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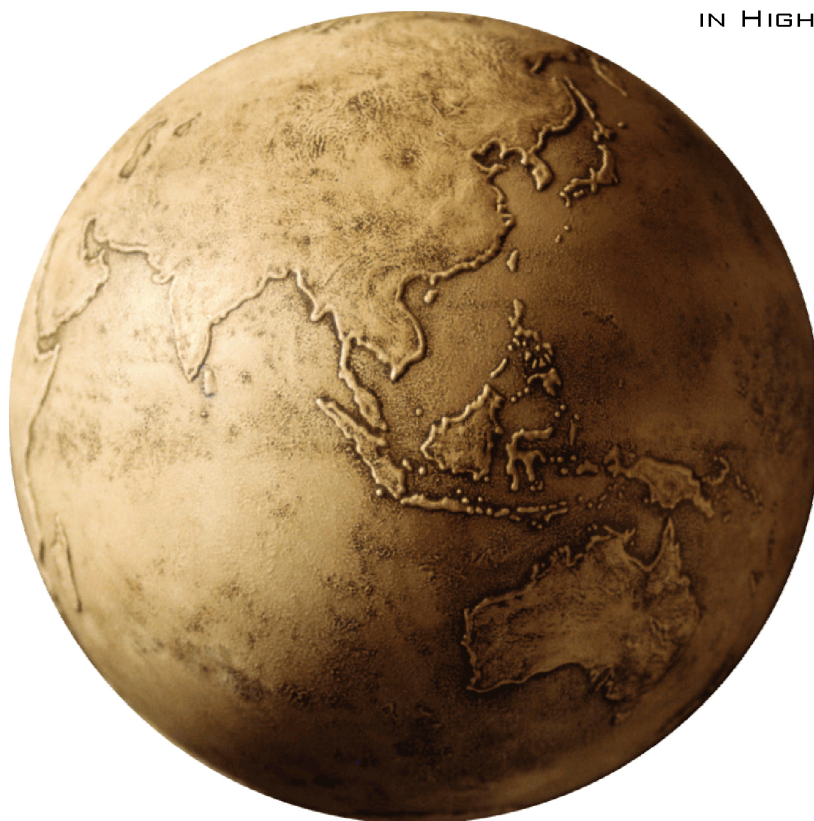
The University of Georgia

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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.

Research Articles

Instructional Articles

Can Flipping the Classroom Work? Evidence From Undergraduate Chemistry

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Our study describes student outcomes from an undergraduate chemistry course that implemented a flipped format: a pedagogical model that consists of students watching recorded video lectures outside of the classroom and engaging in problem solving activities during class. We investigated whether (1) interest, study skills, and attendance as measured by self report improved during the term as a result of course format (n=252) and (2) students in a flipped chemistry course earned higher grades in the subsequent chemistry course compared with students who enrolled in the non-flipped course that same term (n=295). Although we found no significant differences between students' self-reported interest and study skills at the end of the term, we found that students enrolled in the flipped course reported attending class more often than students in the non-flipped course ($\beta =$ .32). We also found that after controlling for student-level covariates related to achievement (such as SAT Math scores and grade in previous chemistry course), students enrolled in the flipped chemistry course experienced, on average, a statistically significant increase of half a standard deviation ($\beta =$ .55) in their grade in the subsequent chemistry course. We discuss implications for study of flipped instruction.

Undergraduate institutions are faced with a big problem: too few students major in STEM (science, technology, engineering, and math) fields, and too many who start these majors abandon them before graduating (see CSRDE, 2013). The question of student engagement in STEM fields is one that spans a variety of perspectives, ranging from issues of educational equality to motivation to pursue STEM careers. However, one issue that undergraduate institutions can directly attend to is promoting high-quality instruction in STEM courses (see Fairweather, 2009). Past research has found that lower-division STEM courses often focus too much on providing information and too little on fostering scientific discussion, analysis, and reflection (Baillie & Fitzgerald, 2010; see NAE Annual Report, 2005). Further, many questions have been raised about whether these courses are effective in encouraging students to continue to pursue their STEM major (Baillie & Fitzgerald, 2010; Kyle, 1997; McGinn & Roth, 1999; Mervis, 2010; NAE 2005).

In contrast, students in courses that use active engagement instructional approaches tend to drop out less and earn higher grades (Freeman et al., 2014). Active engagement approaches have also been found to improve students' conceptual understanding and attitudes toward the subject (Beichner et al., 2007). As a result, large universities are exploring new approaches to undergraduate education, seeking to identify active learning approaches that can keep students engaged and enrolled in STEM majors. As such, the present study investigates the effectiveness of one type of pedagogical approach—flipping the classroom—on student interest, study skills, and attendance in the course and student achievement in the subsequent course.

The Flipped Classroom

One approach that contains elements of active learning is the "flipped classroom" (Bishop & Verleger, 2013; Strayer, 2012). The flipped classroom inverts, or "flips," where concept absorption and concept engagement traditionally take place: in a flipped class, the majority of concept absorption happens outside of the classroom while the majority of concept engagement happens in the classroom (Bergmann & Sams, 2012). Watching recorded video lectures outside of the classroom is currently the most common instance of concept absorption in the flipped format. Concept engagement in class may look like working on problem-solving activities individually and/or in groups, sometimes with the help of peers, teaching assistants, or the instructor. Flipping the classroom allows class time to be used for students to ask questions, engage in problem solving, and practice the concepts that were learned outside of class, thus allowing students to better prepare for learning the material. Flipped instruction changes where students practice and engage with the material. Instead of applying difficult concepts outside of class in isolation, flipped instruction encourages students to apply concepts during class with guidance from the instructor and other peers.

There are some reasons to believe that flipped classrooms may benefit student outcomes more than non-flipped classes. For example, the flipped format has had positive effects on student problem solving skills (Khousmi, & Hadjou, 2005; Wilson, 2013). Additionally, students who take a flipped course earned higher grades on common exams (Baepler, Walker, & Driessen, 2014; Deslauriers, Schelew, & Wieman, 2011; He, Holton, Farkas, & Warschauer, 2016; Moravec, Williams, Aguilar-Roca, & O'Dowd, 2010; O'Flaherty & Phillips, 2015) and higher overall grades than students who take the same course in a traditional,

non-flipped format (Baepler et al., 2014; Deslauriers et al., 2011; Kim, Kim, Khera, & Getman, 2014; Moravec et al., 2010; O'Flaherty & Phillips, 2015; Roach, 2014; Strayer, 2012). However, some studies found no statistically significant differences between student achievement in flipped and non-flipped classes (see Clark, 2015; Jensen, Kummer, & Godoy, 2015; Morin, Kecskemety, Harper, & Clingan, 2013; Muzyk et al., 2015, Rias-Rohani & Walters, 2014), leading to unclear conclusions about the benefits of flipped instruction on student achievement.

In addition to improvements in performance and skills, some research has shown that students have positive perceptions of flipped instruction (Stelzer, Brookes, Gladding, & Mestre, 2010; Deslauriers et al., 2011; Mason, Shuman, & Cook, 2013; Kim et al. 2014; Roach, 2014). For example, students reported that being able to watch videos on their own time aids their studying since they can pause and rewind lectures (Roach, 2014). McCallum, Schultz, Selke and Spartz (2015) conducted an exploratory study to understand students' views on academic, peer-to-peer, and student-faculty involvement in three flipped undergraduate courses. Across these three dimensions, some of the themes that emerged were lecture accessibility, engaging in-class experience, relationship building, and professor awareness of student. In another study examining three flipped courses, Kim and colleagues (2014) found that students perceived classroom activities to be more student-oriented than teacher-oriented compared to activities in non-flipped classes and that peer interaction was helpful for their understanding of the class's core concepts.

It is important to identify through what mechanisms the flipped format has an effect on student outcomes. For example, Jensen and colleagues (2015) suggest that the benefits of the flipped format may be from students engaging in active learning; as such, they compared an active learning flipped class and an active learning non-flipped class. In the flipped class, content attainment (gaining a conceptual understanding of the material) took place before class and concept application (using the concepts in novel situations) took place during class, and in the non-flipped class, content attainment took place during class, and concept application took place after class. They found no statistically significant differences in achievement on unit exams, homework assignments, and final exam scores, suggesting that encouraging undergraduate instructors to use more active learning techniques might have the same benefits as flipping the classroom. A literature review from O'Flaherty and Phillips (2015) on 28 studies on the flipped classroom suggests that benefits found in the flipped are from indirect evidence (e.g., exam grades, perceptions, and staff satisfaction). Therefore, it is imperative for studies evaluating flipped

instruction to include and test for additional measures that may explain why flipped instruction affect students' achievement.

The Flipped Classroom and Learning-Related Behaviors

There are a number of reasons why the flipped classroom can be beneficial for student learning. Theories that focus on the cognitive load students face during non-flipped courses could suggest that the flipped format allows students to ask questions more easily. Students do not have to keep track of points of confusion because class time is spent more actively rather than passively, allowing them to better learn the material. Therefore, students may adopt better study strategies such as keeping track of how they work and going back to check their answers. Students may also gain other skills from the flipped format. For example, Kong (2014) and colleagues looked at information literacy (gathering, synthesizing, interpreting, and evaluating information) and critical thinking skills (capability to think reflectively and judge skillfully) of students in a flipped Integrated Humanities class in a secondary school in Hong Kong. They found that their information literacy and critical thinking skills statistically significantly improved. Given the current evidence, research evaluating study skills gained from a flipped course may further the potential of the format helping improve STEM retention. Flipped classrooms might also benefit student learning through increasing student interest in the course such that students can see more relevance of the material during an interactive classroom session as compared with non-flipped instructor-centered approaches. In the current study, we explore differences in students' report of several learning-related outcomes between flipped and non-flipped instruction: study skills, attendance, and interest in the course. Although there is evidence of improved course grades and student satisfaction as a result of the flipped format, few studies are robust in looking at learning outcomes that follow students over time (see O'Flaherty & Phillips, 2015). Thus, there is a need for flipped classroom research to understand how students benefit from the format beyond the flipped course.

Study Designs for Evaluating Flipped Instruction

Differences in study designs in understanding the flipped classroom's effectiveness exist. For example, studies exploring student outcomes compare students in the flipped class to a previous course taught in a non-flipped format (Deslauriers et al., 2011; O'Flaherty & Phillips, 2015; Stelzer et al., 2010; Wilson, 2013). Stelzer and colleagues (2010) examined student grades from an introductory physics course from the Spring

and Fall terms of 2008, and they compared them to the grades from the same course when it was taught from 1997 to 2002. However, this was a time difference of up to 10 years—student demographics, instructors, and exam content most likely have changed over time. Thus, each could have potentially played a factor in the differences found in outcomes between the flipped course and the non-flipped courses. Other studies on flipped instruction do not have another course as a comparison group (Roach, 2014; Wilson, 2014), thereby providing only limited evidence of validity of the study. In addition, another study design typical of evaluating the effectiveness of the flipped format is for instructors to implement the flipped format for a portion of the course during the term (Roach, 2014). Some even implement this for as little as three sessions of their entire course term (Moravec et al., 2010; Stelzer et al., 2010; Deslauriers et al., 2011). These three studies found that students in the flipped format did statistically significantly better on performance (measured by common exam score or course grade) compared to students who took the same course non-flipped. However, implementing the flipped format for only a portion of the course term makes it difficult to truly understand the associations between flipped instruction and student outcomes.

One way to further the research on the flipped format is to explore how students perform in a subsequent course. This is important to consider because student achievement in the current class could be confounded with course difficulty, teaching quality, and instructor grading leniency. Examining students' achievement in a subsequent course would allow researchers to better understand if the learning gains students experience in a flipped course transfer to the subsequent course. To our knowledge, there is only one study on the flipped format that looked at student performance in subsequent courses (Rias-Rohani & Walters, 2014). These students took a flipped engineering course and two subsequent non-flipped courses in a three-course series. Although students in the flipped course had statistically significantly higher grades than students in the non-flipped course, there were no statistically significant grade differences between these groups in both of the subsequent courses. Though this study was an important step in better understanding student performance in the subsequent course post-flipped, the design of the study compared students in the flipped condition to students taught by the same instructor in past non-flipped courses. As stated earlier, it is crucial for research on the flipped format to compare the treatment course to a concurrent control course where the control course is as comparable in difficulty, rigor, and teaching quality as possible. It is worth further exploring the skills students take away from the flipped class, especially as more schools are considering or are currently implementing the flipped format. If flipped classrooms do indeed help students learn content better, evaluating student achievement in a subsequent course will be an indicator of student learning of previous course material, especially in courses where material builds on itself.

In addition to understanding the benefits associated of the flipped classroom on student outcomes, it is also important to understand the context in which flipping the classroom can work. Exploring quality of instruction in large introductory STEM courses is worth considering for improving STEM enrollment and retention, yet few studies have explored the flip in large introductory STEM courses. One exception is Strayer (2012), who investigated student perceptions of flipped instruction in introductory statistics. Though the results showed that the students taking the course favored flipped instruction, Strayer (2012) recommended that perhaps the flipped format could be more suited for an upper-division course. Strayer noted that those in an upper-division flipped course may be more motivated than those in an introductory flipped course as they are taking a course specific to their major than a course that merely fulfills their degree requirements. This opens the question of whether the flipped format is a less suitable design for introductory courses.

Research investigating non-achievement outcomes such as student attendance and engagement have also been evaluated with similar study designs as those looking at student achievement outcomes. Specifically, some studies compared student perceptions in the flipped format to student perceptions in the same non-flipped course (Deslauriers et al., 2011; Mason et al., 2013), whereas other studies do not use a comparison group at all (Chen, Wang, Kinshuk, & Chen, 2014; Kim et al. 2014; Roach, 2014). For example, Deslauriers and colleagues (2011) compared student attendance of flipped and non-flipped courses conducted during the same term and found that student attendance increased significantly after a researcher came and taught the flipped version. It is difficult to know if student attendance increased as a result of the format or the new instructor. Likewise, studies using student surveys with low response rates (e.g., Kim et al., 2014), might limit the generalizability of the findings. In another study He and colleagues (2016) used data from students' self-reports of the amount of time they studied outside of class and found no differences between students in flipped and non-flipped courses. However, the authors noted that study time was measured with self-reports and were highly skewed. As such, it might not be the quantity, but the quality, of study time that may contribute to differences in achievement between students in flipped and non-flipped courses.

Table 1
Descriptive Statistics of Demographic Variables Across Sample 1 and 2

	Sample 1 (n=252)	Sample 2 (n=295)
Asian	45%	39%
Hispanic	29%	32%
White	9%	11%
Other ethnicity	17%	18%
Male	31%	33%
Low income	44%	49%
First generation student	65%	68%
STEM major	43%	44%
AP Chemistry exam	8%	9%

Note. Sample 1 is students who have valid survey data. Sample 2 is students who took the subsequent course in the sequence

The Present Study

The present study compared two sections of an undergraduate chemistry course—one non-flipped and the other flipped. Our study makes a unique contribution to the literature by investigating the associations between the course format and student learning experiences and outcomes, as well as comparing subsequent course performance of students who took a flipped course section and those who took the same course in a non-flipped section. We present the following research questions and hypotheses: (1) Do students in the flipped classroom report higher interest, use of study skills, and class attendance than students in the non-flipped classroom? Because the flipped format allows for active learning techniques in the classroom, we hypothesize that students enrolled in the flipped format will have higher interest, study skills, and attendance outcomes than students enrolled in the non-flipped format. (2) Do students enrolled in an undergraduate flipped format chemistry class earn higher grades in their subsequent chemistry course compared with students who enrolled in the non-flipped format? We hypothesize that students enrolled in the flipped format will earn higher grades in the subsequent course than students enrolled in the non-flipped format.

Method

Participants

The present study used data from a larger study investigating instructional practices in undergraduate STEM courses at a large public university in Southern California. The sample consisted of two sections of a large undergraduate introductory chemistry course taught in the Winter term of 2014 by two different instructors.

Six hundred and twelve students enrolled in Chemistry 1A (Chem1A) in the Winter term: 372 students enrolled in the flipped section, and 240 enrolled in the non-flipped section. Students in Chem1A had a mean SAT score of 592 (out of 800). Also, 44% were male, 38% were of Asian ethnicity, 32% Hispanic, 10% White, and 20% of other ethnicity (comprising of American Indian, Black, Pacific Islander, unknown, non-resident, or two or more ethnicities). Of these 612 students, 48% students subsequently enrolled in one of the two Chem1B sections (each taught by different instructors). Twenty percent of students who took the flipped Chem1A course were enrolled in the first listed Chem1B section (Tuesdays and Thursdays at 9:30 to 10:50am), whereas the remaining 80% were enrolled in the second listed Chem1B section (Mondays, Wednesdays, and Fridays at 12:00 to 12:50pm). Subsequently, 33% of students who took the non-flipped Chem1A course were enrolled in the first Chem1B section, while the remaining 67% were enrolled in the second section.

To answer our two research questions, we created two analysis samples: sample 1 consisted of students who participated in the surveys administered during their Chem1A course (n=252) and sample 2 consisted of students who continued on to the next course in the sequence (n=295). To be eligible in sample 1, students had to have valid responses on the pre and post surveys administered at the beginning and at the end of the Winter term. To be eligible for sample 2, students had to enroll and complete the next course in the sequence, Chem1B. Table 1 presents descriptive statistics for the overall sample and by course format for samples 1 and 2.

Regression analyses predicting completing the next course in the sequence (Chem1B) suggest that students in the flipped format course were not statistically significantly more likely to enroll in the subsequent course ($p = .08$) than students enrolled in the non-flipped format controlling for their Chem1A performance.

Context and Procedure

Instructors were recruited to participate in a larger study observing instructional practices in undergraduate STEM courses. As part of their participation in the study, instructors allowed researchers to administer two surveys—one at the beginning and one at the end of the term—to students for extra credit in the course. Surveys were administered via the university's online course management system, and students were able to access and complete the survey within one week after being made available. The response rate for the flipped section was 40% and for the non-flipped section 46%.

Both sections of Chem1A were part of that university's three-course introductory chemistry series—a mandatory prerequisite for Biology, Chemistry, Earth System Science, Public Health Science, Nursing Science and other related majors. Both sections had three one-hour sessions that took place on Mondays, Wednesdays, and Fridays for 10 weeks, one in the morning and the other in the early afternoon. Both sections had a mandatory formal class session component, which was led by the instructor of the section, and a discussion component, which was led by the teaching assistant of the section. Because this course is the first of a three-part introductory chemistry series, this class (Chem1A) is usually taken in the Fall term, the second introductory chemistry course (Chem1B) in the Winter term, and the third introductory course (Chem1C) in the Spring term. However, because the introductory chemistry course was offered in the Winter term, this class was likely to have a number of late-track students.

The flipped section had a class website for all announcements, video lecture materials, Powerpoint slides, homework links, office hours, and instructor and teaching assistant contact information. For each chapter, homework assignments counted as six percent of the student's total grade, while other homework assignments did not count towards the grade but were recommended to be completed. Videos were uploaded to YouTube with recommended assignments at the end of each video, and students were required to watch the videos before class (ranging from one to four videos per class). Videos were less than ten minutes in length and showed Powerpoint slides with audio spoken over them. In-class participation and quizzes (proctored at random on dates unknown to the students) contributed to three percent of the student's total grade. The

instructor who taught the flipped section implemented the flipped method for the first time in the Fall 2014 but had been teaching the undergraduate introductory chemistry series at the university for over two years. A typical lesson in this flipped chemistry course varied in its degree of flipped implementation: there were some class periods where the instructor ran the class period flipped for the majority of class time and other class periods where the instructor lectured for the majority of class time. For example, in one one-hour class session toward the beginning of the term, the instructor asked her students to work on four multiple-part problems with each other from the beginning of the class time to nearly the end, and then the instructor instructed in the remaining time left. During these problem-solving sessions, students were able to have their questions answered by the teaching assistants and the instructor. In another class session toward the end of the term, the instructor used the majority of the class time to instruct, utilizing PowerPoint slides to present information to the class, and had students work on one problem collaboratively at the end of the class session time. Researchers were able to gather this information from observations, interviews with the instructor, and interviews with students taking the class.

The non-flipped section also had a course website consisting of announcements, instructor and teaching assistant contact information, office hours, lecture slides, discussion component worksheets and answer keys, weekly quiz answer keys, midterm answer keys, and final answer keys. The instructor of the course was a graduate student in his last year of his Chemistry Ph.D. Contrary to the flipped section, weekly quizzes were administered to students on Mondays the beginning of class, which counted for 20% of the grade. Instead of asking questions via email, students were encouraged to use a web platform called Piazza, where students ask questions for other students, teaching assistants, and the instructor to answer. The instructor used iClicker questions to gauge students' understanding and gave physical demonstrations of chemistry constructs during the lectures.

Measures

We collected data from two sources: Student surveys administered by the researchers twice during the term (Time 1 and Time 2) and student-level university data obtained from the Office of Institutional Research.

Interest. We measured interest for the course using three items from the Mathematics Value Inventory (Luttrell et al., 2010): "I find many topics in the course to be interesting", "Solving problems in this class is interesting for me", and "I find this class intellectually stimulating." Each item was on a scale of 1 to 5, 1 being "Never" and 5 being "Always". Students had to

Table 2
Descriptives of SAT Mathematics Scores, Learning Comparison of Interest and Study Skills, and Attendance (n = 252)

	Overall				Flipped (n=136)				Non-Flipped (n=116)			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max
Mathematics SAT Score	578.73	78.98	400	800	584.85	77.05	400	800	571.55	80.9	410	800
Time 1												
Interest	3.68	0.88	1	5	3.56*	0.83	1	5	3.80*	0.92	1	5
Study Skills	3.61	0.82	1	5	3.50*	0.77	1	5	3.74*	0.87	1	5
Time 2												
Interest	3.62	0.95	1.33	5	3.48**	0.91	1.33	5	3.80*	0.91	1.33	5
Study Skills	3.64	0.79	1.33	5	3.56	0.74	1.67	5	3.72	0.85	1.33	5
Attendance	4.67	0.62	2	5	4.75	0.55	2	5	4.57	0.68	2	5

*Note. * p < .05 ** p < .01 ***p < .001.* Asterisks indicate a significant difference between the means of the non-flipped and flipped groups using a two-sample T test.

have answered at least one of the items at the beginning and end of the term to be included in sample 1. Item reliability for the interest component was .83 at the pretest and .87 at the posttest. The mean interest at Time 1 was 3.68 with a standard deviation of 0.88 and ranged from 1 to 5 (see Table 2). The mean interest at Time 2 was 3.62 with a standard deviation of 0.95 and ranged from 1.33 to 5 (see Table 2).

Study skills. We used three items from the metacognitive strategies and practices from Wolters' adaptation of the Motivated Strategies for Learning Questionnaire (Wolters, 2004) to evaluate student learning behaviors. On a scale of 1 to 5, with 1 being "Not at all true" and 5 being "Very True," each item asked students to indicate how much they agreed with the following statements: "When I'm working, I stop once in awhile and go over what I have been doing", "Before starting an assignment, I try to figure out the best way to do it," and, "I keep track of how much I understand the work, not just if I am getting the right answers." We used the mean of the students' responses to the three items to measure their study skills at the beginning and the end of the term. Students had to have answered at least one of the items at the beginning and end of the term to be included in sample 1. Item reliability for student study skills was .75 at Time 1 and .75 at Time 2. The mean of study skills at Time 1 was 3.61 with a standard deviation of 0.82 and ranged from 1 to 5 (see Table 2). The mean of study skills at Time 2 was 3.64 with a standard deviation of 0.79 and a range of 1.33 to 5 (See Table 2).

Attendance. We used one item from the student survey administered at Time 2 to evaluate student self-reported attendance at the end of the term. We asked students to report on a scale of 1 to 5, from 1 as "Never" and 5 as "Always," to indicate how often students attended the

class session. Mean attendance was 4.67 with a standard deviation of .0.62 and ranged from 2 to 5 (See Table 2).

Grade in subsequent course. Grades at the end of each course were collected from the university records. Grades were assessed on a 4-point scale, where 4.0 was an A, 3.7 was an A-, 3.3 was a B+, 3.0 was a B, 2.7 was a B-, 2.3 was a C+, 2.0 was a C, 1.7 was a C-, 1.3 was a D+, 1.0 was a D, and 0 was an F. This is a typical grading scale for large universities in the United States. For sample 2, the mean grade obtained in Chem 1B was 2.07 with a standard deviation of 1.21 and a range of 0 to 4 (See Table 3). Because we controlled for student grades in Chem1A, we also reported the mean (2.78), standard deviation (0.74), and range (1.7 to 4) on Table 3.

Covariates. University records provided to the research team included information on the students' ethnicity (Asian, Hispanic, White, and Other), SAT mathematics test score (continuous), whether the student met low-income level defined by Federal TRIO Program[1] (dichotomous), whether the student is a first generation college student (dichotomous), whether the student is a STEM major (dichotomous), and whether the student took the AP Chemistry exam in high school (dichotomous). In addition, we used the students' grade in Chem1A as a covariate for answering research question 2. The average grade in the flipped course was 2.82 (between a B- and a B) and the average grade for students in the non-flipped course was 2.72 (B-) on a scale of 1 to 4; differences between the average

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[1] For more information on the Federal TRIO program see http://www2.ed.gov/about/offices/list/ope/trio/incomelevels.html

Table 3
Descriptive Grades and SAT Mathematics Scores for Sample 2

	Number	Chem1A Course Grade	Chem1B Course Grade	SAT Mathematics Score
		Sample 2 (n=295)		
		Overall		
Mean		2.78	2.07	579.05
SD		0.74	1.21	79.20
Min		1.7	0	400
Max		4	4	800
		Flipped		
Mean		2.82	2.45***	590.84**
SD		0.8	1.09	80.50
Min		1.7	0	400
Max		4	4	800
N	166			
		Traditional		
Mean		2.72	1.59***	563.88**
SD		0.65	1.2	75.11
Min		1.7	0	400
Max		4	4	800
N	129			

Note. ** $p < .01$ ***$p < .001$. Sample 1 is students who took the introductory chemistry course and received a grade. Sample 2 is students who took the subsequent course in the sequence. SD means standard deviation. Course grades are on a 4-point GPA score where a score of 4 is an A, 3.7 is an A-, 3.33 is a B+, 3.0 is a B, 2.7 is a B-, 2.3 is a C+, 2.0 is a C etc. Asterisks indicate a significant difference between the means of the traditional and flipped groups using a two-sample T test.

grades in both sections were not statistically significant (Table 3).

Analysis Plan

Research question 1. We asked: Do students in the flipped classroom report higher interest, use of study skills, and class attendance than students in the non-flipped classroom? All statistical analyses were performed with *Stata 13* (StataCorp, 2013). To predict whether the three outcomes were related to taking the course in a flipped format, we conducted three separate regression analyses on sample 1. For all models, except for student attendance, we controlled for students' previous (Time 1) reports of that construct. The analyses for this research question is based on the following Ordinary Least Squares (OLS) regression model:

$$YT2Survey_{iW} = \beta_0 + \beta_1 Flipped_{iW} + \beta_2 T1Survey_{iW} + \beta_3 Covariates_{iW} + e_i$$

where *YT2 Survey*$_{iw}$ is the collection of interest, study skills, and attendance outcomes for student *i*, derived from their responses to our student survey at time 2; *Flipped*$_{iW}$ is a dichotomous indicator of the instructional format (flipped or non-flipped) of the student's chemistry course taken the Winter term and equals 1 if it was presented in a flipped format; *T1survey*$_{iw}$ is a continuous indicator of students responses at time 1 for the interest, study skills, and attendance outcomes, *Covariates*$_{iW}$ is the observed student characteristics described above for student *i* measured in the winter term; β_0 is a constant and e_i is an error term.

Research question 2. We also asked whether undergraduates who enrolled in a flipped format chemistry class earn higher grades in their subsequent chemistry course compared with those who enrolled in the non-flipped format. To predict the grade the student received in the subsequent

course, we conducted an OLS regression analysis on sample 2. Our model is as follows:

(2) $\text{Achievement}_{is} = \text{ß}_0 + \text{ß}_1\text{Flipped} + \text{ß}_2\text{PriorAchievment}_{iw} + \text{ß}_3\text{Covariates}_{iw} + e_i$ where Achievement_{is} is a subsequent grade observed for student i in Chem 1B taken in the Spring term; Flipped_{iW} is a dichotomous indicator of the instructional format (flipped or non-flipped) of the student's chemistry course taken the Winter term and equals 1 if it was presented in a flipped format; $\text{PriorAchievment}_{iw}$ is the grade observed for student i in Chem1A taken in the Winter term; Covariates_{iw} are the observed student characteristics described above for student i measured in the Winter term; β_0 is a constant, and e_i is an error term. The subscript W refers to the Winter term, and the subscript S refers to the Spring term.

Results

Course Selection and Student SAT Score

Because the current study aimed to make comparisons between flipped versus non-flipped instruction, selection effects into the flipped classroom were of concern. To understand the extent to which this was a problem, we ran a series of logistic regressions in which class format was regressed on a series of demographic variables to understand pre-existing differences between the two groups. We tested whether gender, ethnicity, STEM major, first generation status, the taking of the AP exam in chemistry, low-income status, and initial SAT math were systematically related to students selecting the flipped format as opposed to the non-flipped format. We found evidence of selection effects for student scores on the SAT math exam where a one-unit increase in SAT math score is associated with an expected change in log odds for enrolling in the flipped section was .003 ($p = .002$). Because selection is always of concern in non-randomized trials, we use SAT math and other demographic characteristics as covariates.

Research Question 1

Table 4 presents the associations between the flipped format and interest, study skills, and attendance, while controlling for the covariates listed above. Model 1 presents the results predicting to their interest. We found that student interest in the flipped section did not significantly differ from interest in the non-flipped section at the end of the course controlling for initial interest ($\beta = -.16$, $p = .14$). Model 2 presents the results predicting to their study skills and we found no significant differences in their reported use of study skills by course format ($\beta = .00$, $p = .98$). Model 3 presents the results predicting to students' self-reported attendance. We found that students enrolled in the flipped section reported attending class more than students enrolled in the non-flipped format ($\beta = .32$, $p = .012$).

Research Question 2

Table 5 presents the results predicting students' grades earned in the next course in the sequence while controlling for our covariates. We found that on average, students enrolled in the flipped section of Chem1A obtained significantly higher grades in their Chem1B course than students who were enrolled in the non-flipped section ($\beta = .55$, $p < .001$) even after controlling for student-level characteristics. This can be interpreted as a .89 increase in student grade point average as measured on a 4-point scale—almost one full letter grade.

Validity Check

Because flipped instruction was confounded with instructor in our study, there were concerns about the validity of our findings. Specifically, it could be that students enrolled in the flipped section had higher achievement outcomes in the subsequent course because of an effective instructor and not due to the flipped format. To address this concern, we provide additional evidence about the instructors in the form of (1) comparing the syllabi of both professors and (2) using data available to us from the larger study so that we could see whether or not the flipped instructor had larger gains compared to other instructors more generally with other students during a different term. If the instructor is comparable to other instructors teaching Chem1A in the non-flipped format, it is more likely that the associations we found were due to the format and not just due to the instructor.

Comparing syllabi. We compared the syllabi of each course. According to each syllabus, the textbook for the course was the same for both courses (*Chemical Principles: The Quest for Insight* by Atkins, Jones, and Laverman, 6th edition). The flipped section facilitated in-class activities that were worth three percent of a student's total grade, whereas the non-flipped section facilitated in-class activities that were worth five percent of a student's total grade. Both courses worked through example problems in lecture. Both sections assigned graded homework assignments on Sapling Learning (Sapling Learning, 2011), an online software that provides interactive learning experiences. Assigned homework in the flipped section was worth six percent of the grade, and in the non-flipped it was worth 10% percent. Both classes also had non-graded homework problems from the same textbook, and both syllabi recommended these problems as good practice. Though the flipped section's midterms were each worth 25% of the total grade and the final was worth 38% while the non-flipped section's midterms were worth 20% and the final exam was worth 25%, both courses

Table 4
Associations between Flipped Format and Interest, Study Skills, and Attendance (n=252)

	Interest	Study Skills	Attendance
Flipped	-0.16	0.00	0.32*
	(0.11)	(0.11)	(0.13)
SAT mathematics	-0.10	-0.04	-0.03
	(0.06)	(0.06)	(0.07)
AP Chemistry	0.08	0.02	0.02
	(0.20)	(0.20)	(0.23)
Male	-0.11	-0.02	-0.14
	(0.12)	(0.12)	(0.14)
Hispanic	0.07	0.21	0.06
	(0.14)	(0.14)	(0.17)
White	0.02	0.26	0.34
	(0.20)	(0.20)	(0.23)
Other ethnicity	0.16	0.20	-0.02
	(0.15)	(0.15)	(0.18)
Low income	-0.02	-0.01	0.20
	(0.12)	(0.12)	(0.14)
First generation	0.04	0.06	0.16
	(0.14)	(0.13)	(0.16)
STEM major	-0.02	-0.04	-0.15
	(0.11)	(0.11)	(0.13)
T1 survey	0.51***	0.54***	
	(0.06)	(0.05)	
Constant	0.06	-0.13	-0.31
	(0.15)	(0.15)	(0.17)
R-sq	0.314	0.313	0.072

Note. * $p < .05$ ** $p < .01$ ***$p < .001$. Standard errors in parentheses. All continuous variables are standardized. The reference group is Non-Flipped, Female, Asian, no AP Chemistry exam, not low income, not first generation, not STEM major. T1 survey refers to students' report of their interest and study skills at the beginning of the course. Information on students' attendance at the beginning of the term was not available.

administered the same number of exams: two midterms and a final.

