitated discussion led by the teacher, during which time students ask questions about concepts that are still unclear (Gullo, Ha, & Cook, 2015). At the end of the RAP, students should be sufficiently prepared to successfully complete application exercises. The RAP in TBL provides a structure with clear expectations and accountability for student assessments.

Application Exercises

Following the RAP, there are several (two to four) class periods devoted to application exercises, all of which take place during class. The content of the application

exercises should be driven by the goals for each unit, therefore reinforcing students' understanding of the primary course content while engaging them in higher levels of thinking. Depending on the content of the course, teams may be presented with application exercises that have one or more problems per class period.

Application exercises should be designed using the 4Ss: significant problem, same problem, specific choice, and simultaneous reporting (Sibley, 2012). Each of the 4Ss is critical in and of itself, but also in conjunction with the other Ss. *Significant problem* refers to students working on a problem that is relevant for them and challenges the team to work together. If the problem is not relevant to the course content and objectives, students will be less likely to engage with it. If the problem is too simple, so that one student complete it on his or her own, there is no need for the team to work together, which may lead to social loafing.

Working on the *same problem(s)* is critical because it facilitates a successful classroom discussion in which all teams (and students!) are engaged. To guide the team and classroom discussion in a manageable way, teams should be asked to make a *specific choice*, which allows each team to present their answer *simultaneously*. Problems may be presented in numerous ways that allow teams to make a specific choice (Sibley, 2012). Here we outline some of the more common ones. Problems may be open-ended in the sense that students need to identify a specific one-word answer. For example, teams may be asked to summarize Vygotsky's theory of cognitive development using only one word. During the simultaneous reporting, each team holds up a small dry-erase board on which they have written their word. During the discussion, teams provide rationales for choosing their word, and through interteam discussions, several features of the theory are discussed.

More commonly, problems are written using multiple-choice answers. For multiple-choice problems that have a correct answer, the problem must be *significant* in that it requires all members of the team to work together to come to a decision. For example, teams may be asked to analyze which of three method sections (Method Section A, Method Section B, or Method Section C) is not written according to APA style and then simultaneously report their answer by holding up cards that have letters corresponding to each method section. This activity requires students to know the features of APA style method sections and to identify features that are correct as well as incorrect when making their decision.

Multiple-choice problems can also be written in a way that all answer choices are correct, but teams need to come to a consensus and rationalize their decision. For example, teams may be asked to first identify how children contribute to their own language development

and also to identify ways in which adults contribute to children's language development; proper language development requires the contributions of both. Next, teams decide whether children's contributions or adults' contributions are more likely to lead to children's language development. Each team may report their answers simultaneously using clickers.

Simultaneous reporting clearly identifies the decision of each team and commits them to their decision. Regardless of the format of the specific choice (open-ended, multiple-choice with correct answer, multiple-choice with no correct answer), teams' discussions of their rationale for making a specific choice should result in a rich inter-team discussion. Facilitating inter-team discussion is a critical step following the application exercises. Some tips for successful facilitation include deciding how to facilitate the discussion ahead of time, preparing follow-up questions, ensuring there is time for discussion, and providing closure for students following the discussion (Gullo et al., 2015).

Student Buy-In of TBL

Getting students to buy in to a flipped classroom may be challenging. Much like any teaching method with which students are not familiar, teachers should be transparent with regard to their use of TBL. Teachers should spend time explaining the structure of TBL, including the purpose of each component of TBL and the rationale behind the flow of TBL (e.g., why the RAP comes before the application exercises). For examples, teachers may use the syllabus as a practice TBL unit in which students have to do preparatory work (e.g., read the syllabus outside of class) then complete the RAP and application exercises using the content presented in the syllabus.

Structure in TBL

The flipped classroom literature is lacking in terms of outlining what teachers should be doing inside the classroom. Additionally, students in flipped classrooms express concern that they do not know what to expect during class (Strayer, 2012). TBL alleviates the concern over lack of structure in the classroom because each unit has the same sequence: students expect to complete the RAP and then application exercises. Additionally, the structure of the RAP and application exercises is consistent across units.