Comparing the flipped instructor to other chemistry instructors. To alleviate some concern over the issue of teaching quality confounding the results of our study, we were able to utilize data collected as part of the larger study from instructors teaching the same course (Chem1A) to on-track students in the Fall term. The instructor of the flipped section in the Winter taught a flipped version of the course in the previous Fall. To understand whether or not the instructor who taught the flipped section was higher in teacher quality overall, as measured by gains in student achievement in the subsequent course, we conducted OLS regression to compare gains in achievement elicited by the flipped instructor to gains in achievement elicited by the three other instructors. Using the

same covariates to answer research question two, we found that students who took the non-flipped on-track Chem1A course in the Fall by the flipped instructor did not perform statistically significantly differently from students in the Chem1B course taught by other instructors during the same term (β = .05, *ns*; see Table A in the appendix). This provides some evidence to suggest that the teaching quality of the flipped instructor was not statistically significantly higher than other professors at that university.[2]

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[2] We were unable to follow this procedure to understand if the instructor of the non-flipped course was lower in overall teaching quality because the research team did not collect additional data on other courses taught that academic year by the non-flipped instructor.

Table 5
Association Between Flipped Format and Subsequent Course Grade (n=295)

	Subsequent Course Grade
Flipped	0.55***
	(0.08)
Chem1A grade	0.55***
	(0.04)
SAT mathematics	0.24***
	(0.05)
AP Chemistry	0.25
	(0.14)
Male	0.12
	(0.09)
Hispanic	0.17
	(0.10)
White	0.38**
	(0.13)
Other ethnicity	0.16
	(0.11)
Low income	-0.01
	(0.08)
First generation	-0.01
	(0.10)
STEM major	-0.08
	(0.08)
Constant	-0.45***
	(0.11)
R-sq	0.572

Note. $* p < .05 ** p < .01 ***p < .001$. Standard errors in parentheses. All continuous variables are standardized. The reference group is Non-Flipped, Asian, Female, no AP Chemistry exam, not low income, not first generation, not STEM major.

Discussion

The present study investigated whether students in the flipped format reported higher interest, use of study skills, and class attendance compared to students in the non-flipped format. The present study also examined whether students in a flipped introductory chemistry course earned higher grades in the subsequent chemistry course than students in a non-flipped chemistry course. For study skills and interest, no statistically significant differences were found between students in both courses; however, we did find that students in the flipped section reported higher class attendance, which is consistent with previous findings (see O'Flaherty & Phillips, 2015). We also found that students who took the prior course in the flipped format did statistically significantly better in the subsequent course than students who took the prior course in the non-flipped format suggesting that the effectiveness of flipped instruction may extend beyond that current course.

The present study builds upon and extends the literature in significant ways. Because flipped instruction introduces more active learning elements in the classroom, we posited that students would report on more adaptive study skills, higher interest for the course, and higher class attendance than students in the non-flipped class. We only found evidence suggesting that students reported attending class more in the flipped section than in the non-flipped class. Though the format of the flipped classroom would suggest that

students may be better able to capitalize on more effective study skills such as keeping track of what a student is learning, we do not find evidence supporting this claim. Likewise, because flipped classrooms use more active learning approaches, we hypothesized that students would report higher interest in the course in the flipped format compared to the non-flipped format. However, because the non-flipped format also made use of active learning strategies such as the use of iClickers, it may be that active learning strategies in general pique the interest of students and encourage them to use more adaptive strategies and not the flipped format. Since we did find statistically significant differences in students' grades in the subsequent course in the sequence, we suggest that other mechanisms such as quality of information retained or continual use of adaptive study strategies may explain our results.

Our study builds on the methodological limitations of previous work that have used comparison groups from different terms. Though there are studies on the flipped format that have compared performance to that of a concurrent control course (Deslauriers & Wieman, 2011; Mason et al., 2013; Strayer, 2012) and a study that looks at performance of students who took a flipped course in the subsequent courses (Rais-Rohani & Walters, 2014), our study is the first to do both. This adds to the suggestion that the students who have taken the prior course flipped can earn higher grades in the subsequent course compared to students who, at the same time, took the prior course non-flipped.

Additionally, our study further suggests that the flipped format may work well in a large introductory course (Deslauriers et al., 2011; Moravec et al., 2010). Whereas Strayer (2012) suggested that the flipped format might be better suited for upper-division courses, our study highlights the potential for the flipped format to work in introductory courses. Similar to Moravec and colleagues (2010), who found significantly higher student performance in a large flipped introductory biology course compared to performance in large, non-flipped biology courses, the findings of the present study highlight the potential of the flipped format in large introductory courses. Further studies should be conducted to directly compare student outcomes as a result of the flipped format in upper-division versus lower-division university courses.

Another way this study builds upon the current literature is that it is one of the few studies to investigate the flipped format on students in different academic tracks. One exception is Morin and colleagues (2013) who found no significant differences in performance of students taking an honors flipped course compared with students taking a non-flipped version of the same course. However, students in the flipped course were enrolled during the first term, whereas the comparison group (non-flipped) enrolled

during a different term than when the honors course was normally taught. As Morin and colleagues (2013) noted, it could be that students who took the non-flipped course could have been dismissed from the honors program or could have been taking the course late track, suggesting that the groups were not comparable. The results of the present study provide the potential for the flipped format to be effective in late-track classes; however, it is still unclear whether the flipped format works for all late-track students or if there are differential effects of the flipped format on students of different ability levels.

Limitations and Future Directions

We note several limitations of this work. Due to the number of courses taught in the flipped format, our sample only consisted of students from two courses. These results from the study should be interpreted cautiously because instructors were not randomly assigned to teach in the flipped format, and students were not randomly assigned to course format.

Instructor-level characteristics that might be related to whether they decide to teach in a particular format could not be investigated in our study. However, in practice, this may not be a grave limitation. Though it is important to use random assignment to further understand the effects of the flipped format, because instructors usually decide whether or not to flip their course, we believe it is essential to first study instructors who choose to use the flipped pedagogy. In the present study, we used data from two different instructors teaching the same chemistry course. Though differences in students' outcomes could be attributed to the quality of the instructor teaching the flipped course (recall, the instructor of the non-flipped course was a graduate student), we were able to capitalize on data from the larger study and compare student outcomes from the flipped instructor teaching a different course in a different term, with other instructors teaching that same course. We found no statistically significant difference in students' outcomes when comparing the flipped instructor with other instructors, suggesting that the flipped instructor was not just generally a better instructor. Though this validity check gives us some confidence in our findings that it was indeed the flipped format that lead to our results, we were limited in that we were unable to conduct the same such validity check with the non-flipped instructor.

In addition to the lack of random assignment of instructors, there was no random assignment of students. As mentioned in our results section, we found a small but statistically significant difference in students' SAT math scores between the two Chem1A sections. We found further evidence of this in our informal interviews we conducted with students in the flipped section; some

reported that they enrolled in the course because they knew it was flipped. However, other students we interviewed were not aware of this, and to our knowledge the course was not advertised as a flipped course. Most students from both groups who completed Chem1B enrolled in the second section, which further supports the lack of random assignment limitation. This opens up the question of what are the specific characteristics of students who enroll in the flipped course? Do they tend to be high-achieving, more motivated, and/or more conscientious? Future research could explore the characteristics of students who enroll in the flipped format and whether the format is particularly effective for students who have certain characteristics.

It is possible that our measures of interest and study skills were not reliably or validly measured. Though the reliabilities for the measures were within the range of what is commonly accepted (alpha coefficients ranging from .75 to .87), using too few items to measure a construct could influence the validity of the findings such that we may not have measured the breadth of the constructs. Due to time constraints on the student survey, the research team could only include a small number of items for each construct that was measured. As such, we urge future research to replicate these findings using more complete survey measures. It may also be that students study skills do not change that quickly, and instead, an effect on students' study skills in the subsequent quarter should be investigated. Unfortunately, due to the timing of the larger study, we were unable to do so.

We note the limitation of ceiling effects in our measure of self-reported attendance. While we found significant differences between students enrolled in the flipped format and students enrolled in the non-flipped format, the mean of self-reported attendance was 4.67 on a 5-point scale. Because students are likely to report that they attended classes more than they actually did, future studies could explore more objective ways of measuring attendance such as through the use of observations that do not rely on self-report. Likewise, our study also had a low response rate to the survey even though students were incentivized to take the surveys for extra credit in the course. We wondered whether the students who took the survey were highly motivated/conscientious or if they were the ones most in need of extra credit. Though we do not have survey data on motivation outcomes, to explore this with the data given, we ran a correlation to see whether taking the survey was related to students' previous achievement as measured by their mathematics SAT score. We found that taking the survey was negatively correlated with mathematics SAT score (r = .08, p < .001), and if we consider their previous achievement as a proxy for motivation, perhaps students less motivated/conscientious took the survey because they

were in need of extra credit. Future research can explore whether students who take the survey are more or less motivated/conscientious.

Though self-reported data is a limitation, we believe our self-reported attendance data serves as a starting point for future research. As participation in in-class activities were weighted similarly across both course sections (3% for the flipped course and 5% for the non-flipped course), this suggests that differences in the grading of class participation may not be a factor in whether a student decides to attend class. In-class quizzes in the flipped course were worth three percent of the student's total grade but were pop-quizzes (students did not know ahead of time when the quizzes would be administered), and in-class quizzes in the non-flipped were worth 20% of the student's total grade but were not pop-quizzes (students knew ahead of time when the quizzes would be administered). It is difficult to tell with the available information whether the pop quizzes in the flipped course were the drivers of student attendance, but since quizzes in the flipped course were only worth three percent of a student's total grade (as opposed to 20%), it may be likely that other factors contributed to students reporting higher attendance in the flipped course versus the non-flipped course. In regards to the issue of self-reported attendance as being a proxy for student engagement, we do not contest this assertion. It could very well be that students who attended class more were the ones who were more likely to engage in class; however, without additional data such as interviews from students, we are unable to know. As such, self-reported attendance could be an indicator of student engagement. Future research could explore whether student engagement mediates attendance rates in the flipped format. The flipped classroom was still relatively new to the university and was the instructor's first time teaching the course flipped. Therefore, the implementation of the flipped design may not have been consistent throughout the term. From informal interviews and observations, the entire class period was sometimes not dedicated to working through problems and collaborative learning. Therefore, further research could investigate whether or not different degrees of flipped instruction are most adaptive for student outcomes, perhaps through developing some measure that evaluates the extent of which the course is flipped.

Conclusion

As active learning designs have been proposed as a strategy that could potentially increase the retention rate of STEM majors, our study provides a closer look into this specific approach of active learning. By exploring student achievement and learning-related behaviors in the flipped classroom, we hope our work encourages

efforts to increase STEM retention rates across universities such that students will graduate with their degrees and be prepared for technology- and information-based careers.

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Appendix

Table A
Validity Check: Association between Fall Instructor and Subsequent Course Grade (n=1072)

	Subsequent Course Grade (Winter 2014)
Flipped Instructor	0.05
	(0.05)
Fall Chem1A grade	0.59***
	(0.02)
SAT mathematics	0.19***
	(0.03)
AP Chemistry	0.13*
	(0.05)
Gender	
Male	-0.03
	(0.05)
Ethnicity	
Hispanic	0.00
	(0.06)
White	-0.01
	(0.06)
Other	0.16*
	(0.07)
Low income	-0.00
	(0.05)
First generation	-0.13**
	(0.05)
STEM major	-0.04
	(0.05)
Constant	0.06
	(0.06)

Note. * $p < 0.05$ **$p < .01$ ***$p < .001$. Standard errors in parentheses. All continuous variables are standardized. The reference group is Non-Flipped Instructor, Asian, Female, no AP Chemistry exam, not low income, not first generation, not STEM major.

Promoting Technology-Based Collaboration Among Pre-Service Music Educators: An Inter-University Project

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The purpose of this inter-university project was to explore pre-service teachers' perceptions of collaboration and use of online technology. Twenty-two undergraduate music education majors from two separate universities participated in an eleven-week collaborative project to develop, teach, and self-assess general music lesson plans via a variety of student-selected online technologies. To determine the participants' perceptions, the researchers administered the quantitative Technology Integration Confidence Scale and periodic qualitative questionnaires consisting of open-ended questions. Participants showed positive quantitative gains in understanding technology operations and concepts, planning and designing learning environments, applying technology, assessment, and understanding ethical and legal issues in the classroom. From the qualitative data, the researchers found four emergent themes relating to communication and pedagogical knowledge: (1) versatility and potential of collaborating through technology, (2) barriers and challenges to effective communication, (3) importance of collaborative communication, and (4) increased personal effectiveness through reflective growth. Participants reported that working through collaborative assignments increased their self-confidence and reflective thinking skills, as well as helping them recognize the value of communication in terms of curriculum and instructional effectiveness. These findings highlight the importance of identifying strategies to instruct, motivate, and evaluate pre-service music teachers as they develop 21st century skills and music teaching competencies. To conclude, the co-authors discuss implications of technology-based collaborations beyond music education for the teaching profession in general.

In 2011, the Council of Chief State School Officers (CCSSO) released the Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards that outlined the knowledge and skills K-12 teachers should have in contemporary learning contexts. These standards described the principles and teaching practices common to all subject areas and grade levels, including the skills of collaboration and using technology in the classroom (CCSSO, 2011). Accordingly, teacher education programs need to provide opportunities for their students to engage in collaborative projects in order to promote the development of these skills. In this article, we discuss one such collaborative, inter-university project for pre-service music education majors. The student-participants collaborated by designing, implementing, and self-assessing lesson plans for elementary general music classes. We enhanced participants' collaborative work through a variety of student-selected communication online technologies because it plays an ever-increasing and ever-changing role in teachers' professional lives (Kimmons, Miller, Amador, Desjardins, & Hall, 2015; Teo, 2015) and because it has the potential to facilitate effective collaboration (Dabbagh & Kitsantas, 2009; Funkhouser & Mouza, 2013; O'Donnell, Hmelo-Silver, & Erkens, 2013). Specifically, we investigated how collaborative assignments facilitated by online technology influenced undergraduate music education majors'

perception of collaboration and understanding of pedagogy.

Literature Review

Collaborative learning, an umbrella term indicating a range of cooperative educational strategies, began to draw educators' attention in the 1980s (Smith & MacGregor, 1992). It is broadly defined as a negotiated interpersonal process of two or more people focused on addressing a given learning problem (Ballantyne & Olm-Madden, 2013; Dillenbourg, 1999) and involves collective thinking, inquiry, and discourse. Teachers and teacher educators have used this approach to address passive learning and to generate more participatory and interactive methodologies (Barkley, Cross, & Major, 2014). It also promotes the ability to be open to other opinions in order to construct knowledge (Luce, 2001). In general, collaborative learning has the potential to transform instruction by altering the relationship between learners and teachers, who engage students as active participants and co-creators of knowledge (Goodsell, 1992).

Although employed in many disciplines, collaborative learning is particularly applicable to music and music education. Because music itself is a socially mediated phenomenon, experiencing and making music together allows participants to create shared meanings as a result of social interactions (Small, 1999). Consequently, collaborative learning can be an effective tool in the development of pre-service

music teachers' skills to manage classroom settings, engage in innovative thinking, and learn to understand cultural differences (Gaunt and Westerlund, 2013). For example, Feen-Calligan & Matthews' (2016) study of music educators found that students participating in a collaborative arts-based service-learning project developed more effective lesson plans, improved their teaching skills, and increased their capacity for deeper and more critical reflective practices.

Educational or instructional technology including Internet tools, software applications, and mobile devices that integrate technological and pedagogical features offer a valuable complement to the teaching process (Dabbagh & Kitsantas, 2009; Funkhouser & Mouza, 2013). These tools can be used asynchronously when teachers and students interact in different times and places (e.g. web tools and software applications such as email, blogs, and Google Docs) or synchronously when students and teachers interact online together in real time (e.g., conferencing applications such as Google Hangouts or Zoom, instant messaging, etc.) (Dabbagh & Kitsantas, 2009). In-service teachers believe that using technology in the classroom benefits students' attention and perception skills, and that it improves students' ability to respond to, and to apply, knowledge in simulated environments. Yet, teachers tend to use technology mainly in low-level teaching and learning processes (Sangra & Gonzalex-Sanmaned, 2010). Teachers also find mobile technologies, such as tablets and smart phones, can be beneficial in enabling access to information, offering novel ways to learn, and fostering student interest (Domingo & Garagnté, 2006). Currently, students in higher education bring with them existing sociotechnical identities and practices and need opportunities to further develop these skills (Cronin, Cochrane, & Gordon, 2016).

Furthermore, current pre-service music teachers need opportunities to understand instructional technologies and improve their abilities to blend these innovations into their teaching practice (Moore et al., 2002). These abilities are essential in engaging students in music learning, creating, and sharing (Crawford, 2013). Through the use of student response technology, active collaborative learning promotes student engagement, enhances student learning (Blasco-Arcas, Buil, Hernández-Ortega, & Sese, 2013), and fosters a sense of interdependence and mutual respect (Cullen, Kullman, & Wild, 2013). There is, however, reluctance to favor technology-based instruction over traditional teaching methodologies (Digolo, Andang'o, & Katuli, 2011). In addition, teacher efficacy, or personal beliefs regarding one's capabilities to perform competently and effectively as a teacher or perceived confidence in one's ability to use technology, can vary greatly among pre-service teachers (Lemon & Garvis, 2016).

Although the use of online technology in a collaborative setting with pre-service music teachers has not been widely investigated, studies with pre-service teachers outside of music education have found that students valued multiple outcomes, including opportunities to work with the technology (Lautenbach, 2014), enhance their professional pedagogical knowledge and teaching facility (Arnold, Padilla, & Tunhikorn, 2009; Donnelly & Hume, 2015), and develop a sense of community (Kiliç and Gökdaş, 2014). More specifically, Lautenbach (2014) studied pre-service teachers participating in an online learning module centered around a variety of learning activities focusing on the use and integration of learning technologies to develop their technology skills. Student reflections demonstrated that they valued using the technology as tools for engaging in the modules, the opportunities for practical application, and the ability to share ideas with each other. In Donnelly and Hume's (2015) study, pre-service science teachers developed pedagogical content knowledge though developing wikis utilizing core representation design. This combination of collaboration and technology afforded the pre-service teachers with opportunities to develop subject matter knowledge, technological competencies, and instructional and assessment strategies. Similarly, Teo (2015) reported that pre-service teachers were open to new technologies and believed that developing technological skills are worthwhile and would benefit their future classrooms.

Collaboration between pre-service and in-service teachers through technology can also aid in developing teaching skills (Liu, Tsai, & Huang, 2015). Schmid and Hegelheimer (2014) found that when pre-service teachers and in-service teachers use computer-assisted language learning programs, pre-service teachers valued the opportunity to acquire specific technological skills and develop positive attitudes for using this technology in their future classrooms. Accordingly, the learners included teachers themselves as they engaged in collaborative professional development. Considering teaching scenarios as realistic music case studies, Ballantyne and Olm-Madden (2013) examined collaborative learning via an online learning resource. They found that participants were able to experience unfamiliar settings and contexts and to participate in discussions centering on sensitive topics in the relative shelter of an online environment. Additionally, the online environment allowed participants to build networks across wide geographical areas that, in turn, prevented the potential of professional isolation.

In these and related studies, researchers have investigated the importance and reported outcomes of collaborative learning for teachers. In particular, these teacher-education scholars have found multiple benefits in participant learning via online environments.

Consequently, we chose to further these ideas by examining undergraduate music education majors' perceptions regarding the development, implementation, and self-assessment of lesson plans via collaboration and instructional technology as part of their pre-professional curriculum at two separate universities.

For this mixed method study, our guiding question was: How do collaborative assignments facilitated by online technology influence music education majors' perception of educational technology, collaboration, and K-12 teaching pedagogies? We hypothesized that through this project participants would demonstrate gains in confidence integrating technology into their learning and into their future classrooms. Furthermore, the qualitative questionnaire allowed us to explore two research questions: (1) how did participants collaborate on the project assignments, and (2) what were their perceptions and experiences in working collaboratively through the use of online technology?

Methods

Participants

Twenty-two undergraduate music education majors ($n = 22$) from two separate universities participated in this eleven-week project. One university was a research institution ($n = 10$) located in the Midwest region of the United States, while the other was a Master's level comprehensive university located in the southeastern United States ($n = 12$). All participants were enrolled in a junior-level music education methods course in preparation for their student teaching. Over one-third of the participants, 39%, were male, and 56.5% were female; one participant (4.5%) did not indicate gender. The participants ranged in age from 20 to 42 years (M = 23.32, SD = 5.74). Ethnically, the participants identified themselves as 74% White American, 17% African American, 4.5% mixed race, and one participant, 4.5%, did not indicate ethnicity.

Measures

For data collection, we used separate quantitative and qualitative instruments. To provide quantitative data, participants completed the *Technology Integration Confidence Scale (TICS) version 1* (Browne, 2009) as both a pretest and posttest. This survey measures self-efficacy for using technology in educational setting and aligns with the International Society for Technology in Education's (ISTE) National Educational Technology Standards for Teachers (NETS-T). Comprised of 28 items, this instrument has seven subscales: Technology Operations and Concepts-Introductory, Technology Operations and Concepts-Continued Growth, Planning and Designing Learning Environments and Experiences, Teaching, Learning and the Curriculum, Assessment and Evaluation, Productivity and Professional Practice, and Social, Ethical, Legal, and Human Issues. For each item, respondents use a six-point continuum, with 0 indicating not confident at all, and 5 indicating completely confident.

To provide qualitative data, participants completed open-ended questions at the beginning, middle, and end of the project. These allowed participants to contribute as much detailed information about their experiences as they desired, and it also allowed for follow-up questions delivered via a learning management system (i. e., Blackboard) at the participants' home institutions. By responding to these quantitative and qualitative measures, participants reflected on collaboration, skill development, prior assumptions, lesson planning, and technology efficacy.

Project Description

One purpose of this project was to provide music education majors with realistic, collaborative learning experiences using enhanced online technology designed for teaching and learning purposes. Another purpose was to facilitate participants' practical experiences in teaching elementary-aged students. This project took the form of blended learning, a combination of face-to face instruction and collaboration via online technology (Digolo et al., 2011). After completing the IRB-approved consent forms from their home universities, participants engaged in collaborative assignments for eleven weeks.

As part of their regular class assignments, participants discussed common readings, compared professional music education standards, and investigated ways to incorporate measurement and evaluation in music instruction. Participant work products included written collaborative lesson plans, demonstration lesson presentations as peer-to-peer teaching, peer critiques of teaching videos and written work, and written reflections of both the educational process and pedagogical outcomes of this project. Because the instructors allowed the participants to decide when and how they would work together, the participants had ample liberty and autonomy in their approach to the tasks. For example, the participants frequently decided which online tools they would use and how they would complete the assignments. Participants chose to collaborate using synchronous and asynchronous platforms including blogs, Google tools, and Skype, as well as each university's Blackboard system. This approach provided the participants with an authentic context, as opposed to a controlled and artificial environment. This method also allowed for multiple data sources and contextual analysis of the interactions between the participants (Johnson & Christensen, 2014).

This project included four major activities: (1) introduction/reading assignment, (2) teaching video evaluation, (3) lesson plan writing, and (4) teaching. First, we asked participants to introduce themselves via Google Forum. This was the only time the researchers directed participants to use a particular technology. The introductions included sharing their musical, teaching, and technology backgrounds, as well as one non-musical fact about themselves. As an extension of the introductions, we assigned working groups of two or three participants (one or two from each university) to complete a reading assignment. Each participant independently completed a reflective reading assignment and answered questions drawn from *Music in Childhood* (Campbell & Scott-Kassner, 2014). They then shared their answers with their group members via Google Forum and wrote a one-paragraph response to each others' reflections. Their responses allowed them to reflect on the issues in the reading and to highlight points of concurrence and difference with their peers at the other university.

For the teaching video evaluation, we combined working groups from the previous activity, arranging participants into groups of between four and six members. Individually, participants viewed a video of a general music demonstration class and evaluated it using a published observation template (Conway & Hodgman, 2006). Next, they compared answers with their assigned groups, discussing and summarizing the different responses. Their instructions were to consider each other's perspectives carefully by examining four elements: similarities, differences, what they learned from others in their group, and how their group collaborated to complete the assignment. Each participant group independently decided which collaborative technology tools they would use to complete this assignment.

Then participants collaborated with their assigned groups from the previous activity to write one fifteen-minute lesson plan to accomplish the following objective for third-grade students: students will be able to expressively sing and/or expressively play an age-appropriate musical selection using a variety of dynamics and interpretation. Just as before, we allowed participants to choose their own online collaboration tools. In a virtual setting, they discussed the assigned objective and decided on corresponding instructional activities.

Finally, group members taught the lesson to their collegiate methods class at their home university. They shared a video of the lesson with their instructor and the rest of their group. After they viewed the other group members teaching the same lesson at their home university, participants wrote a critique celebrating strengths and making suggestions to address areas for improvement. After reviewing their critique, participants reviewed their video and wrote a two-page

self-reflection to address four components of their teaching and learning experiences: teaching practices, giving and accepting feedback, writing their lesson plan collaboratively, and sharing feedback. Finally, each participant group taught their lesson in the field under the supervision of a university professor or licensed professional music educator.

Data Analysis

For this mixed method study, we used a convergent parallel design, keeping the qualitative and quantitative data results independent and then comparing them when the project was complete (Creswell & Plano Clark, 2010). We analyzed the quantitative data statistically using *IBM SPSS Statistics* software (IBM, 2013). For the qualitative analysis, each author independently coded the written answers, recording in-vivo responses that described participant perceptions of their teaching and learning experiences. Then we jointly discussed the relationships among our respective in-vivo codes in order to identify themes. We analyzed these codes by using a constructivist approach to yield the final themes (Charmaz, 2006). When no substantive changes occurred during the coding process, we reached data saturation (Glaser & Strauss, 1967). Finally, to aid in organizing and understanding the data, we reviewed the data multiple times via memoing to further understand the participant responses (Maxwell, 2013).

Findings

For the quantitative portion of this study, we performed a paired t-test to investigate the changes from pretest to posttest scores on the TICS measure. Because the usual minimum for a sample size using this statistical procedure is 30 pairs of scores, these results of the paired t-tests should be interpreted with caution (Green & Salkind, 2014). Even so, the t-test results revealed trends from the two intact classes in this data set of 22 participants with a significant increase in the total technology integration confidence scores. More specifically, five of the seven subtests in this measure displayed growth: Technology Operations and Concepts-Continued Growth, Planning and Designing Learning Environments and Experiences, Teaching, Learning and the Curriculum, Assessment and Evaluation, and Social, Ethical, Legal, and Human Issues. The subscales of Technology Operations and Concepts-Introductory and Productivity and Professional Practice did not show changes in confidence. See Table 1 for a display of these results.

From the qualitative data we found four emergent themes: (1) versatility and potential of collaborating through technology, (2) barriers and challenges to effective communication, (3) importance of

Table 1
Technology Integration Confidence Scale (TICS) Scores

		Pre Project		Post Project			
		M	SD	M	SD	*t*	*p*
1.	Total Score	4.02	.52	4.40	.45	-4.13	.001
2.	Technology Operations and Concepts- Introductory knowledge	4.64	.64	4.84	.34	-1.67	.11
3.	Technology Operations and Concepts- Continued Growth	3.77	.95	4.25	.78	-2.87	.009
4.	Planning and Designing Learning Environments and Experiences	3.63	.82	4.18	0.58	-3.32	.003
5.	Teaching, Learning, and the Curriculum	3.60	.76	4.18	.69	-3.85	.001
6.	Assessment and Evaluation	3.43	.95	4.14	.60	-3.58	.002
7.	Productivity and Professional Practice	4.74	.35	4.63	.47	1.39	.18
8.	Social, Ethical, Legal, and Human Issues	3.78	.68	4.22	.66	-3.84	.001

collaborative communication, and (4) increased personal effectiveness through reflective growth. Below, we present the thematic categories along with representative quotations. We also identify common themes and underlying constructs across interviews.

Theme 1: Versatility and Potential for Collaborating through Technology

Throughout this project, participants were able to use any type of technology to communicate with their group members at the other university and as part of their lesson design. Participants reported communicating and sharing ideas through a variety of applications and programs including Google Docs, Google Hangouts, YouTube, iMovie, email, group texting, and telephone, as well as synchronous and asynchronous communication via Facebook tools.

It was important for participants to consider when and in what virtual space they could collaborate. Therefore, this theme also incorporates how participants prepared to collaborate with each other. For example, one participant described using email for more professional settings and Facebook for other purposes because she knew everyone would be using it. Many participants valued the ability to interact with each other asynchronously, via shared documents for convenience. Two participants explained how they used a variety of technologies while working on their project. One participant wrote:

[I used] strategies for contacting others in different ways; using a place where all members can see things that are posted, such as Google drive, is important so that no one is left out on updates, and contacting members individually with emails, phone calls, texts, and other methods is necessary.

Another participant emphasized the accessibility of content using online technology:

We used mostly Google docs in order to create [and] edit most of our ideas in one spot. We know it had to be a program that we could all access at any time without trying to rely on Skype or email in which not everyone is on or checks.

Participants also commented on ways they would and should incorporate technology in their lesson plans such as using YouTube or iMovie to demonstrate a concept to their students. One participant highlighted the importance of preparation and choice of technology to match assignments:

Be sure that the technology you incorporate is appropriate and functions correctly for each lesson. Be prepared to answer questions about the software or program being used. There are various ways to incorporate technology, and students love to participate in interactive activities.

The participants valued collaborating with technology as a way to connect with others to get information and ideas to use in their project and their future classrooms. One participant expressed how working together on the project helped shape her lesson plans: "Seeing how project team members approach this has given me new ideas for how to select goals for students."

Similarly, three participants expressed the value of collaboration with other teachers in their future teaching positions. One participant wrote, "Networking is a good tool for all educators. We all know so much. We have to be constantly willing to learn and absorb information and techniques from people that have a better grasp of something than we do." Another participant commented, "[Communication is] important in networking. Networking (so I've been told) can help in the long run when it comes to getting tips on how to plan lessons, assess or just in general for advice." A third participant wrote, "I would not mind collaborating [on] ideas on how to connect music to other subjects with teachers within my school. I may also brainstorm or collaborate with music teachers from surrounding schools." In that sense, learners include in-service as well as pre-service music teachers. Although the focus of the current study was on pre-service music teachers as learners, in-service teachers engage in collaborative learning as professional development.

Theme 2: Barriers and Challenges to Effective Communication

Barriers for effective communication centered around two ideas: the difficulty in communicating and unbalanced contributions from group members. Although participants did not report any barriers in accessing or using their chosen technologies, they did explain that some group members had differing views about which objectives or goals should be included in the lesson plan, as well as about the structure of the lesson plan itself. During this process, participants learned about the differences in state standards for teaching music education, and that different instructors have different ways of teaching the same concepts. As one participant explained, "I assumed that everyone would have similar ideas while lesson planning. This changed. Everyone has their own way of lesson planning." Similarly, another participant wrote:

I thought that since the class setting and idea about projects we'd be doing were the same, that the other students would step up to the plate and put forth the effort in collaborating in the projects. I was a little disappointed because they would collaborate at the last minute and they also had some confusing ideas on how lesson planning should progress and what would go into the teaching.

Additional barriers to communication included contacting group members and balancing other participants' schedules. The inability to gather for synchronous, virtual meetings led to confusion about what role each participant was to play in the project. Participants commented on the importance of finding time for collaboration. They reported that because they lacked face-to-face collaboration with each other, they did not have a sufficient interpersonal or emotional connection. Some participants also thought that, at four to six members, the groups were too large. Several commented that too many ideas clouded the process, and they were frustrated with some group members not doing their share of the work.

Both the inability to make time for collaboration and the lack of personal investment led to time management issues in two of the four groups. When encountering such difficulties, many participants reported that they developed new strategies to work together and to come to consensus. In particular, they commented on the importance of patience when working with others. Below, three participants discussed how they had to develop personal strategies for time management skills in order to communicate effectively with their group. One participant wrote:

I realized I needed to be confident with statements and assertive with my ideas for the group since it was already difficult to communicate. I had to be very clear when we did have the chance to. At first I was passive and that didn't work out. Once I got more assertive things worked out better for my participation in the group. At first it was very difficult for both parties to share ideas because we did not use enough methods of communication quickly enough. This improved over time, but I need to continue improving on this skill… to be confident and a leader… to listen and have open minded thoughts about ways I wouldn't necessarily do things.

Another participant reported learning:

… it is very key to make sure the method of communication is a good one in order to properly convey the right message and purpose about a lesson plan. Communication is key! It was hard at first to find a way to plan lessons online between six people.

A third participant commented on practical techniques for time management:

I realized that it is important to set up a strong timeline for getting activities done. In the future I will set clearer goals and checkpoints for myself

and for my students in order to achieve tasks in a more timely, organized fashion.

Theme 3: Importance of Collaborative Communication

During this project, participants experienced new ways to use a variety of communication tools. After completing the project, they commented on the value of communication and technology in working with colleagues and in teaching students. Generally, they reported on the importance of using collaborative tools in the classroom and working with other teachers. As their ability and confidence with technology grew, their online communication skills improved, and they became more open to using technology. They saw technology as a resource to use both in this project and in future endeavors. For example, one participant wrote about the increasing importance of technology for collaboration and use in the classroom: "Technology is becoming more essential every year, and technology is helpful with collaborating, especially when you can't meet face to face to produce a lesson."

Many participants commented on how they saw collaboration as a benefit to working with different types of people. Collaborating fostered an appreciation of their peers' backgrounds and teaching styles. For example, one participant articulated the variety of things learned from other participants by writing, "I have come to value what a great resource my peers are for their ideas, experiences, and philosophies. I learned that organization and communication are imperative to a successful collaboration." Another participant wrote:

> [My perspective] has evolved because I got to see ways of teaching that I wouldn't choose, but yet that were effective and still ways to successfully teach, and it opened my eyes to maybe making a few changes in my own approach.

A third participant wrote, "I've learned that people follow directions and become creative in their own ways. None of us in our group had the same exact thought process for our tasks but we all compromised together to get them done efficiently."

Theme 4: Increased Personal Effectiveness through Reflective Growth

Overall, the participants developed strategies to become more reflective practitioners. During this process, they considered their teaching performance and speculated on ways to improve their teaching in the future. Noticeably different from the responses at the beginning of this study, participant comments about the importance of reflection during the posttest phase showed the value of reflection in the educational process. Participants also commented on the relevance of recording themselves as they teach for later reflection. One participant wrote:

> When reflecting on my lessons after presenting them, the first thing I think about is if the learning goals were achieved. Did my students actually learn something? This project has given me a better understanding of the lesson planning process.

This project aided participants' understanding of, and confidence in, writing lesson plans. Participants commented that lesson plans needed to be easily understood, very detailed, and adapted to their particular students and educational setting. One participant wrote, "I've found that it is important to share ideas and lesson plans and build upon your own experiences by relating what you bring to your classroom to others experiences." Comments from three other participants illustrate similar points. One participant wrote:

> I have learned many new ways to go about lesson planning from observing my group and all the different ideas and ways of teaching. It helped me think more creative and come up with new ideas. I would have never thought of.

After reflection, another participant reported:

> I put more thought into the outcomes of the lesson. Also, I try to focus more on the elements of music that are being focused on through activities rather than trying to simply find enjoyable activities to do with the students. Collaborating made me focus more on the outcomes than the actual activity.

A third participant described the growth of his planning process:

> I begin with the goals/outcomes which students should learn from the lesson plan, and I try to vary these goals so that over time students learn a wide set of skills. Seeing how project team members approach this has given me new ideas for how to select goals for students. I did not know how much more helpful a lesson plan is when it is as detailed as possible. I used to think a more vague outline was good enough, but now I know better.

Participants also commented on how their self-confidence grew. For many, their future goal to become a music educator became stronger. For example, one participant wrote: "My perspective has matured more than anything, especially in understanding all of the

detailed work, time, and effort truly put into music education." Another participant noted the importance of networking and peer mentors:

> It is a good idea to collaborate with other pre-service and in-service teachers. As a future educator, I know that it is impossible to learn everything on your own or all at once. It is important to build a network of peers and mentors that can help you, because let's face it, we all need help at one point or another.

Discussion

The purpose of this inter-university study was to investigate undergraduate music education majors' perceptions of collaboration processes facilitated by educational technology. We designed group lesson-planning tasks to facilitate participant collaboration via instructional technology. Our intended learning outcomes were to enhance participants' application of theoretical and procedural knowledge in realistic, technology-based, and collaborative settings in order to promote elementary-aged student learning.

As demonstrated by the quantitative results from the TICS measure, participants' overall self-efficacy to use collaborative technology significantly improved. They gained confidence in planning and designing opportunities to collaborate and to create learning environments. More specifically, they learned how to align their lesson plans, teaching, and assessments with standards and curriculum. Consistent with Strobel and Tillberg-Webb (2009), we found that when participants reflected on their own perceptions of instructional technology, they reconsidered the benefits, uses, and disadvantages of these virtual tools as a result of their collaborative experiences. Their scores, however, did not demonstrate a meaningful change in the TICS subscale for Understanding Technological Operations-Introductory. Perhaps the reason for this lack of growth is because the majority of participants were Millennials, for whom technology has been present since birth. Although not statistically significant, there was also a downward trend for the subscale Productivity and Professional Practice from pretest to posttest. The questions in this subscale addressed their ability to work with other teachers in their future school environments. This decline is congruent with the struggles that many participants reported in the qualitative data.

The qualitative portion of this study yielded insights into how the participants viewed the collaborative lesson-planning project. Participants were comfortable deciding on the types of technology they would use through the project, gravitating towards asynchronous methods where participants could engage online during times of their own choosing. Asynchronous tools, however, were not always successful for the collaborative process as some participants felt other group members did not contribute equally or in a timely manner. Similar to the findings reported by Lee, Tsai, Chai, and Koh (2014), participants in the current study reported that their collaboration was difficult and challenging because they did not meet each other face-to-face. Similarly, Donnelly and Hume's (2015) study reported that pre-service teachers preferred face-to-face interactions when collaboratively developing teaching practices.

Regarding other challenges, participants commented on the high level of communication required, which was not readily addressed by online technology. Participant comments revealed frustration with establishing a consensus on the content and developing the lessons plans. They also reported discomfort with the process of discourse, and they struggled with openness to others' opinions. A few participants also expressed concerns regarding how instructors evaluated group work and if others' lack of contribution would affect their course grades. On a positive note, participants began to develop more productive strategies such as patience, self-confidence, time management, and communication skills through the process of working with others in group settings.

Overall, participants reported that this project helped them develop skills that they could use in their future classrooms. Many became more open to using technology for communicating and for supporting learning in their future classrooms. They saw the value of collaborating online to improve their lesson planning and recognized the value of communication in terms of curriculum and instructional effectiveness. They also recognized the importance of collaborative online learning as it helped them solidify their understanding, engage with new ideas, and value others' contributions to the learning process. In addition, participants reported enhanced interpersonal skills related to teaching, such as listening and being open minded to constructive criticism. During the group work, they commented that they valued sharing knowledge and clarifying their thinking. Specifically, participants characterized how important clarity and flexibility were to achieving a common goal. From a metacognitive perspective, these processes helped participants become more successful music educators by reflecting on their own learning and building confidence in their own teaching.

Conclusion

Outcomes of this study highlight the importance of developing collaborative skills in pre-service music teachers. These are consistent with the requirements for teachers to work in collegial teams and to apply principles

and practices of group work competently in the classroom (de Jong et al., 2011). Other results of this study relevant to teacher education and online collaboration include identifying broadly-applicable strategies to instruct, motivate, and evaluate pre-service music teachers as they develop 21st century skills and music teaching competencies. Beyond music, the implications of this study apply to teacher education in other fields. For example, the results support the use of collaborative learning to promote teachers' lifelong professional development. Potential outcomes of collaborative learning facilitated by technology reflect the growing importance of being professionally flexible, of engaging in new situations imaginatively, of interacting empathetically in unfamiliar social contexts, and of cooperating beyond familiar geographical boundaries.

The pre-service teachers chose to use predominantly information management tools to aid in designing the lesson plan and communicating with each other. They rarely used applications specifically designed for music such as music notation, and/or composition software in this project. With the exception of YouTube and iMovie, they rarely used technologies for content delivery to engage K-12 learners in lessons. The pre-service teachers preferred to use more traditional techniques such as modeling and directed response activities. Participants may have favored these because their lesson plans required the K-12 students (third graders) to demonstrate performance skills in music. Future projects and pedagogical instruction could focus on effective ways pre-service teachers incorporate discipline specific software in their future music classroom instruction.

Although participants completed multiple tasks, the scope of this study was limited to one project. Our findings were also based on participants' self-reports. As both authors were the professors of record and we chose to incorporate collaborative learning into our courses, we may have a bias towards our results. Additionally, the quantitative trends should be carefully interpreted in view of the relatively small sample size. Despite these limitations, our findings strongly support collaborative online learning as a valuable component of pre-professional pedagogy. To further our understanding of collaborative processes utilizing educational technology, future research in Instructional Learning Technology (ILT) and web-based pedagogical tools (WBPT) might include the following: investigating how the technology-based communication habits of millennial participants impacts their use of instructional technology, understanding how technology shapes participant interactions inside and outside the classroom, gauging the level of support needed to facilitate effective web-based pedagogy, and developing pedagogical tasks that promote self-regulated learning (Dabbagh & Kitsantas, 2013; Resta & Laferrière, 2007).

Many of our findings apply to the development of collaboration and technology skills of in-service teachers and in other academic domains. Additionally, the results of this study highlight the importance of extending successful pedagogical approaches from the K-12 level to college education. By extending effective, collaborative strategies in the primary and secondary grades, tertiary instructors can continue to engage and involve their students using similar interactive techniques while taking advantage of technological enhancements (Schmid & Hegelheimer, 2014). Findings of our study also apply to teacher-educators and professional development leaders in general. These results provide guidance to identify instructional and motivational strategies for teachers as they develop pedagogical proficiencies.

Even though joint-authored research in higher education has been more common in scientific disciplines than in the humanities (Schoenfeld & Magnan, 1994), this co-authored, multi-campus study also demonstrates the value of a collaborative approach to research. By combining our pedagogical perspectives and contrasting university contexts, the resulting research yielded a richer and more informative analysis of our students' experiences with the project. As Austin and Baldwin (1991) wrote, this approach may also enrich intellectual curiosity, promote publications, and further specialized knowledge.

In particular, our findings suggest that pre-service teachers need more opportunities to participate in collaborative work. Courses that utilize online collaborations should incorporate an introduction to on-line collaborative tools, as well as scaffolded assignments to develop students' collaboration skills (e.g., determining roles within groups and practicing habits such as open-mindedness). Similarly, orientation assignments should include opportunities for group discussion to strategize for optimal contributions to the group (e.g., goal setting, time management, and communication/listening skills). Furthermore, we recommend incorporating dedicated, synchronous time with an instructor's guidance to help students develop working relationships with each other. In conclusion, future investigations may aid in understanding how teachers utilize instructional technology to promote collaboration and other 21st century skills.

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"I Don't Know Why I'm Learning This": Preservice English Teachers' Engagement in a Language Development Course

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Despite the increase of English learners in the U.S. and of standards for linguistically responsive teaching practices, teacher education programs often fall short of preparing preservice teachers to teach diverse learners. In this case study, specifically designed to improve a pedagogical course on English language development, the researchers used qualitative methods to examine preservice English teachers' perceptions of, and engagement in, instructional pedagogies that were designed to support their learning and apply to their current practicum experiences and teaching careers. Data were collected using observation, survey, and interview methods and were analyzed inductively. Findings indicate that preservice teachers were most engaged when course content was explicitly linked to their teaching experiences and least engaged when those connections were not made evident. The researchers argue that a lack of explicit connections between teacher preparation course content and K-12 classroom pedagogy influences preservice teachers' perceptions of the value of course content to pedagogy and hinders their linguistically responsive preparedness to teach diverse learners. Implications for teacher preparation course design are proffered.

High-quality teacher preparation courses are essential to preparing preservice teachers to teach diverse K-12 learners (Jiménez & Rose, 2010), but preparedness for teaching is unlikely to develop in preservice teachers who perceive their teacher preparation courses to be irrelevant to their current teaching experiences or future careers as teachers. This was the problem we faced. By and large our preservice secondary English teachers believed the program's English language development, acquisition, and pedagogy (ELDAP) course was unrelated to their practicum and student teaching experiences in local schools. Audrey, a second-year preservice English teacher, explained:

> …I wasn't engaged in [the readings and course] because I didn't feel like they were necessarily gonna apply to me…I don't know how [small group activities] applied to what we were doing. I understand we were learning, like, where language comes from, but I don't know how me recognizing that is gonna be useful in the future.

Audrey's perspective reflected what many of our students believed: the ELDAP course was not applicable to their current teaching experiences or future teaching careers. Consequently, the students were not engaged in the course and participated minimally.

Scholarship in the field of teacher education indicates that preservice teachers often cannot articulate the purpose of course content or the rationale for pedagogy (Whitney, Olan, & Fredricksen, 2013). They express discontent with complex course content and a perceived lack of application to their field experiences. In addition, preservice teachers indicate that they often do not feel prepared to work with diverse learners in the field

(Whitney et al., 2013). This is particularly troubling given the growing number of English learners (ELs; i.e., students for whom English is not their first or native language) that are being educated in U.S. schools. In academic year 2012-2013, 4.4 million students were ELs, compared to 4.1 million in 2002-2003, and 2.8 million in 1993 (National Center for Education Statistics, 2015). Given these statistics, it is imperative that teacher preparation programs carefully design coursework to better prepare preservice teachers to meet the instructional needs of these diverse learners (Mayher, 2012).

Many in-service teachers who work with ELs do not feel well-prepared to teach them (National Center for Education Statistics, 2002). Research has not yet determined how best to prepare teachers to teach ELs (Sleeter, 2008), and, consequently, teacher education programs often fall short of preparing preservice teachers to work with diverse learners (He, Vetter & Fairbanks, 2014; Mayher, 2012). Jiménez and Rose (2010) suggest that many novice teachers begin their careers without the knowledge and skills they need to work with ELs, or they see ELs from a deficit perspective, underestimating these students' knowledge, skills, and aptitude for learning. Linguistic differences prove to be particularly challenging for preservice teachers (Jiménez & Rose, 2010) because linguistic differences have both academic and social implications. For example, preservice teachers must scaffold ELs' learning of complex academic content and help them to get involved in the social milieu of classroom activities while the students' English language skills are still developing.

Because of the linguistic challenges preservice teachers face in K-12 teaching, Lucas, Villegas, and Freedson-Gonzalez (2008) proposed that teacher education programs help preservice teachers become

linguistically responsive in order to address diverse students' needs.   Linguistically responsive teaching involves an understanding of the social uses of language, as well as its linguistic forms (Lucas et al., 2008). The National Council of Teachers of English (NCTE) also advocates for linguistically responsive teaching.   In their Conference on English Education (CEE) Position Statement (2009), *Supporting Linguistically and Culturally Diverse Learners in English Education*, NCTE asserts that educators play an important role in perpetuating or preventing the inequities diverse students face. The position statement highlights eight principles for supporting diverse learners, which can be incorporated into teacher education programs. Of these eight principles, several directly address how teachers can develop linguistic responsiveness: recognizing students' "culturally defined identities"; actively learning sociolinguistics to develop awareness of language inequalities; being models of culturally and socially responsible practices; and recognizing, supporting, and valuing the linguistic validity of students' home languages (CEE, 2009).

Statement of the Problem

The secondary English education teacher preparation program at our university has embraced a linguistically responsive teaching framework, which is particularly emphasized in the required 3-credit-hour ELDAP course.   However, as mentioned previously, many of our preservice teachers expressed dissatisfaction with the course and were not engaged in course content or related activities. As teacher educators, we were faced with the challenge of preparing these future English teachers to teach the complex nuances of English to adolescents, both native English speakers and ELs. To do so effectively, we had to figure out a way to engage students   in   course   content   and   motivate   their participation in class activities and assignments.

Purpose of the Study

We designed a semester-long qualitative case study (Barone, 2011) to examine the nature of our preservice teachers' engagement and participation in the ELDAP course. Our research goals were practical in nature (see Maxwell, 2013): (1) to identify the instructional pedagogies that preservice teachers perceived to be most supportive   of   their   professional   development   and applicable to their current and future teaching careers, and (2) to improve the ELDAP course curriculum and related instructional activities in light of the study's findings. In this article, we report the outcomes of our case study.

In the sections that follow, we first draw on the linguistically responsive teaching framework and national organizations' standards to provide a context for our case study.   Second, we explain the data collection and analysis procedures   we   used   to   examine   preservice   teachers' perceptions of, and engagement in, the ELDAP course. We then report our findings and interrogate those results in light of   the   linguistically   responsive   teaching   framework. Finally, we consider the implications of our findings, particularly in terms of improving our ELDAP course and supporting our students' understandings of the connections between teacher preparation coursework and their future teaching careers.

Theoretical Framework and Related Literature

In the United States, there is an increasing need for preservice teachers to learn how to teach diverse students (Jiménez & Rose, 2010; Mayher, 2012). He and colleagues (2014) argue that beginning teachers can learn to teach all diverse students by learning about students' cultural lives and how to use multilingual strategies in the classroom. This learning should occur primarily through teacher preparation programs and related practicum experiences. As Mayher (2012) suggests, when we fail to focus on diverse pupils in teacher education courses, "we fail to provide our students with the knowledge and skills they need to deal with *all* the pupils they will encounter [emphasis in original]" (p. 183).

Linguistically responsive teaching is a pedagogical framework that positions teachers to address language differences in the classroom. This framework involves (1) understanding and responding appropriately to social uses of language   (whether   conversational   or   academic),   (2) providing students a safe and welcoming environment, and (3) explicit attention to linguistic forms and conventions (Lucas et al., 2008, p. 363). Knowledge and understanding of language acquisition and development fosters teachers' sensitivity to language issues in the classroom (Giambo & Szecsi,   2005).   Moreover,   a   linguistically   responsive teaching framework posits that students' second language acquisition is rooted in participation and identity and that to support students' acquisition and development of English, teachers must build on students' background knowledge and experiences (see Faltis, Arias, & Ramírez-Marín, 2010, p. 315).   With   the   increase   of   diverse   students   in   K-12 classrooms in the U.S., it is more important than ever that preservice   teachers   learn   to   use   culturally/linguistically responsive   pedagogies.   However,   teacher   education programs are not always making explicit the importance of culturally and linguistically responsive teaching (He et al., 2014; Jiménez & Rose, 2010; Mayher, 2012).

Importance of English Language Development and Acquisition Content Knowledge

In   order   to   work   with   both   ELs   and   native speakers, preservice teachers need an understanding of English   language   development   and   second   language

acquisition. Giambo and Szecsi (2005) found that there is a positive correlation between teachers' professional sensitivity to language issues in the classroom and their exposure to diversity issues. Increased exposure to diversity training in teacher education is positively related to increased sensitivity to diverse learners. The *Guidelines for the Preparation of Teachers of English Language Arts* (NCTE, 2006), lists language development, language history, and language analysis as essential knowledge bases for effective instructional planning and pedagogy. For example, the *Guidelines* suggest that preservice teachers be able to:

> Define and describe the implications for practice of diverse theories of language acquisition and development. For example, they should be able to describe and apply the fundamental principles and characteristics of human growth from infancy through adulthood (p. 23).

With regard to language history and analysis, the *Guidelines* suggest that preservice teachers be able to explain major developments in the history of English as well as the language systems (pragmatic, semantic, grammar, etc.) and dynamic nature of language.

Faltis, Arias, and Ramírez-Marín (2010) identified a variety of skill and knowledge competencies secondary education teachers need in order to effectively teach ELs, including: (a) understanding second language acquisition as participation and identity; (b) planning for and using theme-based content where concepts, genres, and specialized vocabulary are spiraled and used in multiple ways; (c) building on students' background knowledge and experiences; (d) knowing and advocating for legal rights of ELs; (e) adjusting instruction for variation in schooling experiences of ELs; and (f) mixing ELs with native English speakers to ensure social and academic integration (p. 315).

Importance of Coursework and Field Experiences

Teacher preparation coursework and field experiences play an important role in preparing preservice teachers for linguistically and culturally responsive teaching. The NCTE CEE Position Statement (2005), *What Do We Know and Believe about the Roles of Methods Courses and Field Experiences in English Education?,* argues that teacher preparation in the English language arts must "infuse core principles of content, pedagogy and professionalism" and offer students opportunities for "practice, reflection, and growth." Students should be invited to examine and question the content of their coursework and consider how it can be applied to comtemporary instructional settings.

Whitney and colleagues (2013) argue that preservice teachers need to understand how to articulate "…pedagogical principles that carry across a range of specific classroom situations" (p. 190) and expand their perspective of experience. These researchers write, "[Preservice teachers] tend to use practicality as a filter for making decisions about what to pay attention to in their development as a teacher" (p. 185). In other words, preservice teachers primarily rely on teaching experience to inform their pedagogy rather than also drawing on teacher preparation coursework and their experience as students, readers, and lesson planners. Whitney and colleagues (2013) question whether teacher educators are encouraging preservice teachers to examine all of these experiences as influential to their teaching.

Scholarship in the field demonstrates that preservice English teachers are expected to be linguistically and culturally responsive as they teach diverse K-12 learners, develop a strong knowledge base in English language development and second language acquisition, and be able to articulate and apply their knowledge and skills to their teaching context. A lack of understanding about the connections among teacher preparation coursework, preservice field experiences, and K-12 classroom instruction may hinder preservice teachers' preparedness to teach diverse learners.

Method

Setting and Participants

We conducted a qualitative case study (Yin, 2014) within the context of a preservice teacher preparation course required of all secondary English education majors. The ELDAP course focused on characteristics of English language development in adolescents and addressed acquisition theories, language systems (semantics, pragmatics, phonology, etc.), and language variations. The course was designed to help preservice teachers understand adolescents' English language development, with a special focus on ELs. A primary objective of the course was for preservice teachers to appropriate course content and apply it to instructional pedagogies in the English/language arts program (see Appendix A for course description and objectives). The ELDAP course was one of several courses designed to prepare preservice teachers for linguistically and culturally responsive teaching; preservice teachers in the program also enrolled in two cultural studies courses (i.e., courses that examine culture's influence on everyday literacy), three English/language arts methods courses, and one course focused on teaching and learning in diverse classrooms. Advisors in the program typically recommended that students take the ELDAP course the semester before

graduation; however, students tended to take the course in the semester most convenient to their schedules.

The preservice teachers were in various stages of their program (from practicum experiences to student teaching), including four post-baccalaureate students. Preservice teachers in their first practicum at our university are responsible for completing 70 hours of classroom participation that includes (a) engagement in eight lesson segments (i.e., teaching small groups or mini-lessons), and (b) teaching two lessons designed in cooperation with the mentor teacher. Preservice teachers in their final student teaching experience take on full responsibility as the teacher in three bell periods and engage in all activities expected of teachers at their placement school. They are transitioned into this role through two semesters of gradual acquisition of teaching responsibilities. This final semester of student teaching is taken in conjunction with advanced methods courses and the state assessment for those applying for their first license. Considering the vast differences in experience between beginning practicum preservice teachers and student teachers, the ELDAP course instructor had the unique challenge of conveying content to students with varying knowledge about being a teacher.

The ELDAP course met once per week for approximately 3 hours across a 15-week semester. A majority of the 30 preservice teachers enrolled in the course were secondary English education majors; however, several students were in the middle-childhood education program. Most of the preservice teachers were white, female, and in their twenties. At our university, preservice teachers are grouped into cohorts and take core courses together. Several cohort groups were enrolled in the ELDAP course, and students tended to sit together in cohorts. During the semester of our study, an adjunct instructor taught the course. While she specialized in second language studies, she had no previous experience teaching the ELDAP course.

Research Questions

Our data collection and analysis procedures were guided by two primary research questions:

1. What content and instructional pedagogies do preservice teachers perceive to be most supportive of their learning?
2. What content and instructional pedagogies do preservice teachers perceive to be most applicable to their teaching (current and/or future)?

Data Collection and Analysis Procedures

We collected three sources of data for this study: (a) online survey, (b) interview, and (c) field notes from in-class observations. Selena, the doctoral student researcher and first author on this paper, collected all of the data.

Survey. The online survey, completed in week nine of the course, had four respondents. Two of these preservice teachers had approximately two years of field experience, and the other two had less than a year of field experience. Three of the four respondents indicated that they had no prior experience working with ELs. The survey consisted of 10 questions addressing preservice teachers' (a) experiences with ELs, (b) expectations for the course, (c) perceptions of the importance of learning about English language development, (d) perceptions of the importance of the course objectives, and (e) level of agreement with statements about course components (e.g., I read the assigned course text each week; The class lectures are helping me to learn course content; see Appendix B for full survey). The survey was built on Survey Monkey; a survey link was sent to preservice teachers via the Announcement feature on the Blackboard Learning Management System. An announcement also was made in the class session before the survey link was sent. Preservice teachers had two weeks to respond to the survey, during which two reminder emails were sent.

Interview. An interview was conducted in week thirteen of the course. Only one female student, Audrey (a pseudonym), agreed to participate in an interview. Audrey was a second-year undergraduate student in the secondary English education program with less than one year of practicum experience. The semi-structured interview (DiCicco-Bloom & Crabtree, 2006) investigated Audrey's perceptions of the instructional pedagogies and activities that were most supportive of, or applicable to, her learning and teaching. The interview was conducted informally in a quiet student lounge in a university administrative building and lasted approximately 50 minutes. It was recorded on two password-protected devices and saved as files without identifying information. The interview was transcribed during data analysis.

Observations. During weeks 9-15 of the course, Selena completed seven in-class observations, approximately 3 hours each. For each observation, she wrote field notes on preservice teachers' engagement behaviors during each component of the class session (i.e., lecture, small group work, and video) in order to identify activities that appeared to engage preservice teachers and presumably support student learning. Engaged behaviors included paying attention, answering or asking questions, and participating in discussion and activities. Selena also documented the instructional pedagogy being used and the content being addressed during each session component. Selena observed Audrey, who had participated in the interview, and the entire group of students in consecutive 5-minute intervals.

Analysis Procedures. We analyzed the data at the end of the semester using qualitative content analysis (Hoffman, Wilson, Martinez, & Sailors, 2011). Qualitative content analysis allows researchers to interpret meaning from a variety of data sources using a systematic process of coding and categorizing textual data in order to identify patterns or themes (Hsieh & Shannon, 2005). Patton (2002) argues that important insights surface when more than one researcher examines the same set of data, so each of us analyzed the survey and interview data separately and then compared our analyses. First, we read the entire data corpus to get a sense of the whole, and then we re-read searching for key concepts, which we highlighted. For example, in both the survey and interview data, students indicated that "application" of course content to their field experiences was particularly important to them, so we highlighted application as a theme. Then, we searched the field notes from in-class observations for evidence to corroborate the themes we identified in the survey and interview data. The themes that emerged were grounded in evidence from all three data sources and reflected the preservice teachers' perceptions of the instructional pedagogies used in the ELDAP course that were most supportive of their learning and applicable to their teaching. In the sections below, we discuss those themes and proffer implications for course design, pedagogy, and practice in similar preservice teacher education ELDAP courses.

Findings

The results of our analysis fell broadly into three major categories that addressed our research questions and revealed preservice teachers' perspectives on, and engagement in, the ELDAP course: (a) course pedagogies, (b) course readings, and (c) connections to teaching. Specific findings for each category are reported in the sections that follow.

Course Pedagogies

Preservice teachers reported being most engaged and demonstrated the most engaged behaviors when the instructor used digital technologies, lectures, and group presentations to deliver course content. Class discussions around videos were particularly useful in helping preservice teachers to articulate their developing understandings of linguistically responsive teaching and what it means to respond with sensitivity to adolescents' language use in all of its forms. For example, preservice teachers found McWhorter's (2013) TED talk, *Txtng is killing language. JK!!!*, particularly engaging. In this video, McWhorter examines texting as a new language that adds to adolescents' linguistic repertoires. After the video,

preservice teachers debated the legitimacy of texting as a language and possible uses of texting in the academic setting, such as "translating" text messages into academic language. Preservice teachers referenced specific experiences from their current teaching contexts to support their views. Preservice teachers also found engaging the videos that discussed particular strategies for accommodating ELs in the high school classroom; these videos were a direct connection to their teaching. The importance of the videos is highlighted in Audrey's interview:

> …[S]eeing it actually happening in the classroom to me is helpful … because I don't have a ton of familiarity with second language learning…, so I really liked seeing the different approaches they were taking and how they were teaching kids that were struggling with language. The differences.

The use of other digital technologies also increased students' engagement in course content and related activities. For example, in a small-group presentation, one preservice teacher group used the interactive online tool, Nearpod (2015), to live-poll the class about aspects of teaching ELs. Preservice teachers anonymously responded to the poll questions on their phones and laptops, and the responses were displayed immediately on the projector at the front of the room. They then discussed linguistically responsive teaching practices, such as establishing a welcoming environment or understanding how to teach vocabulary to ELs, based on the responses in the live poll. Technology-mediated pedagogy and the group presentation setting engaged these preservice teachers in making pedagogical connections. Interestingly, Audrey indicated that she found the online discussion board prompts on the Blackboard Learning Management System to be engaging because she "enjoyed reading other people's responses [outside of class] and seeing how they felt about things."

Preservice teachers also reported that the instructor's lectures were supportive of their learning, especially when the content directly connected to teaching or could easily be applied to teaching, and particularly when the instructor incorporated PowerPoint presentations. Observations revealed that preservice teachers were most engaged in lectures that examined (a) how to address common grammar mistakes in the classroom; (b) parts of speech, particularly the FANBOYS acronym for coordinating conjunctions (For, And, Nor, But, Or, Yet, So); and (c) language and social variations (e.g., formal, informal, accents, dialects). Preservice teachers were least engaged in lectures related to linguistics (e.g., morphology, phonology), the history of English, and differences between animal and human languages (which the instructor used to introduce the unique qualities of

human language). Audrey's interview is illustrative in this respect: she suggested that content about linguistics was pertinent for EL teachers but not for her, although she allowed that information about strategies that helped students "spell a word…could be useful."

Students in the course were required to do two group presentations: a content presentation and a teaching tip presentation. Both the survey and observation data demonstrated that group presentations were engaging to these preservice teachers; in fact, observation data revealed that students were consistently attentive during group presentations. Audrey described group presentations as "like putting what we learned into…an application." Students also participated in several small-group activities per class session, from worksheets (e.g., "Break Down the Morphemes" or "Translate This Sentence to Another Variation") to discussion questions (e.g., What happens to students when we tell them their language use is incorrect?). However, field notes documented both engaged and off-task behaviors during these small-group activities, often depending on the topic's connection to the students' teaching experiences. For example, preservice teachers were more engaged when discussing teaching experiences related to teaching adolescent writing. Although the students sometimes conversed socially during small-group activities, each small group's contribution during the whole group discussion helped students to articulate and share their understanding of both content and linguistically responsive teaching practices, especially when those connections were made explicit.

Course Readings

Our analysis indicated that preservice teachers perceived the assigned reading (e.g., journal articles, book chapters), and especially the required textbooks, to be unnecessary. Students reported that they did not read the texts because they believed the instructor's lectures were repetitive of the assigned reading. Students also believed that the required readings were unrelated to teaching. Audrey explained:

…[I]f [the instructor] puts [the textbook content] in her PowerPoint, then I'm not really getting anything from the readings. I don't see a point in reading if [the instructor is] just going to tell me everything… I wasn't engaged in [the readings and course] because I didn't feel like they were necessarily gonna apply to me.

Audrey also noted that she felt the textbooks were more appropriate for ESL teachers or linguists. The data we collected on course readings was limited, but it highlights how an instructor's choice of text, and how the text is

integrated into course assignments and activities, may impact how preservice teachers engage in content.

Connections to Teaching

Throughout our content analysis, the evidence demonstrated that preservice teachers expressed a need for the instructor to make explicit connections between ELDAP course content and classroom teaching. For example, on the survey, one preservice teacher wrote:

I have really struggled to see how this course will be applicable to my teaching in the classroom. I think the professor could do a much better job of bridging that gap…There seems to be a lot of theory, so far, and VERY little real world application of concepts.