Accountability in TBL

Students need to be accountable for both their individual and team learning (Michaelsen et al., 2004). TBL grades are usually comprised of individual

performance grades, team performance grades, and peer evaluations. The main components of individual performance grades are the iRATs, which ensure that students come prepared to class ready to contribute to their teams and are held accountable for this preparation. Students' individual performance grades may also include exams, papers, homework, and projects. The team performance grade is primarily comprised of the tRATs and peer evaluations, which are used to assess students' contributions to the team. Using formative peer evaluations early in the semester allows students a chance to adjust their approach to team contributions before the summative peer evaluations are used as part of their final grades (e.g., Lane, 2012). Additionally, some instructors also grade application exercises (either for correctness or completion) and include team projects that may also contribute to the team performance grade.

Technology in TBL

Traditional flipped classrooms are highly reliant on technology outside of the classroom (Kim et al., 2014; Moffet, 2014). Although the use of technology has advantages, including allowing students to access course materials from home multiple times (Smith & McDonald, 2013), traditional resources (i.e., textbooks) are also effective ways for students to access course content. TBL is a flipped classroom structure that does not limit the delivery of primary course content outside of class to video or audio lectures.

Conclusions

TBL can be a resource for instructors who are interested in implementing the paradigm shift associated with flipped classrooms. TBL addresses the guidelines necessary for a successful flipped classroom. As with any teaching method with which students may not be familiar, teachers must get students to buy in to the method by being transparent about the method, including explaining the structure, how it works, why the teacher has adopted it, and how students will benefit from it. Spending time during the first class periods to explain TBL and demonstrate it with low-stakes assignments (e.g., doing the RAP process and application exercises based on the syllabus) allows students to experience the process and ask questions before diving into the course content.

Previous research shows that students may have negative perceptions about flipped classrooms when there is no set structure (Missildine et al., 2013; Strayer, 2012). TBL provides a structure for students inside and outside the classroom, clearly outlining what students can expect to be doing for each unit (i.e., preparatory work before coming to class, and the RAP process and

application exercises with a specific structure during class). Additionally, the intentional structure of TBL holds students accountable. The RAP holds students accountable to their teammates to learn the core content, while the peer evaluations help ensure that students are contributing to their teams. While traditional flipped classrooms rely heavily on technology (e.g., Hmelo-Silver et al., 2007), teachers can continue to use traditional resources (e.g., textbook, printed articles) in addition to online resources (e.g., prerecorded lectures, videos) to deliver primary course content to students.

Implementing TBL is time consuming and effortful initially. There are several ways to introduce TBL into the classroom. One option is to jump in with both feet and flip an entire course. Another option is to introduce TBL into an already existing class by implementing only one piece at a time. For example, one may consider introducing iRATs/tRATs during one semester or gradually building application activities over time.

Although implementing TBL may seem daunting, TBL is an effective way to structure a flipped classroom to promote positive student outcomes. Compared to traditional classroom structures, TBL increases student academic achievement (e.g., grades on exams and in classes; e.g., Carmichael, 2009; Levine et al., 2004; Vasan, DeFouw, & Holland, 2008; Zingone et al., 2010), results in higher attendance (e.g., Haberyan, 2007; Jakobsen et al., 2014), and seems to benefit academically at-risk students (e.g., Koles, Nelson, Stolfi, Parmelee, & DeStephen, 2005; Nieder, Parmelee, Stolfi, & Hudes, 2005). In addition, students have positive perceptions of TBL (e.g., Abdelkhalek, Hussein, Gibbs, & Hamdy, 2010; Levine et al., 2004; Tucker & Brewster, 2015; Vasan, DeFouw, & Compton, 2009).

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Emerging Team Leader Dynamics in Contingent Situations: A Doctoral-Level Simulation

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The literature on how a team leader emerges during the initial stages of a team formation presents a divergent landscape of possibilities. Most of the approaches focus on attributes, personality types, the influence of social tendencies, or relational capabilities. Yet these different theories and models suggest that many questions remain on this topic. The purpose of this paper is to illustrate the value of a simulation as an experiential basis for a classroom discussion on emerging team leader dynamics. Simulations have proven valuable in business education by providing an engaging student-centered environment that bring together theoretical learning and real life situations. This paper describes the outcomes of a manufacturing simulation among doctoral students intended to stimulate a discussion on emerging leadership dynamics at an early stage of formation. The simulation provided a practitioner's viewpoint to some of the challenges of leader emergence, served as classroom device for a discussion on leader-team dynamics, and acted as a source of research topics.