Similarly, in her interview, Audrey said:

Teaching 'this is what a morpheme is'…then instead of just, like, emphasizing the linguistic part of it, which I feel like what [the instructor] is doing, [she could have been] saying 'Okay, we learned this, but this is what you can do in your classroom. This is…how you can help your students…When I found out that it was all education people in [the course], then I was like 'Oh, then I wonder why they're not making that connection more obvious?'

Students expressed particular interest in, and the need for, information related to teaching ELs. Several comments from survey data demonstrated this point. One student said, "I like how we've been learning about ELs and how to help them lately. I think this is most applicable to me." Another wrote, "Understanding English language development will help me teach my EL students by better understanding their backgrounds and needs educationally. This will help ensure that I have the available resources for them to be successful."

Our analysis also suggested that preservice teachers did not understand how the ELDAP course related to teaching English/language arts or why it was required in their program of study; they did not understand the overall purpose of the course. The ELDAP course was designed to help preservice teachers understand English language development in adolescents, with a special focus on ELs' language acquisition, and apply this understanding to pedagogical decisions. However, these goals were not clear to some of the preservice teachers. Only one of the four survey respondents mentioned that the course addressed language development in native speakers as well as ELs. Audrey thought the course was designed for ESL, elementary school, or inner city teachers. She

said repeatedly that she did not see how the course was relevant to her. When discussing the texts for the course, Audrey said:

> I think [an education book] would be more helpful in like teaching me what to do when I have those kinds of students. I don't know if that's really like what this course is; the course is more how to learn language. I mean, a development class. I don't know.

This finding—that our students did not understand the overall purpose of the ELDAP course—provided a contextual understanding, a kind of "local casualty," that shed light on the other outcomes of our study (see Maxwell, 2013, p. 88).

Each of the findings of our study holds important implications for pedagogy, most particularly in terms of improving the ELDAP course at our university. Although our results are not generalizable, these findings may also be useful to teacher educators who teach similar English language development, acquisition, and pedgogy courses or prepare preservice teachers for culturally and linguistically responsive teaching. We discuss the implications of our study in the final section of this paper.

Discussion and Implications

A lack of explicitness about the connection between the content, assigned reading, and related activities in the ELDAP course and English/language arts instruction in school settings contributed to our preservice teachers' misconceptions about the value of the ELDAP course for their professional development as teachers, and this may have hindered their growth toward culturally and linguistically responsive teaching. The findings of our case study support this argument. Preservice teachers in our study needed the instructor to clearly explicate the ways in which knowledge and understandings about language acquisition and development were relevant and applicable, not only to their current field experiences, but also to their future careers as middle school and high school English teachers and teachers who might have ELs in their classrooms. Further, preservice teachers needed differentiated instruction based on their levels of field experience. Perhaps they would have found value in the content if they understood specifically how it related to their current field experience. For example, some preservice teachers did not have any experience with ELs; their integration of content and teaching, then, might have been less than those who had the opportunity to apply what they learned immediately in their field experiences. Similarly, preservice teachers needed the instructor to make overt and unambiguous links between the content of this course and culturally and linguistically responsive teaching (Lucas et al., 2008). Even as young

adults, these preservice teachers needed explicit instruction. This finding should not be surprising; for years, research has demonstrated the importance of explicit instruction to students' learning (e.g., De la Paz & Graham, 2002; James, Abbott, & Greenwood, 2001; Schorzman & Cheek, 2004; Smith, 2006).

Explicit instruction in this college classroom was often mediated by technology. The instructor typically used videos and PowerPoint presentations to deliver course content, and preservice teachers used various digital technologies in their group presentations (e.g., Nearpod). We would argue that the use of technology-mediated instruction supported students' engagement, participation, and, ultimately, their learning. At a time when some scholars argue that many adolescents and young adults can be considered "digital natives" (Hargittai, 2010; Prensky, 2009)—acquiring fluency with digital technologies in much the same way they acquire language—educators will want to build on preservice teachers' penchant for digital technologies and use them to communicate course content and curriculum. However, technology can only mediate learning if students are engaged in the learning process. For example, one of the course textbooks was offered in an online format, but students did not read it because they believed it was not relevant to their teaching experiences.

Explicit instruction about the overall purpose of the ELDAP course, its goals and objectives, and its importance within the students' teacher preparation program also was needed. Preservice teachers need to be able to explain why an ELDAP course is important to their professional development as teachers and how it supports their growth toward culturally and linguistically responsive teaching, an important reflection for preservice teachers to make as they plan lessons (NCTE, 2006; NCTE CEE, 2014). Moreover, academic advisors, mentors, and ELDAP course instructors must be explicit about the ways in which the ELDAP curriculum complements the methods courses and other diversity-oriented courses in the program of study. Furthermore, it may be informative for preservice teachers to understand the expectations of their field with regard to culturally and linguistically responsive instruction. Sharing with preservice teachers the CEE's (2006) *Supporting Linguistically and Culturally Diverse Learners in English Education*, Faltis and colleagues (2010) list of competencies secondary education teachers need to acquire to effectively teach ELs, as well as Lucas and colleagues' (2008) list of linguistically responsive teaching practices may serve to build preservice teachers' recognition of the importance of the ELDAP course.

The findings of our study must be viewed with caution, however, given the study's limitations. Only four students responded to the online survey, and only one student participated in the interview; the data corpus

was limited. Nevertheless, we believe our findings will help us to achieve our practical goal (see Maxwell, 2013) of improving our university's ELDAP course and, in particular, better support our students' preparedness for culturally and linguistically responsive teaching.

Next Steps

We concluded that a lack of explicitness about the connections between the ELDAP course and English/language arts instruction in school settings contributed to our preservice teachers' misconceptions about the value of the ELDAP course and may have hindered their linguistically responsive preparedness to work with diverse learners. To remedy that situation, in a subsequent section of this course, we engaged in the kinds of explicit instruction we advocate in this paper. We asked preservice teachers to keep a teaching journal in which they recorded questions, and answers to those questions, about ELDAP course content (including course readings) and related activities. In these weekly journals, we asked preservice teachers to reflect on their developing understandings of what it means to teach with cultural and linguistic sensitivity with students who are native English speakers and ELs (see Lysaker & Thompson, 2013). We also asked preservice teachers to articulate the connections they were making between ELDAP course content and their field experiences (Whitney et al., 2013). We invited preservice teachers to question content in class (i.e., asking, "So what?," about content) and to engage in varied group work in which students from varying levels of field experiences could discuss how content applied to them. We encouraged their emerging connections between ELDAP content and what they were learning in other courses. We asked them to go through standards in their field and explicitly discuss, for example, which instructional strategies could be realistically used in the classroom to meet those expectations. We asked preservice teachers to explicitly consider this: if they could not apply content to their present situation, how they might use the resources from this course to apply ELDAP content to their future teaching? We asked them to observe a classroom of ELs at our university and reflect on the activities observed, the learning environment, and the actions of the cooperating teacher that they could implement in their own teaching. We believe these efforts will serve to better prepare our preservice teachers to be culturally and linguistically responsive to their diverse learners, native English speakers and ELs alike.

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Appendix A

English Language Development, Acquisition, and Pedagogy Course Description

This course provides a comprehensive look at fundamental characteristics of language acquisition, use, and development, especially as related to adolescent development. Its foci include theories of language acquisition; various approaches to language analysis; major semantic, syntactic, and auditory systems of language; and the wide variation in language use based on historical, social, cognitive, linguistic, and contextual factors.

Course Objectives

As a result of taking this course, you will be able to:

1. Define and describe the pedagogical implications of diverse theories of language acquisition and development and explain how language usage varies as affected by linguistic, social, cultural, and economic diversity.
2. Describe how the broad knowledge of developmental theories and cognitive, linguistic, and social processes affects your instructional decision-making as a teacher.
3. Illustrate how the native language, home language, dialect, and a second language are acquired, developed, and used in the classroom.
4. Articulate the distinction between formal and informal linguistic structures and how prescriptive grammar and descriptive grammar are used in school and social settings.
5. Describe how to respond to, and build upon, the diverse linguistic patterns that K-12 students may bring to the classroom.
6. Provide your K-12 students with opportunities to consider their native languages in different real-world contexts and understand that they can draw on their past experiences with language or create new language possibilities.

Appendix B

Survey Questions

1. In what level of your program are you?
   a. Post-baccalaureate
   b. Undergraduate
   c. Other
2. How many years of teaching experience (field placement, practicum, student teaching, substitute teaching) do you have?
   a. None
   b. Less than one year
   c. About one year
   d. 1.5 – 5 years
   e. More than five years
3. How much experience do you have teaching English language learners?
   a. None
   b. Less than one year
   c. About one year
   d. 1.5 – 5 years
   e. More than five years
4. If you answered NONE on Question 3, skip this question. PART 1: What has been your experience with English language learners (e.g. in a whole class experience; in a pull-out program; in tutoring)? PART 2: How do you feel about having English language learners in your class? Please explain below.
   a. [short answer box]
5. How do you think understanding English language development will help you teach your native English speaking students (present or future)? Please explain below.
   a. [short answer box]
6. How do you think understanding English language development will help you teach your English language learners (present or future)? Please explain below.
   a. [short answer box]
7. Which course objectives are most important to you? (Check ALL that apply.)
   a. [list of objectives from Appendix A]
8. Please indicate how much you agree with the following statements about the course.
   a. [Likert scale of 5]
   b. I am interested in course content.
   c. I read the assigned course text each week.
   d. Reading the assigned course text before class is useful for my understanding in class sessions.
   e. The class lectures are helping me to learn course content.
   f. The videos are helping me to learn course content.
   g. The pedagogy (i.e., the way the instructor teaches) is helping me to learn course content.
   h. The group work during class is helping me to learn course content.
   i. I have learned content in this course that I can apply to my teaching NOW.
   j. I believe that I will learn content in this course that I can apply to my teaching in the FUTURE.
9. Below, please explain any of the course components in Question 8 for which you answered "disagree" or "strongly disagree".
   a. [short answer box]
10. What are you looking most forward to learning/getting out of this course? In other words, what are your goals in this course?
    a. [short answer box]

Impact of Active Learning Environments on Community of Inquiry

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Colleges and universities are beginning to invest in active learning (AL) classrooms in an effort to replace the traditional lecture style pedagogy that is frequently used by many professors in higher education (Eagan et al., 2014). This is a quantitative research study conducted at a medium-sized Midwestern university. Students were given the Community of Inquiry (CoI) Survey in three different classes. The research study compared students' perceptions of Teaching Presence (TP), Social Presence (SP), and Cognitive Presence (CP) differences from classes first taught in a traditional auditorium lecture-style format, then taught in an AL classroom. This study shows that it is not the physical structure of AL classrooms that had an impact on students' levels of TP, SP, and CP, but the instructional design of these classes that had an impact in these areas. The study also shows that when implementing AL classrooms, instructors need to make intentional design decisions to keep the levels of TP at high levels.

National attrition rates are alarmingly high in public higher education with only 55% of students successfully completing their degree within six years (U.S. Department of Education, 2015). One contributing factor to the high rate of attrition is the common practice of herding students into large enrollment introductory courses taught in auditorium style classrooms with a strong preponderance of instructor lecture (Downs & Wilson, 2015). Large class size is associated with students' perception of course quality and student retention. Westerlund (2008) found that students have a negative perception of the course quality in larger classes, with 17% less likely to give a top score for course evaluations and 30% less likely to give a top score for the instructor evaluation. Schreiner (2009) found that large lecture classes result in lower student retention. Many students view these introductory courses as a painful hurdle that must be cleared before being able to move on to more useful and interesting courses (Ulbig & Notman, 2012). As higher education continues to have tighter budgets, the size of classrooms will continue to rise (Kiley, 2011). There is an inextricably intertwined use of lecture as a teaching pedagogy as class sizes increase (McKeachie, 1980) where the education philosophy for most instructors is "learning is listening [and] teaching is telling" (Harpaz, 2005, p. 137).

Kuh and O'Donnell (2013) have identified high-impact practices in undergraduate education to ensure quality education as designing classes with collaborative learning that permit students to work together to solve problems. While developing classes that include community and collaboration can help to achieve deep and meaningful learning, this can be challenging to implement in large classes (Lipman, 2003; Ramsden, 2003). Higher education introductory classes are frequently large-enrollment classes that are taught in large, stadium-style auditoriums, an environment not conducive to student participation

(Baldwin, 2009). Large lecture auditoriums can discourage student participation because the large size of the rooms exceeds the distance between instructor and students that is comfortable for social interactions (Hall, 1966). The auditoriums normally include seats that are situated close together in fixed rows, which makes it difficult to have students converse with each other. Therefore, many of the large lecture rooms remain impersonal and have little participation (Vorvoreanu, Bowen, & Laux, 2012). With little student participation, instructors cannot properly gauge students' levels of understanding and often make incorrect assumptions of students' level of comprehension (Richards & Velasquez, 2014). This makes it difficult for instructors to revise instruction for any remedial lessons that are needed which could have negative ramifications on cognitive learning. The purpose of this article is to examine large classes first taught in a lecture-style format and then taught in a class redesigned using active learning strategies to measure the impact on students' levels of community in a community of inquiry (CoI).

Literature Review

Bruner (1986) suggested that effective learning requires that students need to be actively involved in developing their own learning and also need a learning community that shares a common culture. Seixas (1993) referred to a collaborative learning environment as an environment where the instructor is responsible for designing a classroom where authority is shared with students in the classroom to create a Community of Inquiry (CoI). Students assume more responsibility for their own learning in a CoI classroom by working together as a community to discuss multiple viewpoints to reach an eventual conclusion as a "community of thinking" (Harpaz, 2005, p. 136). Instructors incorporating the CoI teaching methodology aim to

create environments where students' learning can be transformed into critical thinking and deeper levels of understanding (Splitter, 2011).

In an effort to increase classrooms that have higher levels of CoI, many universities are implementing active learning (AL) environments. The AL classroom design recognizes the importance of getting students to become more actively involved in their education, as well as assume more responsibility for their education. Instructors designing classes for AL environments move away from knowledge transmission using lecture pedagogy to designing classes where students work as a community of inquiry (Lipman, 2003). Active Learning can be defined as "anything course-related that all students in a class session are called upon to do other than simply watching, listening, and taking notes" (Felder & Brent, 2009, p. 2). Other names for AL classrooms include Student-Centered Active Learning Environment for Undergraduate Programs (SCALE-UP), Technology Enabled Active Learning (TEAL), Teaching and Learning Spaces Working Group (TLSWG), and many others. While there are differences between models, the AL classrooms are similar in the fact that the learning spaces are designed to have more active student participation, include higher levels of collaborative learning, and require students to assume more responsibility of their own learning. AL classrooms also shift the role of the faculty from relaying information to becoming coach and facilitator (Park & Choi, 2014). Most AL classrooms continue to be large enrollment, but they move away from the fixed stadium style auditorium to a more flexible room where students sit at tables seating 6 to 9, making collaboration and team work easier to implement (Park & Choi, 2014). AL classrooms will frequently equip students with technology such as laptop computers that allow instructors to implement AL strategies such as entrance quizzes to hold students accountable for homework readings, real-time polling to encourage active participation or peer instruction, and case studies.

Implementing AL classrooms is not an easy or inexpensive endeavor. Higher education administrators undertake a huge investment by building new classrooms (and maybe even new buildings), equipping the rooms (multiple projectors, electronic whiteboards, round desks, chairs, desk microphones), purchasing the technologies (lap tops for students, classroom management software, projector for teacher, projector for groups), and installing the equipment (adding extra internet and electronic capabilities, adding security, locking down the laptop computers).

Implementing AL classrooms is also a challenge for college faculty. Faculty need to go through extensive training to ensure they can utilize the technologies that are installed in the new AL classrooms. However, it is easy for faculty to become so consumed in mastering the technology that they focus exclusively on the technology to make an impact on students' learning (Valenti, 2002). It is critical for faculty go through an extensive course redesign to make sure that pedagogy and technology are considered in tandem (Brown, 2005). Radcliffe (2009) refers to this as the Pedagogy-Space-Technology (PST) framework as it is important to consider all three elements when instructors are designing their courses for the AL classroom. Radcliffe (2009) suggests faculty adopt an instructional design process that considers pedagogy (what are my learning objectives), space (how can I use this space to help meet my learning objectives), and technology (what technologies can I use to meet my learning objectives).

Garrison and Vaughan (2008) define an academic community of inquiry (CoI) as a group of students "whose connection is that of academic purpose and interest who work collaboratively toward intended learning goals and outcomes" (p. 17). The three interdependent elements of a CoI framework include teaching presence, social presence, and cognitive presence (Garrison, 2011). Teaching presence (TP) is defined as the design, facilitation, and direction of a class to ensure students achieve meaningful and worthwhile learning outcomes while working within a Community of Inquiry (Garrison, 2011). Social presence (SP) is defined as students' ability to relate to their classmates, to have trust in their ability to communicate with classmates, and to form personal and effective relationships within the class (Garrison, 2011). Cognitive presence (CP) is defined as students' ability to construct meaning through discussion and reflection while working in a community of inquiry (Garrison, 2011).

In a traditional lecture-based class taught in an auditorium classroom, the instructor is the primary focus of all the students in the classroom. Students become passive learners in that they watch their instructors deliver their lecture and the students may or may not take notes throughout class. This environment requires the instructor to do the bulk of the work to prepare for class with students having little preparation expectations. These roles change dramatically in an AL classroom. Students become active learners as they are required to become problem solvers and contributors in class activities. Instructors continue to be active participants, but assuming more of a supporting role while students are completing their activities (Bracewell, LeMaistre, Lajoie, & Breuleux, 2008). The instructors' role for class preparation remains high, but most of this takes place outside of class time in class preparation, so students do not see their instructors' preparation (Pundak, Herscovitz, Shacham, & Wiser-Biton, 2009). Students' own class preparation needs to increase since they are frequently assessed with

entrance quizzes. In the lecture-format classroom, instructors are the sole source of knowledge and authority. However, in the new AL classroom students become contributors to knowledge and authority (MacGregor, 1990).

While the new AL classroom may have potential to have a positive impact on students' learning, not all students are embracing the change from passive to active learning (Brookfield, 2015). College classrooms have become institutionalized such that students have clear expectations: the students' responsibility is to complete assignments, come to class, study and learn the course material. However, students view the paid instructor as having the responsibility to be active and allow the student customer to be a passive listener (Howard & Baird, 2000). Even though the research may show that AL classrooms result in high levels of student learning (Freeman et al., 2014), many students are intractable and stay rooted in their comfortable "passive" forms of learning (Doyle, 2008). A frequent motivation of students to take a course is simply to pass a course, and therefore, students expect their instructors to provide the answers they need to pass the course examinations (Modell, 1996). If students are required to take a more active role in developing their own knowledge, this would contradict their current expectations. Students resist adopting more active forms of learning because students do not like to take learning risks. Active learning requires students to put forth more work and effort, and students' mind-sets about passive learning are fixed due to years of previous passive learning experiences (Doyle, 2008). Howard and Baird (2000) found that almost all students believe that it is the responsibility of the instructor to be knowledgeable on the subject matter, and it is the students' responsibility to take notes. They also found that some of the students were concerned when talkative students took time away from the instructor as they felt the instructor was the sole source on knowledge, and they wanted to make sure they were getting all the information they could while in class.

Freire (1970) wrote in his seminal book *Pedagogy of the Oppressed* that the traditional lecture-style approach to education was like a "banking" approach to education where instructors made deposits of information to students' brains, which he compared to empty bank accounts. Freire felt that this type of pedagogy resulted in instructors controlling students' thinking and inhibited their creative power. Freire espoused that this type of pedagogy resulted in a dehumanizing educational experience that stimulated oppressive practices and attitudes in society. Freire called for instructors to move toward more active learning pedagogies where class participants can communicate and become actively involved in their knowledge construction. The hypotheses being examined for this research study are:

H1: Teaching in an active learning classroom will have a positive impact on students' perception of Teaching Presence (TP).
H2: Teaching in an active learning classroom will have a positive impact on students' perception of Social Presence- Interaction (SP-I).
H3: Teaching in an active learning classroom will have a positive impact on students' perception of Social Presence- Participation (SP-P).
H4: Teaching in an active learning classroom will have a positive impact on students' perception of Cognitive Presence (CP).

Method

Participants

Participants in this study were undergraduate students enrolled in a medium sized Midwestern university who were enrolled in classes with enrollment over 70 (see Table 1). Students identified as female (n = 268), male (n = 139), and the fewest identified as other (n = 2). Students' ages ranged from 18-24 (n = 341), 25-30 (n = 29), 31-40 (n = 18), 41-50 (n = 9), and 50+ (n = 4). Students identified their race as Caucasian (n = 310), Other (n = 37), Black/ African American (n = 30), Asian (n = 21), Hispanic/ Latino (n = 10), and American Indian/ Alaska native (n = 2). Students identified their academic classification as Sophomore (n = 134), Junior (n = 95), First year (n = 92), and Senior (n = 73). Only 6.3% (n = 25) identified themselves as an international or foreign national.

Procedure

A hard copy survey Scantron was given in class during the last week of the semester. Due to student absenteeism or unwillingness to participate in the research study, there was a 70% response rate from students in these classes. The survey was administered by a researcher other than their instructor to ensure their results remained anonymous and had no impact on their final grade. Data analysis was performed in SPSS. Exploratory factor analysis (EFA) was used to describe and summarize the items in the survey by grouping them together into correlated measures (Tabachnick & Fidell, 2013). EFA was selected to verify the CoI three factor framework (TP, SP, and CP). The sample size of 417 meets the criteria of at least 5 to 10 participants per item or at least 300 participants (Tabachnick & Fidell, 2013). In addition to the survey, one of the researchers observed a class taught during the 2015 Spring term

Table 1
Student Descriptive Data

Class	Enrollment (Day 1)	Enrollment (Last day)	Total Responses	Participation %
		CLASS 1		
1-Spring	100	99	49	49%
1-Fall	87	72	52	72%
		CLASS 2		
2-Spring	80	72	45	63%
2-Fall-E*	100	84	46	55%
2-Fall-L**	100	87	50	57%
		CLASS 3		
3-Spring	77	74	70	95%
3-Fall	108	106	105	99%
		TOTAL		
Total	652	594	417	70%

*E = Early class. **L = Late class

and the 2015 Fall term for each of the instructors. Interviews were also conducted with each of the instructors after the Spring and Fall terms.

Materials

The CoI framework was used in many qualitative studies in an effort to examine the level of community of inquiry and the three interdependent sub-scales of TP, SP, and CP in online and blended learning classes (Garrison, Anderson, & Archer, 2010). In an effort to develop an assessment measurement with more common methodologies and methods, work began on the CoI survey (Swan et al., 2008). The CoI survey was developed to become a valid and reliable measure to test all the components of the CoI framework (Arbaugh et al., 2008).

The 34 self-report items from the Community of Inquiry (CoI) (Swan et al, 2008) was slightly modified so that the survey was appropriate for an AL environment (see Appendix A1). Participants responded to questions such as, "Class discussions help me to develop a sense of collaboration" using a Likert-type scale ranging from 1 = "Strongly disagree," 2 = "Disagree," 3 = "Neutral," 4 = "Agree," and 5 = "Strongly agree." The CoI Survey questionnaire was originally developed as a tool to measure the Community of Inquiry (CoI) framework in online and blended learning settings. The CoI survey was selected for this research study in an attempt to measure the students' perceptions of changes in the three factors of TP, SP, and CP (Swan, et al., 2008) between the traditional lectures and the AL teaching environment. The original CoI researchers conducted a confirmatory factor analysis to validate the three-factor design of the CoI Survey (Arbaugh et al., 2008). The results from the PCA were consistent with the design of the survey that supported the three-factor model with questions 1-13 (TP),

questions 14-22 (SP), and questions 23-34 (CP) loading for each factor. Cronbach's Alpha yielded a high degree of internal consistency for each factor; TP (α = .94), SP (α = .91), and CP (α = .95) (Arbaugh et al., 2008).

Instructor and Class Overview

Classes taught during the 2015 Spring term were conducted in a traditional auditorium classroom. These classrooms were equipped with fixed student seating, and the instructor lectured from a podium in the front of the class. Class 1 was 99% instructor lecture while Class 2 and Class 3 were about 85% lecture with occasional class discussions or case studies interspersed. The three faculty in this study applied to be part of a university teaching and learning circle to provide help and support in redesigning their course from a traditional lecture to an AL classroom. These faculty attended six months of training in the university teaching and learning center to learn how to design and teach in an AL classroom. The instructors' classes were moved to the new AL classrooms during the 2015 Fall term. In the AL classes, students sat at round tables where every participant had their own laptop. While each AL classroom was equipped with a teacher podium, all of these teachers chose to walk through the classroom while teaching. The instructor for Class 1 chose to implement a complete overhaul of her lecture pedagogy to move to an AL pedagogy that included much less lecture, case studies, group work, daily in-class electronic quizzes, student discussion, and polling questions. The Class 1 instructor went from 99% lecture in the Spring to 40% lecture in the Fall. While the Class 1 instructor added active learning strategies when teaching in the AL classroom, she interspersed short mini-lectures to provide students with course

Table 2
Class Design Changes from 2015 Spring to 2015 Fall

Class	Lecture Amount	AL Amount	Design Change	Group work	Case Studies	Student Discussion	Quiz & Polling
			CLASS 1				
1-Spring	99%	1%	90%	No	No	No	Yes
1-Fall	40%	60%		Yes	Yes	Yes	Yes
			CLASS 2				
2-Spring	85%	15%		Yes	No	Yes	No
2-Fall-A	80%	20%	10%	Yes	No	Yes	No
2-Fall-B	80%	20%		Yes	No	Yes	No
			CLASS 3				
3-Spring	85%	15%	90%	Yes	Yes	Yes	Yes
3-Fall	10%	90%		Yes	Yes	Yes	Yes

Table 3
CoI Survey Item Groupings After Factor Analysis

Teaching Presence TP	Social Presence Interaction SP-I	Social Presence Participation SP-P	Cognitive Presence CP
Q1	Q14	Q17	Q32
Q2	Q15	Q18	Q33
Q3	Q16		Q34
Q4			
Q5			
Q6			
Q8			
Q9			
Q13			

information, misconception realignments, or tutorials on course skills. Class 2 had one section in the Spring and then two sections in the Fall, with one being taught earlier in the day (Class 2-E) and one being taught later in the day (Class 2-L). The instructor for Class 2 (E and L) took advantage of the laptop computers to upload content, but changed little of his original class design from the previous Spring. The instructor went from about 85% lecture in the Spring to about 80% lecture in the Fall (Table 2). The instructor for Class 3 completely revised her course for the AL classroom so that students watched video lectures before coming to class and then spent the entire class period completing active learning strategies such as case studies and application quizzes where students were graded from responses provided by an audience response system.

Results

The factorability of the 34 items included in the CoI survey were examined using several recognized criteria. Of the 34 items in the survey, 24 demonstrated a correlation of at least .3, which suggests factorability with the population sample (N = 417) (Tabachnick & Fidell, 2013). Tests to determine factorability such as the Kaiser-Meyer-Olkin (KMO) and the Bartlett's test of sphericity were given. The KMO measure of sampling adequacy was .95, which Hutcheson and Sofroniou (1999) considered a "marvelous" value, and Bartlett's test of sphericity was significant (p = .000), indicating the factor model is appropriate. Of the 34 items, 31 had communalities above .4, suggesting that each item in the survey shared some common variance with the other items (Costello & Osborne, 2005). Given these indicators, a factor analysis was conducted.

Exploratory factor analysis (EFA) with principal axis factoring and varimax rotation was used to identify the underlying relationships between the survey items (Norris & Lecavalier, 2010). The number of factors were selected based on eigenvalues of 1.00 or higher (Gorsuch, 1983). Principal axis factoring assumes all variables have been measured with some degree of error (Kim & Mueller, 1978). Varimax (orthogonal) rotation attempts to minimize the number of variables that have high factor loadings, thus interpretability of factors can be enhanced. Any items that did not have a

Table 4
Descriptive Statistics for the Four Sub-Scale Factors (N = 417)

	No. of items	M	SD	Skewness	Kurtosis	Alpha
Teaching Presence	9	3.76	.77	-.263	-.477	.91
Social Presence: Interaction	3	3.79	.80	-.59	.65	.71
Social Presence: Participation	2	3.37	1.09	-.332	-.552	.88
Cognitive Presence: Application	3	3.56	.94	-.648	.152	.86

primary factor load of .4 or above were removed to ensure adequate item communalities (Costello & Osborne, 2005). Items with higher than a .32 cross-loading were removed to follow guidelines for the minimum loading of an item (Tabachnick & Fidell, 2001) (see Appendix B1). After removing those items that did not meet the specified criteria, the data resulted in four factors (see Table 3). There was one additional extracted factor than the original factors proposed by Garrison, Anderson, and Archer (2000), therefore, the names of the extracted factors were modified to: Teaching Presence (TP), Social Presence – Interaction (SP-I), Social Presence – Participation (SP-P), and Cognitive Presence (CP).

Internal consistency for each of the four scales was examined using Cronbach's alpha (Cronbach, 1951). Per George and Mallery's (2016) guidelines, the alphas for each subscales showed a strong internal consistency (Table 4). Composite scores were created for each of the four factors. Descriptive statistics are presented in Table 4. The four factor sub-scales were used to compare the three classes using descriptive statistics. An independent samples *t*-test was performed to determine if each class had statistically different sub-scale scores when instructors moved from the traditional auditorium classroom to the AL classroom. Distributions were sufficiently normal to perform a *t*-test (Schmider, Ziegler, Danay, Beyer, & Bühner, 2010).

Hypothesis #1: Teaching Presence (TP)

The first hypothesis states the move from traditional lecture to an AL classroom will impact students' perceptions of TP. All four classes taught in the active learning classroom had lower TP scores compared to those taught in the traditional, auditorium classroom (see Appendix C1). To test the hypothesis that students' perceptions of TP in the AL classroom were associated with statistically significant differences, an independent samples *t*-test was performed. Equal variances were not assumed. Class 2-L was associated with a statistically significant decrease, *t*(92.606) = 1.99, *p* = .05 and Class 3 was also associated with a statistically significant TP decrease, *t*(144.274) = 4.753, *p* = .000. Further, Cohen's effect size value for Class 2-L (*d* = ..40) suggested moderate

practical significance, and Class 3 (*d* = ..74) suggested large practical significance (Cohen, 1992). Therefore, the AL classroom negatively impacted students TP scores for Class 2-L and Class 3.

Hypothesis #2: Social Presence - Interaction (SP-I)

The second hypothesis states the move from traditional lecture to an AL classroom will impact students' perceptions of Social Presence- Interaction (SP-I). Three of the four classes examined (Class 1, Class 2-E, and Class-2-L) resulted in numerically higher SP-I scores than those classes taught in the traditional auditorium classroom. One class (Class 3) realized a decrease in the SP-I score when moving to the AL classroom (see Appendix C1). An independent samples *t*-test showed that only Class 1 was associated with a statistically significant SP-I increase, *t*(98.42) = -3.773, *p* = .000. Cohen's effect size value for Class 1 (*d* = .74) suggested a large practical significance (Cohen, 1992). Therefore, the AL classroom had a positive impact on SP-I for Class 1.

Hypothesis #3: Social Presence – Participation (SP-P)

The third hypothesis states the move from traditional lecture to an AL classroom will impact students' perceptions of Social Presence- Participation (SP-P). Three of the four classes examined (Class 1, Class 2-E, and Class-2-L) resulted in a numerically higher SP-P scores than those classes taught in the traditional auditorium classroom (see Appendix C1). One class (Class 3) realized a decrease in the SP-P score when moving to the AL classroom (see Appendix C). An independent samples *t*-test showed that only one of the classes (Class 3) was statistically significantly lower SP-P after being taught in the AL environment (*p* = < .05). Cohen's effect size value for Class 3 (*d* = .37) suggested a moderate practical significance (Cohen, 1992). Therefore, the AL classroom had a negative impact on students' perceptions of SP-P for Class 3.

Hypothesis #4: Cognitive Presence (CP)

The fourth hypothesis states the move from traditional lecture to an AL classroom will have an impact on students' perceptions of Cognitive Presence (CP). Two of the four classes examined (Class 1 and

Class 2-E) realized a CP score increase and two of the classes (Class 2-L and Class 3) a decrease in the CP score when moving to the AL classroom (see Appendix C1). An independent samples *t*-test showed that none of the score changes were significantly different from traditional auditorium to the AL classroom. Therefore, it cannot be assumed that the AL classroom had any impact on students' perceptions of CP.

Discussion

Colleges and universities are beginning to invest in AL classrooms in an effort to replace the traditional lecture style pedagogy that is frequently used by many professors in higher education (Eagan et al., 2014). Research has found that students in a traditional lecture style classroom will fail 1.5 times more often than students attending classes taught using active learning techniques. The same study also found that AL teaching can improve exam scores by 6% (Freeman et al., 2014). Active learning classrooms require students to take more responsibility for their own learning through interaction and collaborative learning activities instead of passively listening to instructor lectures. To take advantage of the improved results in student learning and interactive/collaborative learning pedagogies, many universities are now building or converting classrooms to AL classrooms (Rimer, 2009).