The inclusion of simulations in the classroom—if properly designed and adapted to the course content—have demonstrated to be a valuable learning tool across business courses and disciplines. Here the literature shows that simulations in the business classroom have proven invaluable for capstone courses (Walter, Coalter, & Rasheed, 1997) in appreciating the complexities of international business (Klein & Fleck, 2000), in providing experiences for practicing corporate globalization strategies (Doyle & Brown, 2000), in testing responses to business ethics situations (LeClair, Ferrell, Montuori, & Willems, 1999), and in enhancing business communication skills (Saunders, 1997). Simulations can also provide basic entrepreneurial experiences (Neck & Greene, 2011), serve as a test of management abilities (Adobor, & Daneshfar, 2006), and also serve as a basis for leadership skills training (Raybourn, Deagle, Mendini, & Heneghan, 2005), to mention a few. In effect, an extensive search of the literature shows there is a long history demonstrating the value of simulations in the business classroom (Chin, Dukes, & Gamson, 2009).

Among the recognized benefits of leadership simulations as an educational technique are their ability to engage students more deeply into course concepts by means of a learner-centered environment (Knobloch, 2005), the opportunity they provide to associate theoretical learning with real life situations (Adobor & Daneshfar, 2006), and the use they have as a tool to enhance cognitive value of theoretical models (Anderson & Lawton, 2009). Further benefits of simulations include the ability of testing and assessing learning outcomes (Thomas, et al., 2004). Yet despite these benefits, the literature also cautions that when using simulations, a clear link to course content and learning objectives should be established (Wedig, 2010). Otherwise, there is a risk that either the lure of latest technologies or the excitement of a simulation

could overcome or detract from attaining educational outcomes. The literature also cautions simulation designers and users about the dangers of biases in simulation development (Goosen, Jensen, & Wells, 2001) and warns about the typical high costs involved in purchasing simulations (Glazier, 2011).

The pedagogical value of using simulations in the classroom is also well documented in the literature. Compared to traditional approaches such as the use of textbooks and case studies, students view simulations as a more effective learning tool (Farrell, 2005). As a pedagogical tool, simulations encourage creative thinking and constructive learning (McMahon & Miller, 2013). Correctly designed, simulations and games are considered effective pedagogical techniques when dealing with complex and controversial topics (McDaniel & Telep, 2009) or as a showground for refining skills (Pettine, Cojanu, & Walters, 2011). When applied to capstone courses, simulations offer an integrative perspective of students' acquired knowledge (Stephen, Parente, & Brown, 2002). Most notably, simulation-based pedagogies increase student-to-instructor engagement (Auman, 2011), as well as student-to-student interactions (Cynthia & Kafai, 2008). Basically, there is sufficient evidence in the literature to consider the use of simulations in the classroom as a powerful, versatile, and effective pedagogical approach (Ellington, Fowlie, & Gordon, 2013).

Regarding the value of simulations to develop leadership skills, the literature shows abundant research across many disciplines. Leadership simulations are plentiful in the fields of education (Aldrich, 2009; Gorton, Alston, & Snowden, 2006; Halverson, 2005; Vogel, et al., 2006), in the military setting (Raybourn, et al., 2005; Shaffer, Halverson, Squire, & Gee, 2005; Smith, 2010), and in healthcare (Cant & Cooper, 2010; Kyrkjebø, Brattebø, & Smith-Strøm, 2006; McGaghie, Issenberg, Petrusa, & Scalese, 2010). Within the

business disciplines there are simulations for project leadership (Lustig, 1996), investment leadership (Richard, Holton, Elwood, & Katsioloudes, 2014), leadership styles (Jacobsen & House, 2001), leadership motivation within the team setting (Solow & Leenawong, 2003) and in the leveraging of technology to develop leadership capacity (Antes & Schuelke, 2011). Simulations associated with leadership models include transformational leadership (Dvir, Eden Avolio, & Shamir, 2002), collaborative leadership models (Dentico, 1999), leadership and emotional intelligence (George, 2000), ethical leadership (Allen, 2008), creative leadership (Leijnen & Gabora, 2010) and crisis leadership (Baran & Adelman, 2010; Hunsaker, 2007). There has also been a recent interest in studying the dynamics of leadership in the virtual environment (Gurley & Wilson, 2011; Hambley, O'Neill, & Kline, 2007). Again, the value of using simulations for leadership development in business—as well as in other disciplines—is well documented in the literature.

Despite the significant amount of leadership simulations available in the market, it was quite evident that simulations directed at providing an experiential basis for emerging team leadership in early team formation was lacking. In other words, simulations offering experiential insights into the process by which a leaderless team in the preliminary stages of formation assess and recognize the exercise of a member's influence in organizing the team efforts towards the completion of a goal were difficult to locate. This potential gap in the literature was sufficiently acute to prompt an interest in designing and testing a simulation dedicated to this objective.