While the open design of the AL classroom can enhance active learning strategies, this research paper shows it is not the physical structure of the classroom that enhances TP, but the instructional design of the class. Students reported that the levels of TP decreased when moving to an AL classroom since the instructor is no longer the focus of attention by lecturing in the front of the room. While instructors do just as much work in an AL classroom (if not more), much of that work is behind-the-scenes as they are planning group activities, case studies, and other active learning activities; therefore, students may not perceive as much presence of the instructor in AL classrooms. The new AL design may enhance students' role, but it may come at the cost of reducing the presence of the instructor to the student. As Radcliffe (2009) suggests, instructors need to make intentional instructional design choices in the three areas of pedagogy, space, and technology to keep TP high in AL classrooms. Instructors need to include activities such as mini-lectures, learning of student names, and instructional tutorials to scaffold students' skills.

Students perceptions of TP in AL classrooms may be reduced when students feel as if there are too many active learning activities where they only work with other students and do not have opportunities to hear from the instructor. Students will become frustrated if the instructor is not actively involved to help clear up any misconceptions to help bring learning to higher

levels, and to provide tutorials for new skills and development. Instructors redesigning their class to include more AL strategies need to make sure that instructor lecture and feedback is still an important part of the day to day activities.

The survey questions for the SP-I factor pertained to students' ability to get to know others by forming distinct impressions. It would seem logical that sitting at round tables where six students are looking at each other would automatically yield higher levels of SP-I than an environment where students are sitting in an auditorium-style classroom with fixed seats that look forward. However, not all the classes realized an increase in SP-I. Three of the four classes realized higher levels of SP-I when moving to the AL classroom, but only Class 1 significant higher ($p < .01$). The instructor for Class 1 redesigned the majority of her class from an almost entirely lecture based pedagogy to a highly interactive classroom where students worked together to solve case studies and problems. Students in Class 1 reported higher levels of SP-I at significant levels; therefore, this is likely due to the efforts of her instructional design changes. The instructor for Class 2 changed little of his curriculum design when moving to the new AL classroom and did not have any significant changes in levels of SP-I. This demonstrates that it is not likely the physical layout of the classroom that causes changes in SP-I. The instructor for Class 3 redesigned her class so that the entire class worked together with little instructor involvement; however, students in the redesigned class reported lower SP-1. On the surface, this seems illogical as the students were asked to do more work together and yet reported lower levels of SP-I. However, it could be plausible that students are resisting active learning strategies where they are required to work together and need to rely on each other to figure out solutions. It is difficult to wean students from depending on their instructors. It is possible that students do not value the input of other students and want to return to teaching methodologies where instructors provide them the content so they know the answers to the tests. Students may resist being force to take a more active role in their education and feel as if the instructor did not teach and that they learned it themselves (Weimer, 2014).

While physical structure of the auditorium-style classrooms from the Spring 2015 term made it difficult to include AL activities, the instructors for Class 2 and Class 3 were able to find a way to include some group discussions during their Spring term. Therefore, their SP-I scores were relatively high before switching to the AL classroom. This suggests it is not the physical structure of the AL classroom that impacts students' perception of SP-I, but it is the instructional design.

None of the classes had changes in CP at a

significant level. This finding might suggest to instructors that when moving to the AL classroom it is important to include frequent assessment activities and not strictly focus on cooperative and collaborative group activities. Including frequent assessment activities such as quizzes at the beginning of class and polling questions that are factored into students' final grades might make levels of CP increase. This again shows it is not the structural design of the AL classroom that has an impact on students' levels of CP, but the instructional design choices of the instructor.

Study Limitations and Further Areas of Study

This study used the Community of Inquiry (CoI) survey (Swan et al., 2008) to measure students' perceptions of TP, SP, and CP when moving from a traditional auditorium lecture class to an AL class. After conducting the factor analysis on the CoI Survey, there were only 17 of the 34 questions that met the guidelines for an Exploratory Factory Analysis. In addition, instead of the three factors originally identified in the CoI Survey, there were four factors (TP, SP-I, SP-P, and CP). Since the CoI Survey was originally used in online and blended-learning classes, several of the questions needed to be slightly modified to be appropriate for a face-to-face teaching environment.

This study measured the impact of instructor's course redesign from an auditorium-style classroom to an AL classroom. Another further area of study would be to measure the impact of CoI on instructors implementing active learning strategies into their existing auditorium-style classrooms. While the fixed-seat format of the auditorium-style classroom could be a challenge to implementing group and collaborative learning methodologies, creative instructors can utilize many active learning strategies. Instructors can implement active learning strategies into any classroom they are assigned to teach.

This study only reports on the quantitative feedback from students, and, therefore, qualitative feedback research could add more information on the students' thoughts and feelings to explain some of their responses. While there was an adequate number of student responses for this study ($N = 417$), the survey was conducted on only one institution and could be expanded to other institutions to validate findings. Another area of future research could be an investigation of the decrease of student retention when students moved to the AL classroom. Retention dropped from 95% in the 2015 Spring term to 88% in the Fall term. It is important to find out why students dropped out of the courses at a higher rate in the new AL classrooms. Future research might also investigate whether a particular student population dropped the

class at higher rates, and which factors made them choose to leave the AL classroom.

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Appendix A

Table A1
CoI survey with revised questions

Teaching Presence

1. *The instructor clearly communicated important course topics.
2. *The instructor clearly communicated important course goals.
3. *The instructor provided clear instructions on how to participate in course learning activities.
4. *The instructor clearly communicated important due dates/time frames for learning activities.
5. *The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.
6. *The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.
7. The instructor helped to keep course participants engaged and participating in productive dialogue.
8. *The instructor helped keep the course participants on task in a way that helped me to learn.
9. *The instructor encouraged course participants to explore new concepts in this course.
10. Instructor actions reinforced the development of a sense of community among course participants.
11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.
12. The instructor provided feedback that helped me understand my strengths and weaknesses.
13. *The instructor provided feedback in a timely fashion.

Social Presence

14. *Getting to know other course participants gave me a sense of belonging in the course.
15. *I was able to form distinct impressions of some course participants.
    Revised: I was able to form distinct impressions (ideas, feelings, or opinions) of some course participants.
16. *Online or web-based communication is an excellent medium for social interaction.
    Revised: Class Discussions are an excellent tool for social interaction.
17. *I felt comfortable conversing through the online medium.
    Revised: I felt comfortable talking during class.
18. *I felt comfortable participating in the course discussions.
19. I felt comfortable interacting with other course participants.
20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.
21. I felt that my point of view was acknowledged by other course participants.
22. Online discussions help me to develop a sense of collaboration.
    Revised: Class discussions help me to develop a sense of collaboration.

Cognitive Presence

23. Problems posed increased my interest in course issues.
    Revised: Course problems and activities increased my interest in course issues.
24. Course activities piqued my curiosity.
25. I felt motivated to explore content related questions.
26. I utilized a variety of information sources to explore problems posed in this course.
27. Brainstorming and finding relevant information helped me resolve content related questions.
28. Online discussions were valuable in helping me appreciate different perspectives.
    Revised: Class discussions were valuable in helping me appreciate different perspectives.
29. Combining new information helped me answer questions raised in course activities.
    Revised: Applying new information helped me answer questions raised in course activities.
30. Learning activities helped me construct explanations/solutions.
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.
32. *I can describe ways to test and apply the knowledge created in this course.
33. *I have developed solutions to course problems that can be applied in practice.
34. *I can apply the knowledge created in this course to my work or other non-class related activities.

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
*Questions remaining after factor analysis

Appendix B

Table B1
Factor loadings based on a Principal Axis Factoring Analysis with Varimax rotation

	1	2	3	4	5
Q1	.799	.020	.053	.054	.219
Q5	.798	.103	.082	.150	.166
Q6	.782	.103	.073	.156	.267
Q2	.764	.071	.119	.093	.140
Q3	.751	.101	.079	.061	.060
Q11	.693	.108	.162	.118	.367
Q8	.675	.103	.177	.142	.314
Q4	.600	.015	.106	.108	-.010
Q9	.591	.178	.209	.143	.110
Q7	.523	.228	.214	.172	.332
Q12	.523	.324	.087	.171	.162
Q31	.476	.264	.346	.137	.441
Q23	.469	.220	.304	.203	.442
Q10	.427	.405	.158	.188	.214
Q13	.423	.219	.141	.064	.047
Q14	-.034	.687	.260	.255	.083
Q15	.141	.609	.225	.131	.132
Q22	.165	.532	.176	.333	.307
Q16	.289	.490	-.012	.294	.294
Q27	.277	.389	.322	.162	.366
Q33	.154	.257	.776	.088	.065
Q32	.219	.144	.734	.144	.166
Q34	.101	.177	.728	.112	.142
Q25	.313	.137	.523	.144	.476
Q18	.279	.102	.057	.787	.282
Q17	.316	.067	.032	.714	.248
Q19	.044	.412	.207	.702	-.061
Q20	.096	.350	.174	.620	-.019
Q21	.112	.474	.210	.529	.030
Q30	.452	.310	.171	.097	.540
Q24	.451	.153	.379	.102	.505
Q29	.305	.406	.288	.101	.444
Q28	.376	.411	.099	.203	.416
Q26	.323	.279	.274	.100	.337

Appendix C

AL class design impact on students' perception of TP, SP-I, SP-P, and CP using t-test

	2015 Spring			2015 Fall				
	N	*M*	*SD*		*N*	*M*	*SD*	*p*	*d*
				Teaching Presence					
Class 1	49	4.08	.60		52	3.98	.67	.415	.16
Class 2-E	45	4.30	.75		46	4.01	.70	.062	.40
Class 2-L	45	4.30	.75		50	3.99	.79	.050*	.40
Class 3	70	3.61	.62		105	3.16	.60	.000**	.74
				Social Presence- I					
Class 1	49	3.30	.79		52	3.88	.77	.000**	.74
Class 2-E	45	3.79	.90		46	3.90	.85	.526	.13
Class 2-L	45	3.79	.90		50	3.99	.83	.262	.23
Class 3	70	3.91	.66		105	3.74	.75	.113	.23
				Social Presence - P					
Class 1	49	3.40	.87		52	3.70	1.02	.112	.32
Class 2-E	45	3.49	1.08		46	3.56	1.15	.780	.06
Class 2-L	45	3.49	1.08		50	3.76	1.00	.209	.26
Class 3	70	3.31	1.04		105	2.91	1.13	.019*	.37
				Cognitive Presence					
Class 1	49	3.33	.95		52	3.41	.96	.687	.08
Class 2-E	45	3.38	1.10		46	3.41	1.17	.906	.03
Class 2-L	45	3.38	1.10		50	3.29	1.09	.709	.08
Class 3	70	3.93	.67		105	3.78	.69	.139	.22

*Significant at p $\leq$ .05 level; **Significant at an $\leq$ .0001 level
E = Early class; L = Late class

Tackling a Tough Task: Teaching Today's Teachers to Teach English Learners

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There is a critical need in the United States to understand how to best prepare preservice teachers for effectively teaching the steadily growing number of PK-12 English learners. The study described in this article, situated in a teacher preparation program in a small, private college in a largely monolingual, monocultural area of the northeastern United States, expands the extant research around this urgent conversation. Specifically, the effects of a set of research-based learning experiences on the readiness of 18 White preservice teachers to create culturally responsive teaching and learning environments for English learners were investigated. Results suggest that carefully constructed learning experiences can positively affect future educators' preparation for teaching English learners, even in largely monocultural, monolingual geographical areas. Outcomes will interest teacher educators in homogeneous areas who strive to prepare future educators for teaching culturally and linguistically diverse school-age learners in principled ways in countries with growing numbers of children who speak other languages.

In the U.S., English learners (ELs) are a steadily growing number of the PK-12 public school students, numbering more than 5.5 million (Zong & Batalova, 2016). English learners are diverse in terms of socioeconomic status, cultural and linguistic background, country of origin (including born in the U.S.), educational experiences, and first and second language literacy strengths (Valdés & Castellón, 2011; Walqui, 2005). As well, growing numbers of ELs now attend PK-12 schools in largely monolingual geographical areas with previously small immigrant populations (Cho, Rios, Trent, & Mayfield, 2012). Yet the majority of U.S. teachers are still not adequately prepared to effectively teach ELs (de Jong & Harper, 2011; Lucas, 2011), and research on how to effectively prepare teachers to teach ELs is still in its infancy (Bunch, 2013; Lucas & Grinberg, 2008).

Compounding this reality is the fact that most U.S. state departments of education have only begun to require teacher preparation programs to include at least one course focused on learning to teach ELs since 2001 (de Jong & Harper, 2011). In the northeastern state in which the present study took place, the requirement to take one course to prepare to teach PK-12 ELs only became a mandate in January 2011. Numerous teacher competencies to be addressed in this one course include valuing ELs' languages and cultures as bridges to optimal instruction, learning research-based instructional strategies that support diverse ELs' in meeting grade-level academic content and language goals, becoming familiar with formative and summative assessment practices, knowing the laws and policies governing teaching and learning with ELs, and communicating effectively with ELs' families.

Teacher educators have an ethical and professional obligation to make principled decisions based on extant research to design coursework that will support preservice teachers in gaining the confidence and expertise to teach PK-12 ELs with equity and excellence. This goal involves preparing preservice teachers to design culturally and linguistically responsive instruction that supports diverse PK-12 ELs in progressing toward the same grade-level academic content and language goals as their non-EL peers (Walqui, 2006).

The study described in this article reflects my effort as a teacher educator in a four-year teacher preparation program to join the critical conversation about how to best prepare preservice teachers to teach and serve diverse PK-12 ELs (Galguera, 2011; Jimenez-Silva & Olson, 2012; Kibler, Walqui & Bunch, 2015). This conversation is relevant for teacher educators in all countries who prepare preservice teachers to effectively teach language-minority children, especially given the increasing amount of refugees fleeing to safer countries around the world.

The present study, conducted with 18 PK-4, middle level, and secondary preservice teachers in a private college in a rural and largely White, monolingual area, was designed to gauge participants' readiness to teach ELs after taking one mandated course designed with this focus. I investigated the way specific learning experiences may have strengthened participants' readiness to teach PK-12 ELs. In addition, I queried participants' perspectives about the way each specific learning experience may have contributed positively to their preparation to teach culturally and linguistically diverse children.

I begin with a review of the literature that shaped my decisions around which learning experiences to include in the course that could bolster future teachers' readiness for teaching diverse PK-12 ELs. Answering this question is particularly important for teacher educators situated in largely monolingual and monocultural geographic areas in the U.S. and abroad who are responsible for preparing future teachers to effectively teaching language-minority children.

Making Principled Decisions Based on the Literature of the Field

Learning from Language and Literacy Scholars

As outlined by Bunch (2013), the extant research around preparing teachers to provide effective instruction for ELs has been influenced by theoretical perspectives ranging from systemic functional linguistics (SFL) (Achugar, Schleppegrell, & Oteiza, 2007; Brisk & Zisselsberger, 2011; Gebhard & Willet, 2008) to sociocultural and sociolinguistic theories (Walqui, 2011) to new perspectives on second language acquisition and bilingualism (Garcia & Kleifgen, 2010; Valdés, Kibler, & Walqui, 2014). In SFL-based approaches to teaching and learning, language-minority learners are carefully apprenticed to gain control of the academic language resources that function to create meanings in various genres in order to both critically read and successfully write in school (Brisk, 2012, 2015; Fang & Schleppegrell, 2008, 2010; Gebhard, Harman & Seger, 2007; Schleppegrell, Greer, & Taylor, 2008; Rose & Martin, 2012). The notion of equity for all children through access to academic literacy practices lies at the core of this perspective.

The sociocultural conceptualization of language as action values teaching academic language and content simultaneously through high-challenge instruction that affords ELs frequent opportunities for meaningful engagement with their non-EL peers (Heritage, Walqui, & Linquanti, 2015; Kibler et al., 2015; Walqui & van Lier, 2010). Heritage and colleagues (2015) argued that teachers must know how to engage ELs and other learners to collaborate to learn content and language through *analytical practices*, or constructing explanations, arguing from evidence, and critiquing the reasoning of others.

Lucas and Villegas (2011) and de Jong and Harper (2011) described well-articulated frameworks that offer guidance for designing teacher preparation coursework for future teachers of ELs. These frameworks outline the specific *orientations*, or dispositions, as well as knowledge and skills that linguistically responsive teachers of ELs must possess. Knowledge and skills include learning about ELs' language backgrounds and educational experiences, being able to identify the language demands of classroom tasks, and scaffolding instruction appropriately (Lucas & Villegas, 2011).

Additionally, ELs' teachers should understand key principles of second language learning. These principles include understanding the way conversational language proficiency differs from academic language proficiency, how affective concerns influence learning, and why interaction for authentic purposes fosters learning for ELs (Lucas & Villegas, 2011). Moreover, all teachers need to know how to make content and language concepts comprehensible for ELs with diverse literacy strengths and should understand the way that first language (L1) literacy and learning skills support the development of these skills in English.

Similarly, de Jong and Harper (2011) articulated the knowledge, dispositions, and practices that ELs' future teachers should explore in initial teacher preparation. These concepts include awareness of the language demands inherent in curricula and ways to leverage ELs' funds of knowledge (González, Moll, & Amanti, 2005) in instructional design. Other research about building preservice teachers' culturally and linguistically responsive teaching practices comes from teacher educators in higher education.

Learning from Other Teacher Educator Researchers

One common goal in research by teacher educators who prepare preservice teachers to teach ELs is building future educators' confidence in their professional preparation to meet these learners' needs (Jimenez-Silva & Olson, 2012; Durgunoğlu & Hughes, 2010). Other goals include guiding preservice teachers to examine existing beliefs and attitudes toward ELs (Coronado & Petrón, 2008; Markos, 2012), transforming or "interrupting" deficit views of ELs (Gainer & Larrotta, 2010), building the specialized knowledge needed to create optimal instruction for ELs (Galguera, 2011; Durgunoğlu & Hughes, 2010), and fostering empathy for ELs (Gainer & Larrotta, 2010; Jimenez-Silva & Olson, 2012; Zhang & Pelttari, 2014).

Many of these studies integrated all of these goals while others recommended the inclusion of specific experiences in teacher education coursework. For example, Jimenez-Silva and Olson (2012) described how to create Teacher-Learner Communities (TLCs). In the TLCs, preservice teachers participated in a case study with a PK-12 EL to learn firsthand about the ELs' background, interests, and language and literacy skills, and they used this experience as a platform for exploring their roles as future teachers of ELs.

Galguera (2011) made a strong case for supporting preservice teachers to see beyond the EL label by focusing on designing instruction that builds all PK-12 students' academic language and literacy practices in every classroom. Galguera advocated including participant structures (Philips, 2009) and professional learning tasks (Ball & Cohen, 1999) in coursework. This effort involves the development of preservice teachers' pedagogical language knowledge through learning experiences that explore the role of language in conveying knowledge in academic texts (Galguera, 2011). For example, Galguera opened a space for preservice teachers to experience one way to scaffold academic language development by using an extended

anticipation guide to read and discuss an academic text in Spanish. After this experiential task, the preservice teachers reflected on the activity from both a student's and a teacher's perspective.

Along these same lines, other teacher educators have emphasized including experiential learning that allows preservice teachers to experience the hurdles ELs often face to comprehend complex oral and written texts while learning content in mainstream classrooms. Coronado and Petrón (2008) suggested including simulation activities, such as listening to a radio broadcast or reading and summarizing a text in a foreign language. To promote preservice teachers' empathy for the confusion and alienation ELs often experience, Zhang and Pelttari (2014) exposed participants to a 15-minute oral presentation in Dutch. Following this experience, participants documented their emotions, noted the strategies the professor used to support comprehension during the mini-lesson, and identified the most critical needs for ELs in classrooms. Fostering empathy for ELs' potential struggles to learn content and develop academic language practices is an important notion for teacher educators to include in coursework.

Other teacher educators have highlighted the importance of requiring preservice teachers to directly interact with learners from different cultural and linguistic backgrounds (Jimenez-Silva & Olson, 2012; Gainer & Larrotta, 2010; Walker & Stone, 2011). Gainer and Larrotta (2010) argued that preservice teachers' direct exposure to other cultures and languages is necessary to disrupt subtractive schooling practices (Valenzuela, 2002), such as transmission-style instruction, that fail to acknowledge the unique needs of culturally and linguistically diverse learners, thereby alienating these students (Nieto, 2000). Recognizing and countering subtractive schooling practices are particularly important given that most U.S. preservice teachers are White, middle class, monolingual English speakers (Gainer & Larrota, 2010; Gay, 2005).

Walker and Stone (2011) responded to the large influx of resettled refugee ELs in Minnesota to design a one-credit course for preservice teachers grounded in research about effective professional development (Darling-Hammond & Bransford, 2005). Fundamental principles include personalized active learning, working in collaborative learning communities, exploring the rewards and challenges of teaching ELs, and anchoring learning with real students in actual classroom settings (Walker & Stone, 2011).

This extant research can support teacher educators in making principled decisions about the specific learning experiences to include in coursework that aims to prepare preservice for teaching ELs. Designing effective preparation can be particularly challenging in teacher education programs situated in largely monolingual and monocultural geographic areas in the U.S. and in other countries

I now turn to the methodology of the present study. First, I describe the instructional context and the participants. Next, I highlight selected focal learning experiences and the rationale for their inclusion in the course. Then, I share qualitative analyses of the data that illuminated participants' perceptions of the way these learning experiences may have contributed to their readiness to effectively teach PK-12 ELs. Finally, I discuss these results in order to expand the ongoing conversation initiated by other teacher educators (Gainer & Larrotta, 2010; Jimenez-Silva & Olson, 2012) about how to best prepare future PK-12 teachers to equitably and effectively teach diverse ELs.

The research questions addressed in this study were:

How did participants perceive the way that the overall course affected their confidence in and preparation for effectively teaching PK-12 ELs?

To what degree did participants perceive that specific learning activities supported them in gaining the specialized knowledge necessary for effectively teaching PK-12 ELs?

During the first course session, the study's purpose and participants' right to decide whether to participate as well as to withdraw from the study at any time were explained verbally and in writing. All 18 students consented to participate in the study. Participants were ensured that their pre- and post-course responses would be anonymous and would therefore not affect their grade in any way.

Method

The Institutional Context

This study took place across a 15-week semester with 18 White preservice teachers in a teacher education program situated in a small, liberal arts, private college in a rural area of the northeastern U.S. All preservice teachers were required to take this three-credit course to prepare to teach PK-12 ELs. This course met face-to-face twice weekly for 90-minute sessions, and I was the instructor. Opportunities for the participants to interact with PK-12 ELs in schools during field experiences in other education courses were virtually nonexistent. Notably, a few students at the beginning of each semester typically expressed not having been aware that they would teach ELs in the future, a not atypical belief among preservice teachers (Walker & Stone, 2011).

Thus, a principal goal of the course was for participants to learn to regard ELs as highly capable students and to view their unique cultural and linguistic backgrounds as assets in classrooms. Another key goal

Table 1
Participants' Demographic Information

Demographic Category	Number of Participants n=18
Gender	
Male	10
Female	8
Year in College	
Seniors	8
Juniors	7
Post-baccalaureate	3
Teaching certifications pursued	
PK-4	4
Middle level ELA	3
Middle level social studies	2
Secondary history	2
Secondary English	2
Secondary Mathematics	2
K-12 Foreign Lanuage	2
K-12 Environmental Science	1

was for participants to gain confidence in creating culturally and linguistically responsive teaching and learning environments with diverse ELs. This goal embodied learning to design interactive, carefully scaffolded, high-challenge instruction for reaching grade-level academic content standards while developing academic language and literacy practices (Walqui, 2006).

Course Overview

I used the textbook *Making Content Comprehensible for English Learners: The SIOP Model* (Echevarría, Vogt, & Short, 2013) as the foundational text. Empirical research suggests that Sheltered Instruction Observational Protocol (SIOP) features support ELs in achieving academically in mainstream classrooms (Echevarría et al., 2011; Short, Echevarría, & Richards-Tutor, 2011).

This textbook includes descriptions of research-based instructional practices, teaching and differentiating ideas, and real lesson scenarios from varied grade levels and content areas. The SIOP features (Echevarría et al., 2013) provide a concrete foundation for exploring the theoretical frameworks informing the knowledge, skills, and dispositions described in the literature review that all teachers of ELs need to develop (de Jong & Harper, 2011; Lucas & Villegas, 2011).

To illustrate, Echevarría and colleagues (2013) emphasize consistently planning contextualized reading, writing, listening, and speaking opportunities that foreground ELs' active use of language through interaction with non-EL peers (Lucas & Villegas, 2011; Walqui & van Lier, 2010). Attention is given to explicit cognitive, metacognitive, and language-learning strategy instruction (Dymock & Nicholson, 2010; Walqui, 2006) and to verbal, procedural, and instructional scaffolding to support ELs' in actively learning content and developing academic language practices simultaneously (Walqui, 2006).

Furthermore, Echevarría and colleagues (2013) draw attention to the strong correlation between oral language development and reading proficiency (Genesse & Geva, 2006), the way that L1 language skills can foster L2 language development (August & Shanahan, 2006), and the use of multiple assessment measures to gather data about ELs' academic content and language learning progress (Lenski, et al., 2006; Vogt & Shearer, 2011). Importantly, an entire chapter is devoted to issues of reading difficulties ELs may face and to the critical distinction between language learning processes and specific learning disabilities (Klingner & Harry, 2006).

This textbook's focus on theoretically informed instructional practices, grounded in the work of real teachers with ELs in real schools, make this a useful foundational textbook for preservice teachers who are just beginning to envision themselves as future teachers of ELs.

The Participants

The participants were 18 White preservice teachers enrolled in the course. Table 1 presents participants' demographic information.

Table 2
Learning Experiences of Focus and Rationale

Learning Experiences	Rationale
Conducting instructional conversation around text with college-level EL peers	Practice supporting reading comprehension of complex text with explicit attention to academic language resources
	Make connections to course topics in authentic scenario
Watching instructor model directions in Spanish with and without supports	Simulate ELs' in-school experiences to create empathy for ELs
	Model supports that provide comprehensibility of verbal input
Viewing and discussing video excerpts of teachers' instructional moves with ELs in real classrooms	Build awareness of effective instructional practices in real classrooms
	View ELs as intelligent, capable students
Writing written reflections connected to culturally responsive teaching	Synthesize learning from class texts
	Promote reflection and create affordance to imagine oneself as future teacher of ELs
Creating two sequential lesson plans for content classroom with Level 2 ELs	Apply learning by designing standards-aligned, high-challenge, appropriately scaffolded instruction with formative assessments in mainstream classroom with six beginning level ELLs
Discussing the SIOP features in pairs and groups	Model sociocultural practices
	Open space for experiential learning

As Table 1 demonstrates, participants were pursuing initial teaching certificates in various grade levels and content areas and were in the latter half of their teacher preparation program. None of the participants had any direct experience with PK-12 ELs during field experiences in other courses.

Learning Experiences of Focus

To investigate which aspects of the course may be useful in supporting preservice teachers' readiness for teaching PK-12 ELs, I focused on six specific learning experiences, grounded in the research described in the literature review. Table 2 provides the research-based rationale for each focal learning experience.

An Instructional Conversation

One unique learning experience was a focused interaction between the participants and six international ELs on campus around reading and discussing a complex text. Direct interaction with ELs is an essential component of efforts to prepare future educators of ELs (Gainer & Larrotta, 2010; Jimenez-Silva & Olson, 2012; Walker & Stone, 2011). I included this experience given participants' lack of opportunity to engage in an academic task with PK-12 ELs. I hypothesized that this interaction would provide the participants valuable insights into the challenges of supporting comprehension of complex texts with ELs.

The international ELs, three from Brazil and three from China, were enrolled in an intensive year of building academic English skills to prepare to take

credit-bearing courses. The international students were not participants in this study; therefore, no data were collected about their insights around the interaction.

The international ELs all possessed strong L1 literacy practices and could read and write in English. However, they had been in the U.S. less than one year and were still developing proficiency in spoken English. I wanted the preservice teachers to experience firsthand the way that even well-educated ELs would be likely to encounter difficulties around unfamiliar vocabulary and cultural concepts when reading a complex text in English. The goal was to spark the participants' thinking about the even greater challenge of supporting text comprehension with school-age ELs, some of whom may have less academic and general background knowledge and less-developed L1 literacy skills.

The preservice teachers and the international ELs interacted in small groups during one class session to read a perspective news article written by national columnist Nicholas Kristof titled "The American Dream is Emigrating" (2014). The participants were asked to conduct an extended instructional conversation (Goldenberg, 1992-1993; Wong-Fillmore, 2009) around this complex text with their college-age EL peers. Prior to the interaction, participants answered guiding questions (see Appendix A) in order to prepare to read this complex text with ELs (Walqui, 2006). These questions included specific attention to the academic language resources of a news article text (Rose & Martin, 2012).

Simulation Activity in Spanish

Simulation activities can help preservice teachers to empathize with the challenge many ELs face to understand a teacher's verbal input without sufficient supports (Coronado & Petrón, 2008; Zhang & Peltarri, 2014). The notion that ELs require support to make instruction comprehensible is an important one for preservice teachers of future ELs to understand (Lucas & Villegas, 2011). Thus, I included a simulation experience to model supports for making oral input comprehensible.

To begin the simulation, I explained in English that I would pretend to be a fourth grade teacher and that the preservice teachers would pretend to be fourth grade students. I stated that I would speak in Spanish without supports to explain a typical school event followed by a repetition of the explanation in Spanish using comprehensible techniques.

I explained in fast-paced Spanish that students would take turns going to the nurse's office for a short hearing test. I asked them to follow a posted schedule, take the hall pass, go directly to the nurse's office, complete the hearing test, return quickly to the classroom, and give the hall pass to the next student. I stated that in the nurse's office, they would wear a pair of headphones and listen for a series of tones, or "beeps," raising the hand on the side of the ear in which they heard the "beep." I added that some "beeps" would be softer than others. At this point, I paused to ask the students what I had explained. Except for two participants seeking K-12 Spanish certifications, none of the participants, including those who had studied Spanish in school, had understood what I said.

Next, I repeated the activity in Spanish but slowed down my speech while pointing to a visual with a picture of a school nurse, an ear, and the schedule to follow. Using a pair of headphones connected to a CD player (simulating the testing instrument), I demonstrated how to listen for the "beeps," making the "beeps" both softly and loudly, while pointing to the corresponding ear and raising the correct hand. I referred to the schedule, modeled taking the hall pass, and acted out going quickly to and from the nurse's office. After this scaffolded repetition, all of the preservice teachers could explain the gist of the verbal input to a partner. In a debriefing, participants shared the frustration they felt during the first explanation as well as the way the supports had served to help them understand the second time.

Video Excerpts of Teachers in Action with ELs

Walker and Stone (2011) noted the importance of affording preserve teachers with opportunities to observe and reflect on effective teaching practices with ELs in real teaching and learning contexts, including through video observations. Participants viewed two particular videos portraying effective instructional practices and conveying insights vocalized by the video teachers. These videos depicted ELs as the intelligent, capable students that they are.

One video centered on a close reading of a science text conducted by a second grade English language arts teacher (https://www.teachingchannel.org/videos/ask-answer-questions-nea?utm_campaign=digest&utm_medium=email&utm_source=digest), and the other offered a glimpse into project-based learning taking place in various secondary classrooms in international high schools in New York (https://www.teachingchannel.org/videos/deeper-learning-for-ell-inps). The preservice teachers wrote a one-page reflection to identify culturally responsive teaching practices in the videos and explained the benefits of these instructional practices for ELs.

Writing Reflections Connected to Culturally Responsive Teaching

Twice during the course, the participants wrote three-to-four-page written reflections in response to specific

prompts (see Appendix B) around key course ideas. These reflections invited participants to imagine how to apply course concepts in their future classrooms with ELs. Opportunities to reflect on coursework experiences can be an important learning tool for preservice teachers (Galguera, 2011; Jimenez-Silva & Olson, 2012).

Reading and Discussing the SIOP Text

Walker and Stone (2011) recommended providing preservice teachers with many structured opportunities for reading and discussing proven practices for ELs. Using the SIOP textbook (Echevarría et al., 2013) opened a space for embedding collaborative, experiential learning tasks around effective instructional techniques in classrooms with ELs.

To illustrate, SIOP Feature 9 is "Key Vocabulary Emphasized" (Echevarría et al., 2013, p. 68). Understanding that ELs need ample, scaffolded, contextualized opportunities to learn and use academic vocabulary is an important concept for preservice teachers to explore (Beck, McKeown, & Kucan, 2013; Saunders & O'Brien, 2006).