On the specific topic of emerging leader dynamics in teams, the literature tends to lean quite heavily on attributes that guide the selection process. For example, Smith and Foti (1998) observed that dominance, intelligence, and general self-efficacy are major factors, while Kickul & Neuman (2000) demonstrated that extroversion, openness to experience, and cognitive ability were predictive of emergent leadership behaviors. In similar fashion, Norton, Ueltschy, Murfield, and Baucus (2014) argue that competence, fluid intelligence, willingness to serve, credibility, and goal attainment are the most prevalent characteristics that affect the emergence process. Other research—beyond just listing attributes—suggests emerging leadership is centered upon personality tendencies (Brunell, et al., 2008). A meta-analysis of gender and emerging leader dynamics shows that social role tendencies are a factor in deciding for a team leader (Eagly & Karau, 1991). Zhang, Waldman, and Wang (2012) hypothesize that the team member capable of envisioning and communicating a vision of how to accomplish the task tends to emerge as the leader, while Bergman, Small, Bergman, and Bowling (2014) noted that teams expected a social-oriented leadership in the early stages of a project, with a shift towards task orientation

effectiveness further along a project. In another study, Markulis, Jassawalla, & Sashittal (2006) found that emerging leaders are less effective than team leaders who are designated or are rotated to accommodate for different types of team dynamics. Yet there is also evidence that teams in which leaders emerged outperformed those without emergent leaders (DeSouza & Klein, 1995). Surprisingly, communications skills alone showed to be insufficient as a factor in selecting the emerging leader (Riggio, Riggio, Salinas, & Cole, 2003). In essence, research characterizing the dynamics of emerging team leadership to date focuses on attributes, personality types, the influence of social tendencies, and relational capabilities. Yet despite these approaches and models, many questions remain on this topic (Bligh, Pearce, & Kohles, 2006).

The purpose of this paper is to illustrate the value of a simulation in providing an experiential environment for a team development and leadership course at doctorate level. The emphasis of the simulation was to provide a classroom situation for the emergence of a leadership role that would be analyzed against the various models in the literature, serve as classroom device for a discussion on leader-team dynamics, and act as a source of research topics.

Methodology

The doctoral-level course selected for this study was on Team Development and Leadership, in which the objectives focused on a variety of concepts and practices associated with developing and leading an effective team. Different approaches to organizing, motivating, and achieving high performance are addressed, along with barriers to effective team efforts. Students identified current challenges and issues confronting leadership and applied positive team management strategies in a range of organizational settings. Of relevance to the course and this study were the dynamics associated with the emergence of the leadership function in an impromptu team.

The classroom simulation consisted of designing and implementing a production line capable of manufacturing at least 200 units per hour. The simulation involved seven doctoral students, four males and three females, most of whom with more than half of the required coursework. The objective of the simulation was to analyze the dynamics by which the leader emerged and performed in a team setting. Materials and tools for the simulation were provided with no instructions other than the need to produce the highest possible output with minimal number of defects. An instruction sheet listed the final specifications and expected quality attributes for each unit produced. The students were allowed fifteen minutes to organize for a five minute pilot run, then a fifteen minute review of the pilot run results with an opportunity to suggest process improvements. The pilot run produced 10 units in five minutes, but with four

defective units. After deciding on improvements, the students completed a five minute production run with the instructor performing the quality inspection of each final unit produced. For the formal run, the students produced ten units with only one defective. The segments of the production run were videotaped in time lapse mode as a way to document the interactions and facilitate the analysis and discussion of the simulation results.

The post-production discussion was quite animated and was directed at how the leader had emerged and performed. None of the students had manufacturing experience, but one of the students with military experience took the initiative to structure the production line, assign responsibilities, and provide real-time feedback on performance. The class was asked why they followed this leader's instructions since he was not appointed by agreement within the team. Some of the answers were, "He gave us a clear coherent picture of what to do..." Another student said, "He took the initiative and had energy in doing so..." A third student observed, "We all had ideas on how to design the production line, but he managed to keep us on task..." Overall, their observations were summarized thusly: the leader (a) takes initiatives that are credible and convincing to all, (b) recognizes individual contributions forms and sustains unity of efforts, and (c) constructively directs and adapts.