To practice creating contextualized vocabulary instruction around academic words that often have multiple meanings in various contexts, participants from different disciplinary areas worked in pairs to develop a four corners vocabulary chart (Vogt & Echevarría, 2008) for an assigned academic word. For instance, one pair demonstrated how the verb *interact* has distinct meanings in science and English language arts. Another pair illustrated the different meanings of *radical* in social studies and mathematics. Multiple exposures to, and opportunities to use, academic vocabulary contributes to supporting reading comprehension and academic success for ELs and other students (Beck et al., 2013). This learning experience enabled the preservice teachers to explore a technique for introducing academic vocabulary to ELs or for ELs to use in collaboration with non-EL peers to demonstrate knowledge of these words.

Creating Two Sequential Lesson Plans

For this assignment participants imagined that six ELs from various cultural and linguistic backgrounds were in their future classrooms alongside the non-EL students, an increasingly realistic scenario in U.S. PK-12 classrooms. The scenario included that the six ELs were recent arrivals in the U.S. who possessed well-developed L1 oral language and literacy skills appropriate to their grade level. Yet these imaginary ELs were determined to be at an emerging level (Level 2) of English language proficiency (ELP) as indicated by a widely-used standardized placement test, the W-APT (www.wida.us) to assess new ELs' academic ELP through reading,

writing, listening, and speaking tasks related to ELA, social studies, mathematics, and science.

The development of two sequential lesson plans required the preservice teachers to design instruction anchored in grade-level state academic content standards. Moreover, this learning experience obligated the preservice teachers to enact understandings about critical components of instruction for ELs. Such instruction includes tapping into ELs' funds of knowledge, creating high-challenge, appropriately scaffolded interaction with non-EL peers, integrating the four language modalities, and embedding formative assessments (Genesse et al., 2006; Walqui, 2006; Zwiers, O'Hara, & Pritchard, 2013).

Data Collection

Various data were collected to address the research questions. The first data source was a 12-item pre- and post-course survey, adapted from Durgunoğlu and Hughes (2010), designed to gauge changes in participants' confidence in their readiness to teach PK-12 ELs. Survey responses were based on a 4-point Likert scale: strongly disagree, disagree, agree, or strongly agree. The survey items (see Appendix C) addressed preservice teachers' confidence in their knowledge of specific instructional skills (e.g., creating formative assessments), their understanding of salient constructs (e.g., leveraging ELs' funds of knowledge), and their overall capacity to implement culturally responsive instruction with ELs from diverse cultural, linguistic, and educational backgrounds.

Another data source was a post-course measurement tool (see Appendix D). The first part comprised three open-ended questions inviting participants to explain any changes in their perceptions of ELs and in their understanding of culturally responsive teaching practices. The third question asked participants to explain what they had learned through conducting an instructional conversation around the news article with the college-level ELs. Additionally, the post-course measurement tool required participants to explain the degree of helpfulness of the other five focal learning experiences.

Data Analysis

The 12-item survey data were analyzed using descriptive statistics to determine the percentage of participants who disagreed or strongly disagreed and the percentage of participants who agreed or strongly agreed pre- and post-course with each survey item.

Participants' responses to the three open-ended questions administered post course were analyzed to determine initial codes reflecting any changes in the preservice teachers' perceptions of ELs and knowledge

about teaching and learning with ELs. These initial codes were then organized into core categories and analyzed for patterns, or themes, that emerged (de Jong & Harper, 2011; Huberman & Miles, 2002). For example, participants' responses to the question "How did your understanding of culturally responsive teaching practices change during this course?," that were related in any way to changed perceptions about using knowledge of ELs' cultures, beliefs, interests, or experiences in lesson design were assigned to the category, "Use ELs' funds of knowledge to help them learn." The number of responses in each category was used to determine prevalent themes in the data (de Jong & Harper, 2011).

The third data set representing participants' perceptions of the degree of helpfulness of five of the focal learning experiences was analyzed in terms of participants' ratings of each task on a continuum from "very helpful" to "not very helpful." A Likert scale was not provided for these responses in order to provide participants with greater freedom to identify how helpful each learning task was. Thus, responses that included adverbs such as "very," "extremely, and "immensely," in front of the adjective "helpful" were counted as a "very helpful" response. Responses simply containing the word "helpful" were counted as a "helpful" response, and responses indicating degree such as "kind of," "sort of," or "a little bit" helpful were counted as a "somewhat helpful" response.

Open-ended responses based on why each learning experience was perceived to be helpful or what had been learned from each learning task were analyzed in terms of the initial codes, categorization, and theme determination described above. These analyses allowed for triangulation of data through the emergence of similar patterns in each data set.

Results

Pre- and Post-Course Survey Responses

Table 3 below reflects the changes in percentages pre- to post-course on the 12 survey items gauging participants' readiness to teach ELs. These data reveal that the preservice teachers' confidence around teaching ELs and knowledge of salient concepts about features of effective instruction for ELs increased markedly pre- to post-course.

Particularly notable are increased levels of confidence around building on ELs' funds of knowledge in designing lessons, appreciating the process of second language acquisition, differentiating instruction in a way that accounts for ELs' needs, and keeping the cognitive challenge high while scaffolding ELs' participation in instructional tasks.

Responses to Three Open-Ended Questions

The second data set revealed participants' responses to three open-ended questions (see Table 4 below). Table 4 presents the themes that emerged in the data after initial coding and categorizing. The number in parenthesis following each theme represents the number of participants' responses related to that theme. Some participants wrote lengthier responses reflecting more than one theme.

Several responses to the first question focused more on what participants had learned about teaching ELs and their feelings about becoming teachers of ELs than on shifts in perceptions about ELs. For example, comments included, "ELs' success depends on the teacher's ability," and "It's not as scary to think about teaching them now." However, responses also included comments such as, "ELs are just as smart as other students," and, "They have skills in their L1—they're capable."

Responses to the second question aligned with the preservice teachers' perceptions of confidence in their preparation to teach ELs suggested by the survey items. Written comments related to ELs' funds of knowledge included, "Ask ELs about their culture," and "culture and learning go hand-in-hand." Importantly, responses also reflected that effectively teaching ELs must go beyond connecting to ELs' cultures. One participant noted, "It's more than just culture. Everything you do to get your message across matters." Others wrote, "Use different techniques," "Create meaningful activities," "Use scaffolding techniques," and "Involve ELs' parents." These responses suggest that some of the participants had understood that culturally responsive teaching includes planning well-designed instruction that is responsive to ELs' academic needs.

The preservice teachers commented extensively about what had been learned from reading a complex text with their international EL peers. These responses suggest that this interaction represented a powerful learning experience about effective instructional techniques, ELs' characteristics as learners, and critical dispositions for teachers of ELs to have. For example, participants wrote, "Chunk the text—break it down," "Discuss the text and ask questions while reading," "Graphic organizers really help," and "Allow the ELs to ask questions" as evidence of learning about effective instructional practices.

Awareness about ELs as learners was evidenced by comments such as, "Sometimes they pretend to understand when they don't," "They have varying levels," "They want to practice speaking," and "They are motivated to achieve." Others commented on important teacher dispositions, such as "Be animated and motivated when teaching," "The ELs expect the teacher to assist," and "The teacher must listen closely."

It is noteworthy that numerous comments centered on what the preservice teachers noticed about the relationship between vocabulary knowledge and text comprehension during this experience. Many participants commented that, along with academic

Table 3
Changes in Participants' Readiness to Teach ELs

Statement I feel confident . . .	Pre/ Post	Percent Disagree or Strongly Disagree	Percent Agree or Strongly Agree
#1 that I can use research-based techniques to scaffold instruction for ELs at various English language proficiency (ELP) levels.	Pre Post	61% 0%	39% 100%
#2 that I can differentiate instruction in a way that is attuned to ELs' ELP levels.	Pre Post	83% 0%	17% 100%
#3 that I can modify and adapt assessments for ELs at different levels of ELP.	Pre Post	56% 6%	44% 94%
#4 that I can embed formative assessments in lessons with ELs to measure their progress toward learning objectives.	Pre Post	56% 0%	44% 100%
#5 in my overall ability to implement culturally responsive teaching practices in my future classroom.	Pre Post	14% 6%	61% 94%
#6 that I have an understanding of the difference between social language and the academic English needed for success in school.	Pre Post	33% 0%	67% 100%
#7 that I know how to leverage ELs' funds of knowledge in lesson design.	Pre Post	94% 6%	6% 94%
#8 that I have a fundamental understanding of the continuum of second language acquisition.	Pre Post	94% 17%	6% 83%
#9 that I can write both content and language objectives connected to the CCSS and state academic content standards.	Pre Post	61% 11%	39% 89%
#10 that I am knowledgeable about the challenges ELs may face to comprehend informational texts in different content areas.	Pre Post	39% 0%	61% 100%
#11 that I can design instructional tasks that are cognitively challenging for all learners while providing appropriate scaffolds for the language demands of the instructional tasks according to ELs' ELP levels.	Pre Post	67% 0%	33% 100%
#12 that I am fundamentally prepared to teach ELs from a wide variety of linguistic, cultural, socioeconomic, and educational backgrounds.	Pre Post	100% 6%	0% 94%

Table 4
Participants' Responses to Three Open-Ended Questions

Open-Ended Question	Themes Emerging from Data
Q#1 In what ways, if any, did your perception of ELs change during this course?	Perceptions related to: Challenges ELs Face and How Teachers Can Help (10) ELs Intelligent like English-Speaking Peers (7) Less Anxiety about Teaching ELs (5)
Q#2 How did your understanding of culturally responsive teaching (CRT) practices change during this course?	Understanding related to: Use ELs' Funds of Knowledge to Help Them Learn (10) CRT Means More than Just Connecting to ELs' Cultures (6) Teachers' Instructional Decisions Matter (7)
Q#3 What did you learn from the session with the college-level ELs around reading and discussing a text?	Awareness related to: Challenge of Academic Vocabulary (5) Need to Explain Basic Vocabulary (10) Need to Ask Frequent Questions (5) Amount of Time Needed to Read Text (4) ELs' Characteristics as Learners (6) Instructional Techniques that Work (16) Teachers Beliefs/Attitudes/Dispositions (9) ELs' Specific Skills/Needs (5)

words, basic vocabulary words were unfamiliar to the ELs and required explanation. Revealing comments about vocabulary included, "Highlight and explain challenging words," and "Multiple-meaning words need explained." Others noted, "ELs can decode but might not know the meaning," "If they can't pronounce it, they probably don't know the meaning," and "Vocabulary is a serious challenge even if they have good English skills."

Finally, Table 5 below presents participants' perceptions related to the degree of helpfulness of five focal learning experiences included in the course. The degree of helpfulness is indicated as "not very helpful" (NVH), "somewhat helpful" (SH), "neutral" (N), "helpful" (H), and "very helpful" (VH), followed by the number of participants choosing each response. The table highlights principal themes that emerged from the preservice teachers' explanations of why a particular learning task was helpful and/or what had been learned and includes the number of participants' responses related to each theme. Responses representing opinions such as, "I didn't like my grade on the reflections," "The lesson plans took too much time," and "I prefer to listen to the instructor talk" were not considered as related to a theme.

The preservice teachers' perceptions of why these learning experiences were helpful and what they had learned about teaching ELs served to triangulate findings from the other data sets. That is, data suggest that these particular learning experiences contributed to growth in participants' readiness to teach ELs in the future.

Pointedly, responses to discussing the SIOP textbook with peers suggest an appreciation for coursework that foregrounds a sociocultural approach to sharing understandings about course content. For example, comments included that discussion with peers allowed participants to "unpack the information in the text," "explain ideas and what we learned," and "share my ideas as well as learn from others to further my knowledge."

Limitations

The small number of participants and descriptive nature of this study do not permit broad generalizations of the findings. Yet with a dearth of research on preparing teachers to teach ELs, descriptive studies can provide valuable insights (Bunch, 2013). In addition, the preservice teachers' increased readiness to effectively teach ELs may not be solely attributable to taking this course. Although other education courses provided only cursory attention to ELs, if at all, other salient aspects of teaching and learning were explored in participants' other education courses.

Discussion

The goal in this study was to contribute to the extant research around preparing educators to teach and serve ELs with excellence and equity (Lucas & Villegas, 2011; Walker & Stone, 2011). Specifically, I aimed to join the conversation initiated by teacher

Table 5
Degree of Helpfulness of Focal Learning Experiences and Rationale

Learning Experiences	Degree of Helpfulness	Reason Why Task Was Helpful/What Was Learned
Observing the instructor give directions in Spanish without any supports and then again in Spanish with supports	VH = 13 H = 4 NVH = 1	Visual Aids/Gestures Critical (12) Increased Empathy for ELs (4) Use Voice as Tool (2) Slow Down Speech (1)
Watching and discussing excerpts of videos of teachers' instructional practices in real classrooms with ELs	VH = 7 H = 10 SH = 1	Showed How SIOP techniques work (8) Gave Teaching Ideas by Good Teachers (5) Showed Reality of Teaching (4) Showed how to Integrate Language and Content (1) Appealed to me as Visual Learner (1)
Writing reflections connected to major course themes	VH = 2 H = 12 N = 1 SH = 3	Helped me Realize what I've Learned (8) Learned about My Own Teaching Style (2) Intellectual Exercises Important (1) Liked Thinking about Techniques to Use as Future Teacher (1)
Creating fully adapted lesson plans for level 2 ELs	VH = 11 H = 7	Good Practice for Real Teaching w. ELs (4) Way to Apply What I Learned (3) Made me Think about What I Know about Lesson Planning (3) How to Scaffold w/o Simplifying Content (1) Increased My Confidence (2) Detailed Lesson Plans are Important (1)
Reading SIOP textbook and discussing in class in pairs and groups	VH = 6 H = 9 SH = 3	Hearing Opinions/Getting Ideas from Others Helps Me Learn (9) Discussion Matches My Learning Style (1) Think-Pair-Share Works (2) Great Book with Good Strategies (1)

educator colleagues (Gainer & Larrotta, 2010; Galguera, 2011; Jimenez-Silva & Olson, 2012) around potentially powerful learning experiences that can foster preservice teachers' confidence in, and specialized knowledge for, creating optimal teaching and learning environments for PK-12 ELs.

Research suggests that teacher preparation coursework can positively influence the knowledge, dispositions, and skills critical for teaching and serving ELs (Busch, 2010; Sowa, 2009; Walker & Stone, 2011). Well-articulated frameworks (de Jong & Harper, 2011; Lucas & Villegas, 2011) enable teacher educators to make principled decisions around course design. Results from the present study affirm that research-based learning experiences can positively enhance preservice teachers' foundational readiness to teach ELs even when teacher education programs are situated in largely monolingual, monocultural areas.

Interaction with PK-12 ELs is a key experience for preservice teachers (Gainer & Larrotta, 2010; Jimenez-Silva & Olson, 2012). Enabling such interaction can be hindered by the geographical location of a teacher education program. This small study suggests that "thinking outside the box" to create interaction between preservice teachers and international ELs on a college campus can spark analogous understandings about teaching and learning with ELs that can be applied in the PK-12 context.

Teacher educators are responsible for continually learning about and creating learning experiences that build preservice teachers' confidence in, and specialized knowledge for, meeting ELs' affective and academic needs (Durgunoğlu & Hughes; Galguera, 2011, Jimenez-Silva & Olsen, 2012). We can respond to the call to design and implement future action research that expands the knowledge base about the specific kinds of learning experiences that may enable

preservice teachers to develop the knowledge, disposition, and skills to create optimal learning environments for PreK-12 culturally and linguistically diverse learners (TESOL International Association Research Agenda, 2014). This research should include a focus on ways that coursework can foster preservice teachers' explorations of their own cultural practices as a bridge to understanding the ways that ELs' cultural and language identities can influence teaching and learning (Jimenez-Silva & Olsen, 2012).

As teacher educators we are further charged with enacting the reflective practices and commitment to lifelong learning that we promote with preservice teachers. In particular, conducting this study has challenged me to contemplate how to incorporate the kinds of learning experiences that can more deeply foster preservice teachers' pedagogical language knowledge (Bunch, 2013; Galguera, 2011). Certainly this notion has implications for teacher educators in varied contexts around the world.

I am also inspired to consider a reconceptualization of pedagogy for supporting ELs to engage in analytical practices through language in action around content concepts with non-EL peers (Heritage et al., 2015; Kibler et al., 2015; Zwiers et al., 2013). Teacher educators have a responsibility to learn about this reformulation of pedagogy and to design learning experiences for preservice teachers that build future educators' preparedness to enact such practices in real schools with PK-12 ELs. Providing an excellent, equitable education for PK-12 ELs in U.S. schools and language-minority children around the world may hinge upon teacher educators' commitment to this responsibility.

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Appendix A

Preparing to Conduct an Instructional Conversations around a Complex Text

Text: The American Dream is Emigrating   By Nicholas D. Kristof
        Source: Pittsburgh Post-Gazette, 10/28/14

1. How would you set a purpose for reading this article? That is, what do you expect readers to understand or
    be able to discuss during reading?

2. What background building around American cultural/societal concepts would you need to do <u>before</u>
    reading this text with SVC ESL students?

3. How would you explain the language features in this news article? That is . . .

    What genre does it fall in—is it a report of information? A persuasive piece? A compare
    and contrast text? A problem/solution text?

    Who is the audience? Why is the topic important to the audience?

    Is the text in chronological or does it "switch" between past and present? Why?

    Is the text a mixture of fact and opinion or one or the other? How can we help ELs
    distinguish between "fact and opinion" in this text?

4.   In a nutshell, what's the main argument in this text? How does the author support his argument?

5. Study the list of key words and phrases in the chart below. How would you explain their meanings?
    Which words/phrases would you explain *before* reading? *During* reading?

Important Vocab/Phrases to Explain in this Text	*How might you explain/illustrate the meaning of these key words and phrases?*
The American Dream	
Education as the escalator to opportunity	
Education as the lubricant of social and economic mobility	
Egalitarian (or mass) education	
Growing gap between rich and poor	
Civil rights challenge	
An ethos that was born in America	

6. At which points in the text would you "check for understanding?" What exactly will you ask to decide
    whether the ELs have sufficient comprehension to continue reading? Make a list of Qs that you will ask
    during reading:

7. How can you invite the ELs to share their own experiences, thoughts, and opinions while reading this text**?**
    What's your opinion about Mr. Kristof's argument? Do you agree or disagree with him? How will you
    explain your opinion to the ELs?

Appendix B

Prompts for Written Reflections

Prompt for Written Reflection #1:

Explain your understanding to date of what you will need to do as a future teacher to design and deliver effective, high-quality instruction for English learners (ELs) from diverse educational, cultural, and language backgrounds. What is your understanding to date of the way ELs' backgrounds may influence the instructional decisions that you will make in your future classroom? That is, what will you need to know about your ELs in order to make sound decisions around instructional design? Why is this effort important?

Based on what you have learned thus far, which specific instructional practices will you incorporate into your teaching at the grade level and in the content area that you aspire to teach? How will these instructional practices support ELs in your future classroom in learning academic content and strengthening their academic English proficiency?

Be sure to support the main points that you decide to develop with examples and explanations from the text(s) you've read AND from your own thinking!

Prompt for Written Reflection # 2:

Since the last written reflection, we have read about and discussed the important SIOP features of strategy instruction, student-to-student interaction, Accountable Talk, creating opportunities for students to practice and apply what they have learned, and conducting Instructional Conversations around texts.

Write a reflection to explain *how* you will employ some of these instructional features as a future teacher of diverse ELs. Be sure to explain *why* these features are essential for supporting the academic achievement of culturally and linguistically diverse learners. That is, include an explanation of the way that employing these instructional practices can contribute to creating a *culturally responsive* teaching and learning environment in your future classroom.

Appendix C

Pre-Course and Post-Course Survey

Please circle the number that corresponds to your own personal level of agreement with the following statements:

1. *I feel confident that I can use research-based techniques to scaffold instruction for ELs at various English language proficiency levels.*

1		2	3	4
strongly disagree	disagree	agree	strongly agree	

2. *I feel confident that I can differentiate instruction in a way that it is attuned to ELs' English language proficiency level.*

1		2	3	4
strongly disagree	disagree	agree	strongly agree	

3. *I feel confident that I can modify and adapt assessments for ELs at different levels of English language proficiency.*

1		2	3	4
strongly disagree	disagree	agree	strongly agree	

4. *I feel confident that I can embed formative assessments in lessons with ELs to measure their progress toward learning objectives.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

5. *I feel confident in my overall ability to implement culturally responsive teaching practices in my future classroom.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

6. *I feel confident that I have an understanding of the difference between social language and the academic English needed for success in school.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

7. *I feel confident that I know how to leverage ELs' funds of knowledge in lesson design.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

8. *I feel confident that I have a fundamental understanding of the continuum of second language acquisition.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

9. *I feel confident that I can write both content and language objectives connected to the Common Core State Standards and state academic content standards.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

10. *I feel confident that I am knowledgeable about the challenges ELs may face to comprehend informational texts in different content areas.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

11. *I feel confident that I can design instructional tasks that are cognitively challenging for all learners in the grade level I aspire to teach while making appropriate adjustments to the language demands of the instructional tasks according to ELs' English language proficiency levels.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

12. *I feel confident that I am fundamentally prepared to teach ELs from a wide variety of linguistic, cultural, socioeconomic, and educational backgrounds.*

1		2	3	4
strongly disagree	disagree	agree		strongly agree

Appendix D

Post-Course Open-Ended Survey

Please write a brief response to each question below:

1.   In what ways, if any, did your perception of ELs change during this course?

2.   How did your understanding of *culturally responsive teaching* practices change during this course?

3.   What did you learn from the session with the college-level ELs around reading and discussing a text? Please make a very specific list about everything you learned from this experience:

4.   Please explain which specific learning experiences you found helpful in preparing you to teach ELs during this course? Major learning experiences are listed in the left hand column. In the right hand column, please briefly explain how helpful each experience was, if at all, and what you learned from the experience if it was helpful. If a learning experience was not at all helpful, please explain why not.

Learning Experience	*Degree of Helpfulness & What I Learned*
A. Observing the instructor give directions in Spanish without any scaffolds and then again in Spanish with scaffolds	
B. Watching and discussing excerpts of videos of teachers' instructional moves in real classrooms with ELs	
C. Writing reflections connected to major course themes	

D. Creating fully adapted lesson plans for Level 2 ELs	
E. Reading SIOP textbook and discussing SIOP practices in pairs and groups in class	

Differentiating Instruction for Large Classes in Higher Education

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In response to the diverse needs of individual students—their unique abilities, interests, learning styles, and cultural backgrounds—K-12 teachers have been using differentiated instruction, supported by research, for decades. While positive results have been shown in K-12 education, the literature to support differentiated instruction in higher education to meet the diverse needs of college students remains inconclusive. To contribute to the literature in this area, this exploratory and qualitative study examined the use of differentiated instruction at a large research institution situated in the southeastern United States with a focus on courses with enrollment of 50 students or more. The participants included 20 instructors teaching large classes within 11 departments and two schools of an academic college that encompasses the arts, humanities, and social and human sciences. The findings suggest that differentiated instruction in large classes at a research university is challenging. Moreover, instructors teaching large classes need a better understanding of differentiated instructional strategies and how to implement them.

Instruction in higher education is dominated by one-size-fits-all pedagogical method, which poorly serves a diverse student body (Ernst & Ernst, 2005). Rather than learner-centered approaches, the current educational system is often supportive of keeping traditional ideals and the one-size-fits-all approach to teaching. The presence of a high percentage of college students repeating an academic course is an indication that traditional methods cause a mismatch between instruction and students' academic needs (Dosch & Zidon, 2014). Although some faculty in higher education have embraced differentiated instruction, the assumption remains that most college instructors will focus on the traditional lecture format (Chamberlin & Powers, 2010). However, contemporary students, the millennials, are not traditional students. As evidence of this, they generally do not wear watches, read newspapers, carry books, or use handwriting. Why would they? They have cell phones, laptops, and iPads. They interact with their friends through social media, blogs, and online forums.

While differentiated instruction (i.e., tailoring instruction to each student's learning style, readiness level, and interest) has been applied with success to primary and secondary classrooms for over a decade, it has limited documented application in the undergraduate classroom. In addition, few research studies exist regarding differentiation instruction at the college level. This absence can possibly be attributed to the following reasons: (a) large class sizes, (b) minimal number of contact hours with students, (c) time commitment to create multiple means of student assessment while also meeting research and service obligations, and (d) controversy over ethical issues such as fairness in grading (Ernst & Ernst, 2005).

The success of this student-centered strategy in K-12 education provides information for higher education institutions to implement this strategy in their classrooms. Students are whole people; therefore, differentiation should transpire in a holistic manner. Differentiation must consider readiness levels, interests, learning profiles, and affect regarding the teacher, course material and environment (Dosch & Zidon, 2014). Differentiated instructional strategies are not only important for primary and secondary level students, but college students can benefit too (Williams-Black, Bailey, & Lawson, 2010). To be sure, a "one size fits all" approach to teaching does not work well in elementary and secondary educational venues. So why would it work in higher education?

Thusly, the purpose of this exploratory and qualitative research was to examine college instructors' understanding of differentiated instruction and their perceptions of the challenges to implement differentiated instruction in large classes as a strategy for students to achieve a greater level of individual growth and academic success in higher education. As there is little consensus in the literature about the definition of a large class, Christopher's (2011) definition of a large classroom setting was used for this article: it varies in size from 50 to 500 students.

Differentiated Instruction Defined

Differentiated instruction can be a challenge to practice because it touches on all aspects of teaching (Tomlinson, 2004) and entails far more than the adaptation of curricula and teaching strategies. Chamberlin and Powers (2010) outlined seven core principles that guide differentiated instruction:

1. Teachers communicate to students what is essential to learn about a subject so as to link curriculum and instruction to assessment. In a

differentiated classroom, assessment is ongoing and serves to inform instruction that includes students' understanding of the material, their personal interests, and learning profiles.

2. Teachers respond to student differences. They accept students where they are but with the expectation that they will understand all that they can.

3. All students are expected to participate in respectful work. They are challenged at a level that is attainable through lessons that emphasize critical thinking intended to promote individual growth.

4. Teachers and students collaborate in the learning process.

5. Teachers are flexible with utilizing groups and whole class discussions. Students work in diverse groups based upon their readiness, interests, or learning profiles. Group work is intermixed with whole class discussions and activities.

6. The approach to differentiated instruction is proactive versus reactive. Lesson plans are structured to address the variance in learner preferences rather than adjusting instruction when the lesson does not work for some students.

7. Space, time, and materials are implemented to suit the needs of the various learners (Chamberlin & Powers, 2010).

To better understand differentiated instruction, one needs to understand how students learn. The ways in which a student learns most effectively can be described through a learning profile. A learning profile includes a student's learning preference(s), family structure, favorite hobbies, interests, state assessment scores, reading scores, and fluency in reading recordings. Leading elements also include group orientation, cognitive styles, intelligence preferences, and learning environment preferences. Differentiation guided by learning profiles allows students to learn by means that are natural and efficient (Anderson, 2007; Santangelo & Tomlinson, 2009). Previously, instructional researchers have focused primarily on learning styles (e.g., Pham, 2012). For example, visual learners have good visualization skills, auditory learners make contact through verbal communications, and kinesthetic learners benefit most from hands-on activities. Pham cautioned that, although there is copious literature to support the learning styles theory and the need to differentiate instruction centered on learning styles, there is also research against the learning styles theory. In view of the mixed findings on learning styles, teachers may find success with differentiating instruction in a more holistic manner based on students' backgrounds, prior knowledge, and abilities (i.e., learning profiles) rather than learning styles.

Responding to students' learning profiles can effectively achieve content differentiation when utilizing the following suggested strategies: (a) using visual, auditory, and kinesthetic ways to present material; (b) using examples and illustrations representative of a variety of ways of thinking; and (c) using both deductive and inductive formats to present information (Santangelo & Tomlinson, 2009). In addition, content can be successfully differentiated by responding to students' interests in the following manner: (a) giving students the opportunity to focus on their preferred interests, (b) utilizing examples that relate to students' experiences, and (c) focusing content on student-driven topics and inquiry. To ensure successful outcomes, teachers need to be fully aware of students' cognitive development and readiness levels, as well as their learning styles, in order to use appropriate instructional strategies that focus on learning principles and applications. These strategies help instructors connect what students learn in class to real-world applications (Pham, 2012). These strategies mirror the seven core principles outlined by Chamberlin and Powers (2010).

In summary, differentiated instruction is "a collection of best practices strategically employed to maximize students' learning at every turn, including giving them the tools to handle anything that is undifferentiated" (Wormeli, 2005, p. 28). Although differentiated classes are challenging, students are held accountable and tend to achieve more. An undifferentiated my-approach-or-nothing style of teaching either allows students to coast or forces them to drop out (Wormeli, 2005), thus resulting in the aforementioned need to retake courses. Instructors who differentiate take into consideration that every student is unique with divergent learning styles and preferences (Anderson, 2007).

Benefits of Differentiated Instruction

Differentiating instruction has many benefits both to the learner and to the instructor. When used by instructors, this teaching strategy promotes engagement, facilitates motivation, and helps students make the connection with what is being taught in the classroom to the things they value outside of class. When such connections are made, students tend to improve in their retention of the information. In addition, differentiation can encourage students to discover new interests (Santangelo & Tomlinson, 2009). Tulbure (2011) posited the following additional advantages: it places students as the focal point of the instructional process, it allows flexibility in learning tasks, it revaluates and respects the differences between individual student needs and preferred learning modalities, and it levels the field for student success. Further, differentiated instruction empowers instructors to be responsive rather than reactive to

students' unique and individual personalities, backgrounds, and abilities (Anderson, 2007).

According to Tomlinson (2004), teachers can differentiate their instruction via four methods: 1) content, 2) process, 3) product, and 4) learning environment. Activities based on various Bloom's Taxonomy levels fall within the content category. Process refers to how a student makes sense of the information and learns. Delivering material according to students' preferred learning style is process. Product is the medium through which the students show what they know and are capable of doing based on their investigation of a particular topic. Assessment based on students' preferred learning style is product. Meeting the physical and psychological needs of students refers to the learning environment. Tomlinson's model suggests that teachers promote equity and excellence by differentiating high quality content, process, and product when instruction is centered on students' readiness levels, interests, and learning profiles (Santangelo & Tomlinson, 2009). This position is supported further by Dosch and Zidon (2014), who also added affect to the list for instructional differentiation. Furthermore, affect addresses students' emotions concerning school-related issues that are influential to their learning. Other researchers view that affect is embedded within the content, process, and product (Dosch & Zidon, 2014); therefore, many studies of differentiated instruction do not include affect with the other three diagnostic elements.

In summary, Wormeli (2005) addressed both the most common downsides about differentiated instruction while offering the following benefits: (a) students' success on standardized assessments can be attributed to differentiated approaches so long as they are taught to be savvy in test-taking; (b) successful teachers offer students varied opportunities to encounter content (whole-class instruction, small groups, or individually); (c) pairing what is fair and developmentally appropriate for each student increases the challenge, not the workload; (d) differentiation will prepare students for a differentiated real world; and (e) differentiation is diverse within itself and what works well in one classroom may not work in another. Although differentiated instruction has both benefits and drawbacks, differentiated instruction embraces an all-inclusive range of teaching strategies and approaches.

Differentiated Instruction in Higher Education

Differentiating instruction in higher education may differ from differentiating in grades K-12 because of the inherent differences in the two environments. These differences have the potential to impact how differentiation of instruction occurs in higher education. In an obvious difference, K-12 teachers usually have more contact time with students when compared to instructors in higher education. In higher education, the common expectation is that a topic will only be covered once in a class. This reality poses a challenge for instructors in higher education to revisit or re-teach a topic when students need further explanations or some other form of differentiation. Therefore, these instructors would need to be purposeful when utilizing class time. A second complication of the environment is that instructors in higher education seldom have their own classroom and, as such, may be limited in how much they can modify the classroom environment (Chamberlin & Powers, 2010), whereas K-12 instructors usually have their own classroom.

Among the few studies within higher education, findings show how differentiation in higher education has challenges and benefits that are both similar and different from the findings in K-12. For example, Santangelo and Tomlinson (2009) conducted a qualitative self-study in an introductory graduate education course using differentiated instructional strategies such as supplemental readings, tiered assignments, interest-based centers, independent study projects, flexible groupings, flexible timelines, and reading comprehension support. They found that effective differentiation requires a considerable amount of time, effort, and dedication from the instructor. Although preparing for any college course can be deemed as considerable, preparing for a course that engages differentiated content, processes, and products is more intensive. They also found that differentiated instruction gave each student the opportunity to acquire knowledge and understanding of course content and activities based upon their individual readiness, interests, and learning profiles.