Once students had presented their observations, the students were asked to search the scholarly literature for models of how leaders emerge in teams. Once the search was conducted, the discussion of the simulation experience was framed around the discoveries from the literature.

Two articles dominated the post-simulation discussion. An article by Norton and colleagues (2014) suggests that perceptions of competence, fluid intelligence, willingness to serve, credibility, and goal attainment form the basis for the emergence of a team leader. In this case the doctoral students were in agreement with the authors but noted the difficulties of listing attributes for team leader emergence: specifically, the list may not be exhaustive. Although the students agreed that some of these attributes were deciding factors, not all of the attributes were obvious in the emergence of the simulation leader. Other factors, such as the ability to work and communicate a unanimously agreeable solution and being able to relate to team member contributions were more significant yet absent from this model.

The second article came from Berson, Dan, and Yammarino (2006). In this study the authors posit that relational dynamics, particularly by means of attachment styles, represent a significant consideration in the emergence of a team leader under contingent conditions. Here the student observed that relational dynamics were crucial to the emergence of the team leader in the simulation. The discussion revealed that

although each individual had a mental representation of how to design the production line, factors such as experiences, competencies, and knowledge of leadership models did not emerge in the early stages until an open, albeit unstructured, dialogue was initiated. Rather than a formal selection process, the leader in this case was a product of an unstructured dialogue. Ultimately, the doctoral students agreed that proficiency in relational dynamics—more than competency, experience, and desire to complete the objective—was a significant factor in setting the stage for the emergence of the team leader. The students noted that without an open initial dialogue, they suspect that even a member with exceptional attributes would not have emerged as leader. Interestingly enough, "professional mentoring" is the dissertation topic of the student that emerged as the team leader, and relational proficiency, as well as attachment styles, are key elements of successful mentoring (Gormley, 2008; Ragins & Verbos, 2007). The simulation offered substantial credibility to the Berson and colleagues (2006) argument that relational dynamics and attachment styles—as a model—played a key role in the team leader emergence.

Discussion and Suggestions

The value of this simulation was that it provided an experiential environment as a primer for a discussion on the emergence of a team leader role under impromptu conditions among highly educated students. The students' main observations of how a leader emerges were summarized as the following: the leader a) takes initiatives that are credible and convincing to all, b) recognizes individual contributions forms and able to sustain unity of effort, and c) constructively directs and adapts as the team evolves. These experiences were then compared and contrasted against various models of leadership emergence from the literature. Essentially, the simulation provided a practitioners view to some of the challenges of leader emergence, served as common ground for discussion of leader-team dynamics, and acted as a lens to identify further areas of research.

The manufacturing simulation and ensuing discussion on factors that led to an emergent leader brought the topic of *relational dynamics* to the forefront of research possibilities. Doctoral students noted that a more comprehensive understanding of relational dynamics, although more readily available in the psychology and social sciences disciplines, were rarely addressed in any of their courses to date. Only a few students had been previously exposed to discussing a specific relational model (Rojas, 2015) or to a wider understanding of relational typologies (Clydesdale, 2009; Weymes, 2002). These students noted that the leadership literature is clear on the relational dynamics

in the cases of transactional and transformational leadership modeling, but questioned if there were other forms of relational modes and the effects of these modes upon leadership dynamics. Without further research it was not clear if the scarcity of relational typology modeling within the leadership discipline was the consequence of assumptions, a subtle reference for the reader to reference this topic in other social disciplines, or as an unintended omission. Curiously enough, the interpersonal dynamics displayed during the simulation correlates quite well with the relational leadership model. In this model, leadership is socially constructed (Uhl-Bien, 2006) and nurtured by means of relational dialogue (Cunliffe & Eriksen, 2011).

Certainly a simulation with only seven doctoral students is insufficient as a platform to derive conclusions comparable to a fully designed research project. Nevertheless, the classroom simulation was effective in facilitating the opportunity to associate theoretical learning with real life situations and in analyzing the dynamics by which the leader emerged and performed in a contingent team setting. More importantly, the simulation was instrumental in exposing these doctoral students to the area of research that characterizes the dynamics of emerging team leadership. In the discussion and by means of the literature, it became evident that many questions remain on this topic (Bligh et al., 2006). Yet despite the limited scope of the simulation, the experience did validate many of the benefits of leadership simulations and especially confirmed the value of adding meaningful simulations to the doctorate level curriculum as a vehicle to stimulate scholarly discussions and discover needed areas of further research.

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