Ernst and Ernst (2005) explored the characteristics of differentiated instruction in an undergraduate political science classroom by evaluating student and instructor responses to this teaching method. Implementing a case study methodology, the principles of differentiated instruction were applied to a public policy course taught to 35 undergraduates during a spring semester. Their findings revealed that students generally responded favorably to the differentiated approach, reporting higher levels of intellectual growth, interest in the subject, and satisfaction with the course when compared to students in the non-treatment group. Likewise, the instructor's evaluation of the approach was generally positive, though the considerable time commitment in teaching a differentiated class and concerns connected to the fairness of the approach were perceived as limiting factors. Student responses further revealed that they have a need to know, as opposed to elementary school students who are less likely to question the intentions of the instructor or the fairness of the course. College-level students have a tendency to want to know the instructor's motivations, particularly

when their definition of equality is tested. Moreover, college students can be philosophically opposed to the differentiated instructional method while at the same time report that they enjoyed the class and found assignments to be rewarding and aptly challenging.

Chamberlin and Powers (2010) conducted a quasi-experimental pre-test and post-test control group study using differentiated instruction in an undergraduate first-year math course at two universities. For the course, three instructors taught a section for preservice teachers using similar differentiated instructional methods while four instructors utilized traditional methods that formed the control group. A variety of quantitative and qualitative methods were used to measure the outcomes of the instructional methods. The results indicated the experimental group made higher gains on math scores from pre-test to post-test when compared to the control group. The results also revealed that the undergraduate students successfully met the course objectives and that the participants in the experimental sections perceived the course more positively due to the differentiated instructional methods. The researchers found that for differential instruction, explicitly identifying the course learning objectives early was important, and organizing the course by units or chapters was also helpful. They determined that differentiating every class or every assignment was not necessary. They likewise recommended to begin small, incorporating just one or two ideas at a time and maintaining a log of learning objectives and student progress while also permitting different products for class projects. Responding to student interest and learning profiles, along with incorporating a variety of instructional formats, provides students opportunities to learn in their preferred style.

Diversity in higher education is on the rise; thus, the traditional one-size-fits all, teacher-centered model of lecture-style teaching sets students up for failure (Dosch & Zidon, 2014). Some instructors assume their job is done after they tell students the information. Telling or presenting is not effective pedagogy. Accomplished instructors teach in such a manner that students find both the information and skills meaningful (Wormeli, 2005).

Purpose and Research Questions

Increasingly, research and development in learning theories within elementary and secondary education reveal the significance of differentiated instructional methods, yet very little attention to this approach has been given in higher education, perhaps because of the differences in environment between K-12 and higher education or other challenges for higher education faculty. Therefore, the purpose of this exploratory and qualitative study was to examine instructors'

understanding of differentiated instruction and their perceptions of the challenges to implement differentiated instruction in large classes as a strategy for students to achieve a greater level of individual growth and academic success in higher education.

Four research questions guided this study:

1. How do instructors teaching large classes in higher education define differentiated instruction?
2. To what level do instructors teaching large classes in higher education use differentiated instructional strategies?
3. What perceptions do instructors in higher education have of using differentiated instructional strategies in large classes?
4. How do instructors in higher education describe the benefits and challenges of using differentiated instruction in large classes?

Materials and Methods

Instructor Perceptions of Differentiated Instruction (IPDI) Survey

The questions used in the IPDI Survey were developed based upon an extensive review of the literature and the work of Santangelo and Tomlinson (2009). In addition, the following self-reported demographic information was captured from survey participants: gender; race; age; rank; number of years teaching in higher education; number of large classes taught, including online, hybrid, and face-to-face; and department or school teaching within the academic college. The survey included seven multiple choice questions and two open-ended questions aligned with the purpose of the study and the research questions (see Appendix). The survey questions were designed to elicit information for exploring the research questions (see Table 1.) The final survey question (Q11), "Please share any other comments you have about differentiated instruction in higher education," captured information to answer all four research questions.

Data Collection and Analysis

Qualitative and quantitative data were collected by means of the online IPDI survey created through the web-based research tool Qualtrics. Participants for the survey included instructors teaching large classes within an academic college at a research institution in the southeastern United States with an enrollment of 33,000-plus students. The College is comprised of 11 departments and two schools and has 560 faculty members and 3,237 undergraduate majors. A large class was defined as 50 to 550 students being taught by one

Table 1
Research Questions (RQ) and IPDI Survey Questions (Q)

Research Questions	Topical Concept	Survey Questions
RQ1	Definition of differentiated instruction	Q3
RQ2	Use of differentiated instructional strategies	Q4, Q6
RQ3	Perceptions of using differentiated instructional strategies in large classes	Q7
RQ4	Benefits and challenges of using differentiated instruction in large classes	Q5, Q8, Q9, Q10

Table 2
Participants' Definition of Differentiated Instruction

Theme (description)	Number of Endorsements	Percentage of Endorsements
Content: (activities based on various Bloom's Taxonomy levels)	2	11.7%
Process: (delivering material to students' preferred learning style)	10	58.9%
Product: (assessment based on students' style)	3	17.7%
Learning Environment: (physical and psychological needs)	2	11.7%

Note: The number of endorsements is higher than the number of participants because participants included more than one answer representing multiple themes

faculty member or instructor. Instructors teaching 50 or more students were identified using the Time Table of Classes available through the university student, faculty, and employee information gateway at the time of the survey. The researchers identified 108 instructors who taught sections within the college that met the criteria; the sections represented the exposure of potentially 9,898 students to large-classroom settings. In compliance with the university's research protocol, approval was secured from the Institutional Review Board prior to data collection.

To encourage participation in the study and to maintain diversity and breadth in the purposeful sample pool, the researchers sent a recruitment e-mail to each of the identified instructors. The introductory e-mail explained the purpose of the study and the criteria for participation, which included that participants were (a) currently teaching in the College and (b) were identified as teaching large classes in the fall semester. One week prior to the spring semester, the e-mail was sent by the researchers to instructors requesting that they complete the IPDI online survey. Willing and qualified participants were instructed to complete the survey during an open period of seven days.

Utilizing an open coding strategy (Rossman & Rallis, 2011), the researchers independently coded the open-ended questions of each completed survey to identify common descriptors instructors used to describe their perceptions of differentiated instruction and the challenges of implementing differentiation in large classes. In a second session of coding, the researchers jointly agreed on categories through ongoing dialogue. Unique words or phrases were listed during the coding sessions to form conceptual categories and overarching themes. Quotes were also identified for inclusion in the second level of analysis.

Demographic Profile of Participants

Of the 20 instructors (19%) that responded to the survey, 13 (65%) were female, and six were male. They ranged in age from 30 to 79 years old. Eighteen of the participants (90%) were white, and two identified as other. Participants reported their rank as follows: five instructors, five assistant professors, six associate professors, and four full professors. The number of years teaching in higher education ranged from one to more than 10 years. Of the 20 participants, faculty had some to extensive experience in teaching large classes. For example, 50% had taught two or more large classes. Five had taught between three and five classes. Meanwhile, four had taught seven or more large classes. The range of

subject matter represented in the participants was also diverse. Enrollment in the large classes varied according to academic discipline: two participants taught in Consumer Sciences; two taught in Communication, English, and Religion and Culture. History, Philosophy, and Sociology had one participant each. Four were from Human Development, and three were in the School of Performing Arts. The participant profile represents an exposure of instructors to 3,494 (35.3%) out of the 9,898 potential undergraduate students.

Discussion of Findings

Research Question One: Definition of Differentiated Instruction

The frequency of participants' responses according to Tomlinson's model (2004) is captured in Table 2. Sixteen of the 20 participants answered the question while the remaining four elected not to answer the question. At the time of the survey, three of the 16 participants stated that they were unable to define differentiated instruction, resulting in 13 respondents' answers coded using Tomlinson's model.

Instructors participating in this study primarily described their understanding of differentiated instruction as 1) content, 2) process, 3) product, and 4) learning environment. The majority of the endorsements (n=10) were for the process category. Previous literature (e.g., Dosch & Zidon, 2014) has provided theoretical definitions of differentiated instruction, but this finding provides definitions from practitioners. For example, one participant defined differentiated instruction as "providing instruction intended to reach different styles of learners." Another participant described differentiated instruction as "a way to best reach/teach each student." Although participants focused heavily on process, a few participants highlighted content, assessment, and learning environment to define differentiated instruction. For example, one participant defined differentiated instruction as "preparing curriculum and outcomes based on individual student needs based on personal interests, culture, ability/disability, socio-economic status, sex, etc."

In response to the open-ended question asking for additional comments, further comments provided enlightenment on this research question. One participant described differentiated instruction as a way to "understand what students need, give them the resources to discover the solution, [and] point them in the direction of additional resources." Another participant said the following:

After the first question [define differentiated instruction], I looked up 'differentiated instruction.'

What I do [in class] would probably not be defined as that: I give every student a variety of avenues for learning; all avenues are presented to all students with the hope (and the experience) that each student will find several that work well.

These statements show that differentiated instruction is not only a challenge to understand, it is difficult to practice. This supports previous research about differentiated instruction touching on all facets of teaching (Tomlinson, 2004) and when pressed to define differentiated instruction, contrasting and even misinformed descriptions are offered (Wormeli, 2005).

Research Question Two: Use of Differentiated Instructional Strategies

When asked how often participants engage in whole-class instruction such as teacher-led lecture and/or demonstrations, all participants reported some use of this pedagogy, with more than 85% of the participants utilizing either direct whole-class instruction always (56%) or often (31%), while two (13%) frequently used this teaching strategy. In contrast to this usage, Wormeli (2005) states that while some students learn primarily in whole-class instruction, others prefer small groups or working individually. In a check of differentiated practices, only three participants (19%) reported they use differentiated practices on a regular basis while seven (44%) reported they use differentiated practices sporadically. The remainder, or about one-third, of the participants reported that they do not use differentiated practices. This practice of depending primarily on one pedagogy is in contrast to the research that successful instructors offer all three formats (i.e., whole-class instruction, small groups, work individually) throughout the course of a week or unit of study. To address this contrast in practice with research, Tulbure (2011) recommends a blended teaching practice or a combination of differentiated instruction with the traditional whole class. This would allow instructors to compensate for the disadvantages of the traditional approach with the advantages of differentiated instruction.

Research Question Three: Perceptions of Using Differentiated Instructional Strategies in Large Classes

This question was answered by only 16 of the 20 participants. Although few instructors practiced differentiated instruction as noted in findings for research question two, more than 75% of the responding participants described differentiated instruction in higher education as somewhat important

Table 3
Opinion About Using Differentiated Instruction in Higher Education (n=16)

Response	*n*	Percentage
Somewhat important.	10	63%
Not effective in higher education.	3	19%
Extremely important.	2	13%
A buzzword that will fade.	1	6%

Table 4
Challenges to Differentiated Instruction in Higher Education

Response	*n*	Percentage
Class size.	13	87%
Lack of instructional time.	11	73%
Lack of resources.	9	60%
Lack of training.	4	27%

Note: N = 16. Instructors responded with more than one selection on this question.

or extremely important. Only one instructor described it as a buzzword that will fade (see Table 3).

Among the responses to the final question asking for additional comments, one participant offered a detailed explanation of his/her response to the interplay between the usage question and the perception question:

> Differentiated instruction IS a buzzword for what good teachers have been doing, but with limited resources and pressures to meet many other educational and performance goals, it is often very hard to fully offer what might be the best in meeting students' needs. There is a very fine line between… the responsibility of the teacher for teaching methods and… the responsibility of the students for accepting new methods of learning. Today we are teaching [so] many more students with special learning needs and cultural/language issues that the challenge is [an] even greater issue.

Research Question Four: Benefits and Challenges of Using Differentiated Instruction in Large Classes

This research question was explored through three survey questions, two Likert and one multiple choice. Again, only 16 participants answered all three of these questions. When examining the conundrum of benefits versus challenges, only three, or less than 20%, selected the response that differentiated instruction is both practical and reasonable, the response that would indicate seeing benefits and willingness to take on the challenges. At the other end of the scale, 25% selected impractical and unreasonable. The remaining nine were split between the responses that differentiated instruction in higher

education was practical but unreasonable (*n*=2) and impractical but reasonable (*n*=7).

Although none of the participants selected the multiple-choice option of "significant and worthy of the effort," half of the participants (*n*=8) selected the response that the benefits of differentiated instruction in higher education were significant and somewhat worthy of the effort required to implement. And another fourth of the participants (*n*=4) selected the response that it is insignificant but somewhat worthy of the effort required to implement. In overview, three-fourths of the participants saw some benefits to using differentiated instruction. As with the previous question, another fourth (*n*=4) indicated that they perceived differentiated instruction as insignificant and not worthy of the effort required to implement. This mixture of responses is similar to the anecdotal findings of Wormeli (2005) who noted that differentiated instruction had both rewards and downsides to implementation in a classroom. The use of differentiated instruction in higher education, as with primary and secondary education, represents challenges to faculty.

Responses in the final open-ended question provided some additional insight into the mixed messages found in the participants' responses to the two Likert questions, and they provide some unique perspective of faculty in higher education. One participant explained that

> Most of us don't even have graders, so it's difficult to manage the ideal teaching strategies. I'd add one more item to your list of challenges: Faculty are encouraged to do the things that make it easier for them so that they can focus on grants and research. They are not rewarded for putting extra into

teaching. In fact, the promotion and tenure process may view it as a mistake since it's not a factor. Recently I heard our dean say: "It is not possible to earn full professor rank on teaching."

Although instructors in K-12 have challenges of job growth and promotion, most have teaching as their top priority, unlike instructors in higher education.

In a focus on challenges to the use of differentiated instruction, participants were asked which of the following—class size, lack of instructional time, lack of resources, or lack of training—makes differentiated instruction in higher education challenging to implement. Given the opportunity to select more than one, the challenge receiving the highest response rate was class size (see Table 4). The next most common responses were lack of instructional time and lack of resources. Differentiation requires a considerable amount of time, effort, and dedication from the instructor (Santangelo & Tomlinson, 2009). Lack of training was selected by a few respondents, indicating a need for more knowledge of the pedagogy, which consequently would require more time and other resources.

In additional comments, participants emphasized these perceptions about the challenges of implementing differentiated instruction in large classes: (a) it is difficult for instructors to provide differentiated instruction in large classes, (b) instructors face time and resource constraints to provide differentiated instruction, and (c) instructors have academic pressures to meet research and other requirements of a research university. The following comments from participants are examples of these three concepts, especially in the context of large classes:

- "Next to impossible in a class of 450 students. And, large class sizes make this difficult."
- "It is a pipe dream. Plato wrote of 'knowing the soul' if one was to effectively persuade, and this is the same. There is no possible way of implementing this [on a] large scale. The larger the class, the LESS ability to differentiate. AND, how is one to grade students using different scales for the same class and credit? Not going to go over well, and may well open the door to legal challenges since DI does not treat all students the same."
- "Differential instruction can work in small classrooms. It has no place in a large classroom at a research university. Part of learning should be that you need to adapt to the environment and not expect the environment to adapt to you."

In summary, the participants in the study were mostly aware of differentiated instruction, used it to a minor extent, and identified both benefits and challenges of differentiated instruction in large classes. Their responses for large class instruction confirmed much of the previous literature in both K-12 instruction and in higher education. For these participants, class size and resource constraints posed some of the major challenges to using differentiated instruction in large classes. Although the participants provided limited detail about resource constraints, they clearly considered the issue of time as a separate but also constraining resource. These instructors asserted throughout the survey that differentiated instruction in a large class is time consuming. This is supported by their affirmation that they most often chose direct whole-class instruction instead of differentiated instruction.

Implications and Recommendations

Both the goal and the means for measuring quality teaching rely on promoting student learning (Schuck, Gordon, & Buchanan, 2008). Newer teaching strategies introduced into higher education often incorporate a collection of teaching methodologies, a combination of face-to-face and online methods, and a campus-wide responsiveness to effective teaching practices. This description well fits the definitions of differentiated instruction. Although many new instructional practices are beneficial, moving beyond age-old teaching initiatives, such as whole-class instruction, generates both apprehensions and challenges for instructors at any curriculum level, and especially at the higher education level (Kanuka, 2010). The findings by Kanuka (2010) are clearly confirmed in this current study that instructors find differentiated instruction challenging, especially in large classes. However, other literature indicates that differentiated instruction has benefits to students at the K-12 level and has potential benefits to the higher education student.

With this conflict in mind, Allan, Clarke, and Jopling (2009) task teachers in higher education to "(re)conceptualize their role as a subject specialist-cum-teacher" (p. 369). Among the many directions of university education reform, differentiated instruction has the potential to provide the following: reassessment of individual differences, emphasis on students and learning activities, equal opportunities for professional training, and individualized and flexible learning paths (Tulbure, 2011). The findings of this study indicated that most of the instructors were aware of differentiated instruction but many of them expressed some measure of resistance in implementing the pedagogy.

Time consuming was the challenge reported most frequently by these instructors and the challenge that is also noted by previous research (Santangelo & Tomlinson, 2009). Although challenging to implement in large classes, differentiated instruction is plausible

(Ernest & Ernest, 2005). For example, once a course has been developed, the instructor can then explore strategies to differentiate instruction. A few strategies include: share a story that relates to the instructional content; display an illustration (graphic or media) of the topic being discussed; and allow student choice in assignments. Instructors will need training and other assistance to implement these strategies in their classrooms. Methods for effective training and the overall effectiveness of these strategies should be measured in future studies.

As awareness and training are effective tools in creating instructional change (Dosch & Zidon, 2014), the findings of this study indicate that this is an area that needs future work for administrators and instructors. Over half of the participants had no training in differentiated instruction, while a smaller portion had only read some literature or had attended a workshop or conference presentation. The lack of extensive training among the participants may account for the conflicting information found in the responses to both definition of differentiated instruction and the challenges to differentiate instruction. Referring again to one participant's comment, "After the first question [of the survey], I looked up 'differentiated instruction.' What I do would probably not be defined as that. [However,] I give every student a variety of avenues for learning; all avenues are presented to all students with the hope (and the experience) that each student will find several that work well."

Types of differentiated instruction is another finding from this study with implications for future research and practice. Given that students widely differ, there are no right ways in teaching and learning methods (Chamberlin & Powers, 2010; Pham, 2012; Santangelo & Tomlinson, 2009). Facing wide variations in learning profiles among students, teachers need knowledge about the types of differentiated instruction and an understanding that not every part of a lesson or even every unit needs to be differentiated (Logan, 2011; Wormeli, 2005). The findings of this study showed that many of the participants did not know about all of the types and practices involved with differentiated instruction. The need for more knowledge about differentiated instruction has implications for administrators and faculty mentors who work with instructors in improving their classroom activities. A key factor to student success and achievement lies with the support that instructors can provide (Wormeli, 2005). Clearly, instructors in higher education need more support and training in differentiated instruction to better aid student learning and achievement.

Limitations

This study, as an exploratory survey, has certain innate limitations which provide the findings with both biases and enrichment. The instructors who participated were teaching large classes within one academic college at a large research institution located in the southeastern United States. Their perceptions are not compared to those of instructors at other institutions, as there is limited to no research literature on differentiated instruction in large classes. Thus, the findings are confined within, and bounded by, this limited perspective. In addition, the participants' perspectives are contrasted with those held by instructors teaching smaller classes only through comparison to previous literature. The perceptions and knowledge of administrators, students, or other stakeholders are also not considered in this study. These limitations provide suggestions for future research as all stakeholders in higher education have purchase in this discussion of differentiated instruction. Despite these limitations in this study, the findings provide a focused look at the challenges that instructors face when they attempt differentiated instruction in large classes. Although the strategy is common in K-12 education, differentiated instruction has yet to take hold in higher education.

Conclusion

This study took a renewed look at differentiated instruction through the lenses of higher education instructors teaching large classes at a research university. Although differentiated instruction seems to be gaining ground in educational fields, especially among elementary and secondary educators, the strategy seems to lose momentum among higher education practitioners, a perspective reflected in the findings of this study. The findings are useful because they add to the literature and rekindle the need for discussion about differentiated instruction in higher education. As classroom enrollment increases across the country, instructors are positioned to revolutionize teaching and assessment in large classes by refocusing on learner variances. Through the use of differentiated instructional strategies, instructors are also positioned to reinvigorate the environment of teaching and learning in large classes.

Further, this study highlighted a need to create awareness about differentiated instruction and the potential benefits for students and instructors alike. Those familiar with differentiated instruction cited lack of resources, training, and time as challenges for incorporating differentiated instructional strategies into large classes. Despite these difficulties, many participants voiced a belief that instructors have an opportunity to provide a variety of methods to teach and assess student learning, which increases the opportunities for students to learn and excel within a large class. While this study points to some inroads into the use of differentiated instruction in higher education,

there remains additional work to better understand how instructors can implement differentiated strategies

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Appendix

IPDI Survey

1. Which department within CLAHS do you teach?
2. What class(es) do you regularly teach?
3. In your own words, please define "differentiated instruction/DI."
4. How would you describe your use of differentiated instruction?
    a. I do not use differentiated practices.
    b. I use differentiated practices sporadically.
    c. I use differentiated practices on a regular basis.
5. Which type of training in differentiated instruction have you received?
    a. None.
    b. Read some literature.
    c. Attended a workshop and/or conference presentation.
    d. Attended several workshops and/or conference presentations.
6. How often do engage in direct whole-class instruction?
    a. Seldom (under 10%).
    b. Frequently (10% - 40%).
    c. Often (40% - 60%).
    d. Always (60% or more).
7. How would you describe your personal opinion about using differentiated instruction in higher education?
    a. Not effective in higher education.
    b. A buzzword that will fade.
    c. Somewhat important.
    d. Extremely important.
8. How would you describe the practicality of using differentiated instruction in higher education?
    a. Impractical and unreasonable.
    b. Impractical but reasonable.
    c. Practical but unreasonable.
    d. Practical and reasonable.
9. How would you describe the benefits of using differentiated instruction in higher education?
    a. Insignificant and not worthy of the effort required to implement.
    b. Insignificant but somewhat worthy of the effort required to implement.
    c. Significant but not worthy of the effort required to implement.
    d. Significant and worthy of the effort required to implement.
10. Which of the following makes differentiated instruction in higher education challenging to implement? (select more than one answer if applicable)
    a. Lack of training.
    b. Lack of resources.
    c. Lack of instructional time.
    d. Class size.
11. Please share any other comments that you have about differentiated instruction in higher education.

Experiences of Earned Success: Community College Students' Shifts in College Confidence

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Confidence and related constructs such as self-efficacy have been previously identified as important to college student persistence and performance (e.g., Cox, 2009; Wood & Turner, 2011), but existing research gives little indication of how confidence is shaped by students' day-to-day interactions in class and on campus. Using data from nearly 100 interviews of community college students attending three colleges, this paper examines students' descriptions of their confidence upon entering college and the shifts in confidence they experienced in their first few semesters. Findings reveal that student confidence is continually shifting as a result of interactions with peers, faculty, and others. The analysis demonstrates how academic confidence can impact student motivation, commitment to academic pursuits, and behaviors associated with success. This paper identifies the nature of experiences that positively reinforce student confidence, events that we term experiences of earned success. We use these data to identify a set of approaches that instructors and other post-secondary educational professionals can employ to positively influence student confidence and improve student success.

To improve low rates of credential attainment in college, individual schools as well as a number of national organizations have developed a range of initiatives focused on increasing rates of college completion and student success. Efforts to align high school and college curricula and improve developmental (or remedial) course offerings are among the most popular approaches to improving student outcomes. While academic preparation is undoubtedly important to student performance in college, research has also pointed to the impact of non-academic and non-cognitive factors such as social integration, comfort with the cultural and institutional norms of college, and student motivation and confidence (e.g., Astin, 1993; O'Gara, Karp, & Hughes, 2008; Tinto, 1987). Although the importance of these non-academic factors in college completion and success has been well established, questions remain about the best ways to structure the college environment so as to foster students' sense of belonging and promote behaviors that are associated with success. This paper addresses this gap in the literature by providing evidence of students' academic confidence upon entry to community college and what influenced changes in their academic confidence during the early stages of community college.

We define academic confidence as students' certainty in their ability to meet the academic and social demands of college (Sander & Sanders, 2006). Confidence and related constructs such as self-efficacy have been previously identified as important to student performance (e.g., Cox, 2009; Wood & Turner, 2011), but existing research gives little indication of how confidence is shaped by the day-to-day interactions students experience in class and on campus. Using data from 97 semi-structured interviews of community college students attending three colleges, this

paper examines students' perceptions of their confidence upon entering college, the types of shifts in confidence they experienced in their first few semesters, and the mechanisms that promoted such shifts. Based on our analysis, we present possible strategies for structuring the classroom and other on-campus environments that can foster experiences of earned success and ultimately enhance students' commitment to their academic pursuits.

Perspectives from the Literature: Academic Confidence and Student Performance

Social psychologists and cultural sociologists have long suggested that students' self-perceptions, as shaped by social interaction and personal history, are related to behaviors associated with academic performance. In particular, research has found that self-efficacy and confidence, or the belief in one's capabilities to organize and successfully complete a task, are tied in important ways to a student's academic identity, aspirations, motivation, achievement, and ultimately persistence (e.g., Bandura, 1993; Cech, Rubineau, Silbey, & Seron, 2011; Gore, 2006; Multon, Brown & Lent, 1991). Specifically, studies have found that self-efficacy can facilitate positive learning habits, such as deeper cognitive processing and stronger willingness to tackle challenging tasks (e.g., Bandura, 1997; Liem, Lau, & Nie, 2008). Similarly, psychologists have asserted that if a student does not expect to achieve success or cannot reconcile future goals and current obstacles, he or she is less likely to engage in positive, self-regulatory behaviors conducive to successful academic performance (e.g., Duckworth, Grant, Loew, Oettingen & Gollwitzer, 2011; Oyserman, Bybee & Terry, 2006). This research therefore demonstrates

the powerful role of self-perception in conditioning a student's willingness and even ability to succeed.

In addition to these cognitive processes, research suggests a range of other external factors that can shape the academic confidence of postsecondary students and subsequently affect their outcomes and success. For example, dominant cultural narratives and persistently low expectations of certain groups of students, particularly working class students and students of color, are associated with poor academic performance (Steele & Aronson, 1995). These expectations have been shown to shape academic identity, the dimension of self-concept tied to academic motivation, achievement, and future expectations (see Graham, 1989; Welch & Hodges, 1997). For example, Howard (2003) found that parental influences, the perceptions of teachers and counselors, and perceptions of college influenced the academic identities of black high school students. Likewise, research suggests that students' general perceptions about intelligence and learning, as well as previous experiences with success and failure, are associated with effort and achievement (Dweck, 2006; Gurin & Gurin, 1970). Knowledge of, and comfort with, the norms and expectations of educational institutions have been identified as an important component of a successful transition to college (Leese, 2010).

Importantly, research indicates that self-efficacy is contextual and tied to specific situations or tasks. Bandura (1997) identifies "enactive mastery experiences" as a central influence on self-efficacy. When individuals interpret the results of their efforts on a particular task as successful, their sense of competency in that area is enhanced. Similarly, research has demonstrated the importance of academic and interpersonal validation for student persistence and performance (e.g., Rendón, 1994). For example, one study found that students' anxiety, uncertainty about their belonging on campus, and beliefs about the nature of learning were correlated with student engagement and performance in math (Yeager, Muhich, & Gray, 2011). Yet a range of studies suggest that self-efficacy, academic confidence, and related constructs are malleable, particularly in education settings (e.g., Aronson, Fried & Good, 2002; Paunesku et al., 2015; Walton & Cohen, 2011).

The high concentration of nontraditional college students in community colleges and the persistently low transfer and graduation rates in community colleges (Snyder & Dillow, 2012) makes research on how to help this population of students build a connection and commitment to college of particular importance (Pascarella & Terenzini, 1998). The small subset of the current literature that focuses specifically on community colleges suggests that community college students may experience disjunctures between home and school and may have less access to information about how to be successful in college (e.g., Elizondo, Allen, & Ceja, 2012; Jehangir, 2009; Rendón, 2002). Yet we still have limited understanding about community college students' confidence and how that confidence is influenced by experiences in college. Scholarship suggests that community colleges play a unique role in shaping students' expectations. For example, a long-standing theoretical perspective on community colleges suggests that they are sites in which students experience a "cooling out" of their educational aspirations (Clark, 1960). Clark (1960) argued that the open-access nature of community colleges, their dual mission as transfer and vocational institutions, and the limited resources available to students result in decreases in student ambitions. Specifically, students may assume blame for the obstacles they encounter that can deter them from focusing more intently on their academic pursuits. Researchers have subsequently contested this theory, with some arguing that many community college students' aspirations are "warmed up" so that students who had not previously planned to earn a degree subsequently aspire to do so (Alexander, Bozick, & Entwisle, 2008; Rosenbaum, Deil-Amen, & Person, 2006). Nevertheless, scholars on both sides of this debate appear to maintain that students' experiences interacting with faculty and with others in their institution have an important impact on student expectations, motivation, and goals, although *how* these interactions contribute to confidence has not been clearly articulated.

While the literature points to confidence as a potentially important catalyst for postsecondary success rates, few studies have explicitly explored the academic confidence of community college students. One exception is Cox (2009), who demonstrated the ways in which students' lack of confidence is connected to self-protective avoidance strategies that "prevent full commitment to the role of college student" (p. 77) and how such a lack of confidence can lead to attrition and poor performance. Importantly, she argued that "certain students require a specific kind of validating academic environment to overcome their fear of failure and complete their coursework" (p. 78). Unfortunately, research tells us little about what this environment might look like for community college students.

This paper adds to the literature on college students' confidence in two ways. First, it demonstrates the fluidity of college confidence and the shifts students experience during their first few semesters in college. Second, it demonstrates how students' interactions with the college environment— both within and outside the classroom— influence academic confidence. The following section details the study's methodological strategies.

Methods and Data

Drawing on a larger study of student success courses, this paper uses data from 97 semi-structured

interviews with students at three community colleges in a single state. Colleges were purposefully selected to represent urban, rural and suburban areas of the state and to create a student sample roughly representative of the state's community college population as a whole. Student success courses provide new community college students with basic information about going to college, including a review of non-academic skills (e.g., note taking, study skills, and time management) and available student services (e.g., tutoring, library services, and career and academic planning). Most incoming students are required to take these courses as a graduation requirement. In order to maximize the course's potential to influence student success, colleges also strongly encourage students to take the course within their first 15 credits.

We conducted semi-structured interviews with students who had recently taken or were currently enrolled in a student success course, most of whom were in their first semester of college. In addition to asking about their student success courses, the interview protocol included questions about students' expectations of college before enrolling, their college experiences to date, and how those experiences resulted in changes in their perceptions of college. Relevant interview protocol questions for this analysis include:

- What did you know about how to be successful in college before you enrolled here?
- Have you confronted any challenges in your classes this semester? If yes, tell me about them.
- Have you had any successes in your classes this semester? If yes, tell me about them.
- What is the most important thing you learned about yourself since starting college?

 Students were recruited to participate in interviews in their student success courses and via advertisements on campus, and they were compensated $25 for their participation. Just over half of interviewees were women, 35 percent were students of color, and 55 percent were between 18 and 20 years old at the time of the interview. Most interviews lasted approximately 40 minutes and were audio-recorded and transcribed for analysis.

The construct of academic confidence emerged inductively from a thematic analysis of the dataset; in response, we established a series of codes to capture student confidence and the factors that impact it. Using NVivo qualitative data analysis software, the research team coded the interview data for instances in which students described their confidence. Codes were established during a recursive process of test coding during which researchers coded a subset of transcripts, collectively reviewed the coding, and refined the code list and code definitions. For the purposes of coding, we defined confidence as: "Students describe their certainty in their ability to be a good student, get good grades, persist, and/or complete college successfully. This may refer to one class or to college more generally and could include statements such as, "It's easy," or, "I was nervous." We sorted these references into descriptions of "past" and "present" confidence and then coded for factors that appeared to interact with students' confidence, such as knowledge about college, goals and plans, past experience and motivation, and shifts in confidence.

Coding validity was achieved through a number of validity checks whereby two researchers coded every tenth transcript and a third researcher reviewed the coding. These checks were used to identify discrepanciess and further refine the coding instrument. The research team met weekly to discuss the results of these checks, questions about specific passages and codes, and emergent findings.

The following section begins with a brief introduction of the two confidence categories that emerged within the data: students who entered college with confidence, whom we refer to as self-assured students, and those who were apprehensive about their collegiate endeavors upon entry. We then describe two types of shifts that emerged most prominently in our data and what instigated those changes. The first type of shift is rooted in experiences of destabilization that led students to reevaluate their understanding of what it means to be a college student, which in some cases undermined students' confidence. The second type of shift resulted from an experience of earned success, which was linked to positive shifts in confidence, enhanced motivation, and more robust academic identities.

For clarity and ease of language in this paper we use the terms apprehensive and self-assured in ways that might seem to imply that student confidence is static (e.g., we use the term self-assured students). However, the data suggest that confidence is highly dynamic and is related to particular tasks and subject areas. Many individual students exhibited both apprehension and self-assurance, as they might have been confident about writing but unconfident about speaking up in class. This paper explicitly highlights what contributes to these dynamic shifts during the early stages of a student's collegiate endeavors.

College Confidence at Entry

In order to trace how student confidence shifts during their early college experiences, we examined how confidence developed for students entering with two types of confidence: apprehensive and self-assured. Apprehensive students described a lack of academic confidence upon entry to school. Self-assured students, by contrast, reported feeling confident at the outset of their college careers. For both groups, their self-described confidence was tied to both their previous

educational experiences and their expectations of community college, as described further below.

Apprehensive Students: "I Knew Nothing and I Had to Learn a Lot Really Fast"

Our analysis of students' apprehension indicates that their low confidence was most often associated with their expectations of how they would perform in college, which was often shaped by information they received from teachers, friends, and others. Many reported receiving warnings about their level of preparedness for college-level work. For instance, one interviewee said: "High school teachers give you a skewed image of college. … They say, 'You're not going to be ready for college. You're not going to be ready.'" Another student explained: "Everybody thinks college teachers aren't going to be worried about you…Just the overall review of college is 'You're on your own.'" The message conveyed to these students is, thus, to expect disjuncture and possibly failure despite their previous track record or best efforts.

Specific sources of student apprehension included concerns about technology, academic preparation, study skills, and navigating the college environment. For example, one returning student expressed concern about the technological demands of attending college:

> I looked at my age and I looked at the technology, the computer, which I know very little about. … Then I looked at how far advanced the other kids were coming from high school, those that were already in school and had been in school for a year or so, and how would I match to that?

Students also voiced concerns about how well previous academic experiences had prepared them to take on the demands of college. For example, one student described her experience in an English class her first semester: "They are talking about different types of outlines, and I'm trying to remember if we did outlines [in high school]." Some students struggled to understand the non-academic landscape, such as figuring out registration and transfer requirements: "I got no guidance. Like I didn't know how to apply for college classes. I had never even heard of [transfer] agreements. I knew nothing and I had to learn a lot really fast." Feeling unprepared for the college environment sometimes led apprehensive students to question their decision to enroll in college: "I was scared to death when I came back. … [I was] nervous. Did I make the right decision?"

Overall, apprehensive students exhibited a lack of confidence that may be associated with a tenuous commitment to college. Prior research suggests that this can translate into behaviors that undermine success, as students expend less effort on tasks they feel more likely to fail (e.g.,

Cox, 2009; Yeager et al., 2011). As we demonstrate shortly, this cycle proved true for students in our sample as well.

Self-Assured Students: "I Am Going to be Successful Because I Already Have Been"

Students who were self-assured had high expectations for achievement or success in one or more dimensions of college. They described their academic identities as positive, in part because they performed well in previous educational contexts: "I always think of myself as being a really smart somebody. … I got through high school pretty good, and I studied, and I would just look at the material, do the work, and that was it." In many cases, students connected their sense of confidence to their demonstrated ability to manage time and meet deadlines, both within and outside the classroom: "I've never been a procrastinator. If I'm doing something, I want to get it done right then."

Based on these prior experiences, some self-assured students demonstrated an awareness of their academic weaknesses. In fact, some also described an awareness of how to manage their weaknesses. This student noted that while she was not strong in math, she had identified strategies to ensure that she would receive an acceptable grade in her math courses:

> Math is a touchy thing with me … but I think that it can be overcome as far as I just need to take time to study and get that tutor. I think that … it will just work itself out in the end.

While the student quoted above described a specific subject area challenge, this also emerged as self-assured students talked about the broader challenge of completing college. For example, one student noted, "It's just going out and [getting] the degree. You have to start at the bottom and work your way up." More generally, the data suggested that self-assured students approached the obstacles of college with ambition rather than fear. Thus, while some expected college to be challenging, like apprehensive students did, they believed in their own ability to succeed and address challenges as they arose.

While some students acknowledged what aspects of college might present a challenge, other self-assured students thought that college would be easy. In some cases, this was informed by stereotypes of community colleges: "I expected it to be like '13th grade' like they said. I thought it was going to be a lot more like high school than college." This misguided expectation, in turn, fostered a sense that students did not need to change their academic habits and behaviors. For example, some students cited their ability to "get by" in high school as a reason for entering college confidently: "All through high school I've been one of the kind of

students that's kind of kicked back, didn't really do my homework, and I still did really good because I'm really good at like tests and absorbing information." Taken together, this lack of information about the expectations of college, combined with prior academic success, contributed to some students' expectations that they would succeed in college with little effort.

Both the student who believes she can be successful without doing homework and the student who is too fearful to begin an assignment need to recalibrate their expectations of college and of themselves to achieve success. Many students in our study described feelings of apprehension and self-assurance as their confidence varied across subject areas and shifted over time. As detailed next, close analysis of these shifts provides insight into how colleges contribute to changes in students' confidence during their first few semesters.

Shifts in Confidence

Although the students described above had different previous educational experiences and differing expectations of college prior to enrollment, almost all reported one or more shifts in their college confidence as their understandings of college and of themselves as learners evolved. These shifts were related to specific skills or content areas and we classify them as experiences of destabilization or experiences of earned success. See Table 1 for a summary.

Experiences of Destabilization: "It's Been a Wake-Up Call Actually."

Most students in this study reported that they expected college to be challenging and that difficult course material coupled with support provided motivation to succeed. As one student explained, "It is hard, but I like being challenged a little bit." However, for some students, early college experiences destabilized their confidence in areas in which students were both previously self-assured and previously insecure. These shifts revealed the ways in which college was more challenging than expected, as well as the ways in which the student was less prepared than expected. Our findings suggest that experiences of destabilization can result in either positive changes to academic behavior or negative changes in students' confidence. Positive changes often occurred when students could readily identify the behavior that led to the experience of destabilization, which could emerge when a destabilizing experience was followed by an experience of earned success. In contrast, negative shifts manifested when students were unable to identify the underlying problem.

Most experiences of destabilization emerged from interactions with instructors through negative feedback students received on their work. In particular, students described shifts in expectations when they received low grades on assignments. As one student recounted, "I came to this [college], and I was still in that [high school] mentality. And it's like, 'Whoa, I'm failing.'" Low grades often led students to assess their work habits and realize that college required different academic strategies than their prior educational experiences: "You gotta do your homework and your class work, or you're not going to pass." These types of realizations were particularly prevalent amongst students who passed their high school courses with little effort or difficulty. Exposure to college level expectations also influenced how students completed homework and engaged with lectures. This student described how his perceptions of reading and studying were changing:

> I didn't know that there was so much in-depth [work] that comes with reading; [you cannot] just read the material and listen and go about your business. But it's so much more—you have to understand your reading, you've got to know what you're reading about.

While these statements reflect the vague and misinformed understandings of college that were common among our interviewees, they underscore the ways in which poor academic performance catalyzed important realizations for some students.

Low grades and poor feedback from professors often provided a "wake up call" of the expectations for college level work, including the type of effort and skills required to succeed in college. Students who experienced this type of destabilization, like this student, often noted things like, "I can't be as lazy as I was in high school." Some of these "wake-up calls" were described by students in conjunction with newly acquired academic behaviors or positive self-reflection about the attitudes and habits required for success. For example, a student who struggled early in college reported, "When I first went to college, I thought it was a joke and didn't really care about it, but I realized I had to actually sit down and think about it and apply myself and work it out." Students who were able to identify the skills and habits needed to get good grades and receive positive feedback reported making changes that led to feeling more engaged and committed to working hard in college. Their understanding of the habits and effort necessary to succeed translated these destabilizing experiences to subsequent experiences of earned success.

While students with clear direction out of destabilization appear to benefit from the experience, students with less clarity around how to address poor performance experienced declining confidence and increased apprehension. This student realized he was struggling early on in the semester, but never identified

Table 1
Shifts in Community College Student Confidence

Shift	Definition	Illustrative Quote	Outcome
Experiences of Destabilization	A dimension of college is perceived to be more challenging than expected.	"I didn't know there was so much in-depth [work] that comes with reading."	If supported, may result in changes to positive academic behaviors. If not, can result in decreased confidence and motivation
Experiences of Earned Success	Students receive tangible evidence about their potential in an identified area of concern.	"I definitely found out that I can actually get up and do stuff. I don't have to wait until the last minute."	Confidence in the area, motivation, and aspirations may increase.

how to address his problem with time management in time to recover:

> It started sinking in after the first week actually. I saw all this work that was not getting done and then it started piling up and they wouldn't take late work. They said, "This isn't high school anymore." And then it really smacked me in the face when the class was over and I saw my grade.

Other students shared a similar shifting awareness of failure without having a clear idea of how to address the problem at hand. This student realized that her habits in class were proving problematic for her performance in college: "I don't take notes, but I probably need to start doing that because I'm not doing too great in college right now, because I'm not taking notes." Yet, thus far she had not put note taking into practice, potentially due to a knowledge gap in how to do so.

For some students in our study, destabilizing experiences resulted in uncertainty about their ability to succeed. Even students who reported self-assurance when they entered college appeared vulnerable to apprehension when they interpreted failure to be the result of their own skills and abilities. For example, one student who recalled feeling initially confident about college reported increasing apprehension about his ability to succeed. This manifested in a reevaluation of his career goals:

> I'm definitely starting to think more realistic now because when you first get into college, like 'I want to do this and this and this.' And you're like, 'Well I can't, I'm not really smart enough to do that … this is really hard to do.' Like teaching is my main goal, but I have a fallback. My fallback is being a police officer … or security guard.

Just as students who recalled apprehension upon entering college reported wavering commitment to their goals (wondering if they made the right decision in

coming to college), this student reported a potential "cooling out" (Clark, 1960) of his aspirations.

Experiences of Earned Success: "So I Realized, 'Hey, I'm Actually Smart'."

The second shift in confidence we identify occurred when students received tangible evidence about their potential, which made them feel more confident about their college endeavors. These experiences of earned success reshaped students' perceptions of their own abilities, even when they coincided with realizing that college was more challenging than expected. Experiences of earned success emerged around course content, academic work habits, and the social demands of college, but regardless of their focus they shared three characteristics: they provided students with evidence of their success, resulted from students' own actions or effort, and were related to an identified area of concern or weakness. In some cases, experiences of earned success emerged from a potentially destabilizing situation that was successfully navigated. Students with both higher and lower self-assurance described experiences of earned success, suggesting that such moments can be salient even when students have stronger levels of confidence in certain domains.

Given that interviewed students were in a college preparatory course that reviewed study skills and academic habits, some students experienced earned success in applying new study skills they learned through the course:

> That's when my class started to really pick up with the notes, and I was using my high school notes, and it was like it wasn't working. … And [then, after practicing] it was like, now I can take notes in college.

In this case, the student realized she was falling behind, but she was able to apply a new technique to address the problem before it escalated to a destabilizing

problem. After applying the new technique, she saw evidence of her success, which enhanced her academic confidence in note taking. Similarly, other students reported evidence of success in their efforts to manage time more effectively or to work proactively to accomplish tasks: "In high school I was the biggest procrastinator. … So, definitely I found out that I can actually get up and do stuff. I don't have to wait until the last minute."

In another example, a student describes math as an area of concern based on her experiences in high school: "Like math, I did not do too well in high school, so I did not think I was going to do that well here either." Through her grades in the course, she discovered, "I am actually doing good in it." Much like this student, evidence of earned success was often in the form of positive feedback from professors and good grades, but students were also affirmed in their efforts when they received other positive responses to their behavior. For example, a student described her concern about interacting with professors, and she related a successful experience that had emerged from asking questions of her instructors.

> That was one of my main things was I don't like talking to my teachers. I feel, I guess, nervous when I go talk to them about school work. … It was a little nerve-wracking at the beginning, but once they started answer[ing] my questions with good answers, I felt much better.

In this instance, the positive response the student received from professors decreased her anxiety about talking to faculty members. These "good answers" were evidence that her interactions with professors had been a success.

Evidence of success appears as a key feature in these experiences. For example, while students spoke positively about hearing a kind or encouraging word from a faculty member, in our data these were not tied to confidence or identity in the same way as excelling on performance tasks. The most powerful experiences students described were earned, meaning they were less likely to recount shifts in confidence from tasks they deemed "easy." Finally, we found relatively few examples of students' confidence shifting when their assumed competence in a skill was confirmed. Instead, experiences of earned success appeared most salient to students when they were tied to previous negative experiences or areas of apprehension.

Our analyses of shifts in confidence indicate that these success moments not only reframe students' academic identities, but they may also be associated with increased motivation and productive academic habits and behaviors. This is evidenced above as students see that their efforts to apply study skills or

access resources are successful, and therefore they intend to continue applying those strategies. However, we also identified more generalized examples of enhanced academic aspirations and commitment to college. In particular, as students' expectations of community college were recalibrated, their perceptions of four-year institutions shifted as well:

> For as long as I can remember [four-year college] was so far out of my mind. Cause, wow, I have to be like a perfect student to get in there. But I know now, my GPA is pretty good, I've got some study habits and I have confidence like, why not.

Just as they described a lack of motivation in association with a lack of confidence, positive shifts in confidence were linked to enthusiasm for their academic endeavors: "I am much more confident. I want to do everything. I want to be doctor. I want to be everything. Seriously. It gave me a lot of inspiration."

Discussion and Implications

The confidence with which students enter the classroom has real implications for student behaviors. When students do not expect to be successful they are less motivated and less likely to exert effort, and they may adjust their aspirations and engage in self-defeating behaviors to avoid failure (e.g., Cox, 2009). If their confidence is tied to a lack of information about the expectations of college, they may not engage in appropriate self-regulatory behaviors that lead to success (e.g., Yeager et al., 2011). Yet, as this study finds, college confidence is not static. Students experience shifts and changes in their perceptions of themselves as students as they engage with the college environment. Students reported that their confidence stemmed from destabilizations and earned successes in particular subject areas, as well as from their ability to navigate the non-academic demands of college (i.e., interacting with professors and accessing support services) (O'Gara et al., 2008). Importantly, these compiled experiences contributed to their perceived ability to succeed in college. Students who predominantly experienced destabilization reported uncertainty about their ability to complete a college degree, which sometimes led to reevaluating their educational goals, a sign of "cooling out" (Clark, 1960). In contrast, students with more earned successes, particularly in areas where they previously struggled, experienced a "warming up" that translated to an increased confidence in their ability to complete a college degree and even take on more ambitious career goals, as well as positive academic behaviors to achieve these aspirations.

The shifts in confidence described in this analysis demonstrate the ways in which confidence is continually reconstructed through interactions and academic experiences. During their interviews, students

described multiple shifts in confidence across various subject areas in both directions. Based on these data and rates of student attrition in community college, even among students who persist into a second semester, we hypothesize that multiple ongoing experiences of earned success may be necessary to maintain academic confidence. The data highlight the potential of specific types of interactions with professors and staff to encourage positive academic behaviors and prevent the cooling out of student aspirations.

Earned Success in the Classroom

Our findings show how feedback is central to both experiences of destabilization and earned success. Good grades, written comments, and verbal exchanges provided students evidence of the connection between their academic habits and positive results and were an important part of students' descriptions of earned success. These forms of teacher feedback also provided guidance during destabilizing experiences. In fact, students who received specific feedback were able to identify the problem area and apply solutions; however, not all students received feedback in a form that allowed them to rectify the problem.

This evidence suggests that faculty members can structure experiences of both destabilization and earned success for students by making the results of students' efforts transparent to them. While negative feedback in the form of poor grades may be damaging if it calls into question students' ability to succeed and persist in college, our data suggest that there is danger in lowering expectations or in decreasing standards for student success. Thus, we argue for strategies to facilitate opportunities for students to experience success, even as they practice and acquire new skills. For example, by breaking a large, high-stakes assignment into its component parts, faculty can scaffold student learning and offer feedback more frequently with fewer repercussions for students' performance in the course. Similarly, feedback on ungraded assignments, such as a paper draft, can prepare students for instructors' expectations.

Interviewees' reliance on teacher feedback to gauge their learning suggests that students need additional opportunities to learn how to reflect on their work process and product. Learning how to self-assess gives students additional information about their progress and can be particularly useful for students who have little information about how to calibrate their academic behaviors to the demands of college (Karp & Bork, 2012). Asking students to reflect on the amount of effort they expended on a task or to evaluate their work against a rubric developed by the class can help students become more cognizant of the relationship between their academic behaviors and the grades they

receive. Likewise, if apprehensive students can learn to associate performance with effort rather than with innate characteristics or talent, they may be more likely to persist. Developing this orientation to ability and performance is particularly crucial when students encounter challenges, as they will perceive the struggle they encounter as part of the learning process rather than a weakness that cannot be overcome (Barragan & Cormier, 2013; Dweck, 2006).

Finally, instructors may also foster student success by providing opportunities for guided practice of academic skills such as note taking and study techniques to clarify what successful work and study habits look like at the college level. For example, the colleges in our study offered student success courses, required in students' first semester of study, which help students develop the academic habits (e.g., study skills and time management), self-assessment skills, and help-seeking behaviors that are associated with positive outcomes. However, such explicit instruction need not be limited to these courses. Instructors can also integrate guided practice on the aforementioned skills in introductory level courses. For instance, an introductory biology instructor could utilize a portion of a class during the first week to provide specific strategies for reading a science-based textbook: how it may differ from reading comprehension in another discipline, and how they may need to adjust their study habits (e.g., note-taking, test preparation) for science courses. However, given that many instructors lack explicit pedagogical training, adopting such a strategy may require additional faculty development so that they know how to support students' academic *and* non-academic needs.

Our analysis indicates that experiences of earned success occurred when students applied successful strategies and saw the result of their efforts. Findings suggest that instructors can facilitate these experiences by helping students identify their own strengths and needs, providing guided practice on strategies to accomplish challenging tasks, and offering constructive feedback.

Future research should explore the nature of experiences of earned success, including how they vary across discipline, the relative effectiveness of the strategies recommended above, and additional classroom practices that might foster student confidence. Additionally, our findings demonstrate that student confidence is not static, which future studies should examine in terms of when and how shifts in confidence occur for both successful and unsuccessful students. Understanding when and how these shifts typically manifest is important for designing strategies that may help maintain the momentum that students gain through their early experiences of earned success. Finally, additional perspectives on the social forces that

shape students' academic confidence and their expectations for success have much to contribute in helping educators create environments in which students perceive themselves as competent college students, as well as become and remain committed to their academic and professional aspirations.

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Acknowledgements

The Essay as a Lens on Transition to the University: Student and Staff Perceptions of Essay Writing

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The interplay between student and teacher expectations about the requirements for successful learning in higher education (HE) can impact on successful student outcomes. This study aims to identify and understand the expectations that first year university students have towards essay production during their acculturation to HE. By examining the expectations their teachers have towards essay production, the extent of the alignment between the teacher and student expectations can be investigated. Furthermore, this study tentatively explores the impact that diverse educational backgrounds have on the formation of expectations for essay production between students and teachers in UK HE. This study identifies that although there are some areas of alignment between expectations of students and teachers, there are important differences related to plagiarism, interpreting essay questions, understanding marking criteria, and the availability of writing support. The greatest differences appear not so much related to different educational backgrounds, but instead with time spent in higher education.

Transition into higher education is a challenging time for many students, and the early experiences of higher education (HE) during the transition period can impact on the academic outcomes of students well into their program of studies. Such experiences include not only new approaches to learning and teaching, but also increased independence, self-regulation and considerable amounts of assessment. Assessment, whether high or low stakes, formative or summative, therefore forms a significant and challenging element of HE for students, and such challenges can be confounded when combined with transition.

There are many factors, both on an institutional and individual student level, that may influence student success during transition into HE. For example, socio-cultural background, socio-economic background, prior educational experiences, academic background, and pre-arrival expectations have all recently been linked with the success, or otherwise, of student transitions to higher education (Bowles, Dodson, Fisher, & McPhail, 2011; Harvey, Drew & Smith, 2006; Katanis, 2000). Universities are becoming considerably more diverse through initiatives of internationalization and widening participation. Consequently, students' pre-arrival expectations of HE are also diversifying. These broadening expectations serve to make the transition to HE more challenging for students and academic staff as there is unlikely to be a "one size fits all" approach that will help universities and their teaching and support staff manage a successful student transition to HE (Whittaker, 2008). Accordingly, it is increasingly important to understand and manage student expectations of higher education in order to enable a more successful transition to tertiary study.

However, understanding and management of student expectations alone is not sufficient to improve the experience of transition to university study. It is the interplay between student expectations and staff perceptions of the requirements of successful HE participation which, together, need better understanding. Academic cultures within HE embody staff perceptions of HE and of learning, teaching, and assessment that, in turn, influence the expectations that teachers and lecturers have towards their students and the work their students produce. Ultimately, therefore, an alignment between student and staff expectations is a critical factor in successful HE transition.

A Theoretical Framework for Transition

For the majority of students entering first year at university, the transition to tertiary study represents a new educational context distinct from previous experiences. Ramsden's (1992, p. 83) model of student learning in context theorizes that students' expectations of the requirements of HE are informed by their prior educational experiences (at school, college, the workplace, etc.) and the context of the learning environment (influenced by academic staff through expectations, course design, etc.). Moreover, Tinto's (1975) theory of student integration and his later reflections (Tinto, 1987) suggest that student integration to university is a three phase process involving separation, transition, and integration, and this process takes time. A student's prior educational experiences lead to the formation of expectations about HE, but a separation from any disillusioned expectations and transition to more aligned expectations is critical to the process of integration (Tinto, 1975). The level of congruence between the expected and actual learning experience can affect the success of the transition phase and ultimately will impact on student retention (Tinto, 1975) and attainment (Smith & Werlieb, 2005). Accordingly, the level of congruence

between the student and staff expectations has an impact on student outcomes, but underlying factors of educational background and transition also play a part.

Students' past educational experiences are further influenced by the social and academic culture in which those experiences took place. Therefore, students' expectations of studying and learning and any difference in the requirements of specific tasks in HE are further confounded when academic and socio-cultural differences exist between a students' native culture and the hosts' institutional academic culture. For example, differences in academic cultures may exist between secondary and tertiary education or between home and host educational systems for international (or transnational) students. Hofstede (1986) and Hofstede and Bond (1988) describe culture using a framework of cultural dimensions, and these notions of culture can be applied to describe learning and teaching cultures and the collective academic culture of a classroom, institution, or discipline. Accordingly, Hofstede's model of cultural dimensions and differences forms a contributory aspect of "the context of learning" in Ramsden's (1992) framework underpinning this study.

Together these arguments form a theoretical framework of transition to higher education: students' prior educational experiences, the context of the learning environment, and academic and socio-cultural influences. They are interdependent in influencing the success of student transition to HE in terms of student outcomes, retention, and attainment (see Figure 1). Central to student transition is Ramsden's (1992, p. 83) model of student learning in context, influenced by previous educational experiences, student, and teacher expectations (setting the context). Tinto's (1975) theory of student integration lengthens this process, ensuring it takes time for true adjustment and integration to occur, during which time it is more critical that student and staff expectations are aligned and understood. Hofstede's (1986) model of cultural dimensions provides a framework which acts to broaden the scope of students' previous educational experiences based on academic and socio-cultural differences.

This combined framework is recognized in more recent studies related to transition, in particular in Australia. Nelson and Kift (2005) and subsequently Kift (2009) argue that a "transition pedagogy," considerate not only of learning, teaching, and assessment, but also of diversity (e.g., the social or academic backgrounds), social integration, and generation of a sense of belonging, is required to successfully support the student transition to HE. This transition pedagogy affirms the concepts with Ramsden, Tinto, and Hofstede that transition is a complex and difficult time with many influencing factors. While Kift (2009) argues that transition should be tackled on an institutional basis,

there is still scope for small-scale understanding for the enhancement of individuals' practice.

Student Expectations

The expectations that students have towards university education are informed by their prior educational experiences (Cook & Rushton, 2008; Ramsden, 1992, p.83;). The influence of prior educational experiences forms a basis for the *academic* expectations that students have relating to teaching and learning (Dalglish & Chan, 2005), assessment (Ramsden, 1992, p.84), academic support (Crisp et al, 2009; Yorke, 2000), academic interactions with staff (Crisp et al, 2009), class sizes (Cook & Leckey, 1999; Lowe & Cook, 2003) and the level of cultural diversity amongst teaching staff and students in the HE environment. This is summarized by Biggs (1996): "The learner brings an accumulation of assumptions, motives, intentions, and previous knowledge that envelops every teaching/learning situation and determines the course and quality of the learning that may take place" (p. 348).

Student outcomes in terms of attainment and retention are, in part, dependent on good agreement between the expectations of students and the realities of the HE learning experience (see, for example, Krause, Hartley, James, & McInnis, 2005): the 'academic integration' aspect of Tinto's (1975) theory of student integration. Consequently, students need to adapt to the academic and social cultures and practices of the HE environment in order to be successful (Tinto, 1975). Longden (2006), Kuh (2007) and Kift (2009) all argue that universities should *strategically* support students through this period of transition and adaptation.

Staff Expectations

The expectations of academic staff play a significant role in creating the student learning experience through the design of learning and teaching activities, the utilization of certain pedagogies, and the modes of assessment adopted. For example, Killen (1994) noted that university lecturers place a lot of responsibility on students to manage their learning independently. Teaching staff expect students to carry out significant private study (Kuh, 2003), and it has been argued that students should minimize any commitments outside of study as they impact negatively on student outcomes (Brinkworth, McCann, Matthews, & Nordstrom, 2009). It is possible that such perceptions may be intrinsically enforced by university teaching staff as an institutional culture of HE.

Institutional cultures are known to play a role in the success of student transition to HE. For example, Hatt and Baxter (2003) noted that learning institutions which

Figure 1
Interdependency of Student and Staff Expectations, Student Transition and Cultural Influences (adapted from Ramsden, 1992, p. 83).
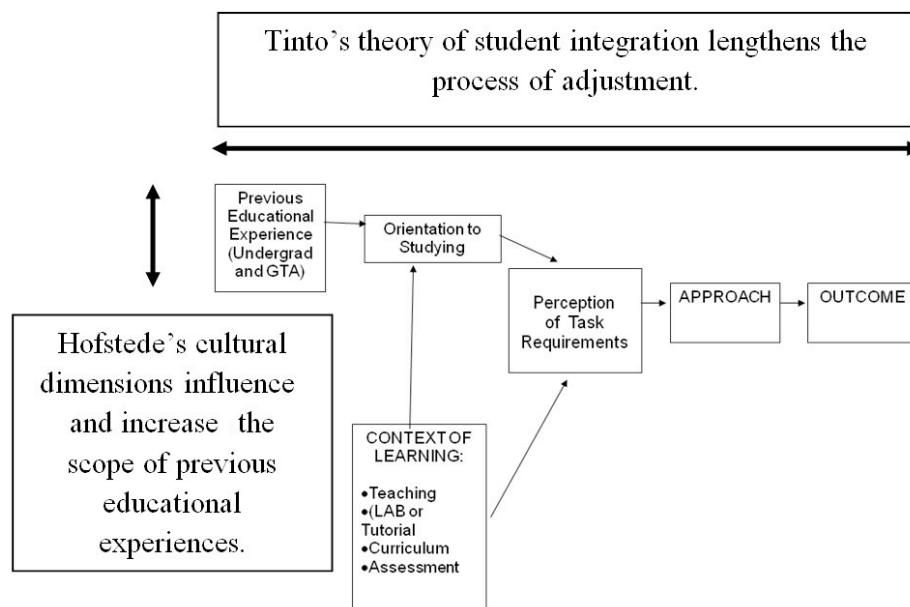
had a focus on entry into HE often fostered a culture of increased confidence and independence in learning, both of which are attributes that are highly valued in HE (Barrie, Hughes & Smith, 2009; QAA, 2001 & 2008,). On the contrary, institutions which did not place emphasis on the cultural values of HE learning and assessment led to significantly lower student attainment outcomes (Hatt & Baxter, 2003). Accordingly, institutional cultures (i.e. the values imposed, imparted and expected by teaching staff) may impact on students' expectations of learning and assessment and, ultimately, may impact on the outcomes of transition to HE.

Alignment of Expectations

A fuller understanding of transition to HE requires further information about student expectations and the expectations of teachers and lecturers who, in part, define the learning experience. However, it is not simply student expectations, nor staff expectations individually, but their level of alignment that can impact student transition to HE. Smith and Werleib (2005) showed that a mismatch between students' prior expectations and their first year learning experience resulted in poorer academic attainment: students with high, unrealistic expectations of HE achieved poorly throughout the first year of study. Lowe and Cook (2003) highlighted that any difference between student expectations

and actual learning experience becomes more and more difficult to manage as the first year progresses. Correspondingly, understanding of student and teaching staff expectations and their perceptions of tasks are vital factors in supporting successful transitions to HE.

Many studies have focused on either improving the understanding of students' prior expectations of studying in HE (e.g. Cook & Leckey, 1999; Leese, 2010; Lowe and Cook, 2003) or have focused on analyzing any gaps which exist between student and university teaching staff expectations (e.g. Brinkworth et al, 2009; Crisp et al, 2009). In particular, Killen (1994) noted that students and teachers had a very different view regarding who was responsible for student learning: lecturers placed the responsibility for learning on the students whereas students placed the majority of the responsibility on their lecturers. Accordingly, it can be argued that inaccurate prior expectations of students regarding their HE study, or a misalignment between student and staff expectations and the realities of HE, are significant factors in the success of student transition to HE (Kuh, 2007).

Diverse Backgrounds and Expectations

Factors influencing the success of transition to HE are complicated when considering diverse prior

academic, linguistic, and cultural backgrounds. The potential distance between native and new contexts of learning ensures that many students have difficulty forming realistic expectations of HE. As White (2013) argues:

> Students who have experienced different life paths come with different expectations, different needs, different learning styles, and different ambitions (oral presentation).

Academically, a diverse body of university entrants have great diversity in pre-arrival expectations and prior educational experiences (e.g., Crisp et al, 2009; Dalglish & Chan, 2005; White, 2013), resulting in a set of expectations that is very difficult to predict, understand or manage. Ramsey, Barker, and Jones (1999) suggest that international students in particular have greater requirements for academic adjustment in order to adapt to the new HE environment, and Krause and colleagues (2005) highlight that international sojourners are typically less satisfied regarding expectations being met. Linguistically (Wu & Hammond, 2011) and culturally (Ryan & Carroll, 2005), international students have to adjust to a new environment. This adjustment can take many months or even years (Carroll, 2014), and the process is not necessarily smooth: students experience "cultural bumps" (Wu & Hammond, 2011). Accordingly, adjustment and acculturation to HE study is complex, and for students from diverse backgrounds the success of transition comprises an increased number of influencing factors.

It is not only expectations of students that impact on the success of transition to HE; there is also an argument that an increasingly diverse body of academic staff with varied backgrounds also impacts on the context of learning (Jones, 2014). For example, international lecturers and university teachers arrive with expectations based on their previous educational experiences, and they too undergo a period of transition that takes time (Maunder et al, 2009). Academics develop expectations and perceptions of students over time, and these expectations are influenced by institutional cultures of both the native and new contexts. Understandably, this period of institutional acculturation for staff with significant experience in HE teaching and learning is shorter than for staff who are new to the HE environment (or indeed new to the particular institution or discipline). Therefore, the developing nature of staff expectations based on HE experience can result in further challenges to the alignment between student and staff expectations, regardless of student background.

Narrowing the Scope: The Essay

Notably, Bartholomae (1986) states:

> Every time a student sits down to write for us, he has to invent the university […]. He has to learn to speak our language, to speak as we do, to try on the peculiar ways of knowing, selecting, evaluating, reporting, concluding and arguing that define the discourse of our community (p. 4).

However, the student's "invention" is reliant on accurate expectations of what is desired by the teacher. It is reliant on an understanding of what is required and good communication. It is reliant on the teacher understanding what is required and also having consistent, defined expectations. Given this breadth of contexts that "expectations" refers to, it is necessary to narrow the scope to a more readily definable aspect of learning and teaching: assessment and, in particular, essays. Assessments through essays in this context are important learning experiences that can be used as a lens to explore alignment between student and staff expectations.

As Race (2009) notes, ' . . . [I]n some subjects, assessment is dominated by essay writing." Not only are essays a dominant assessment format in some subjects, essays are also an area of assessment where student expectations and interpretation of the rules and criteria often do not match those of the teacher (Norton, Dickins, & McLaughlin, 1996). The plethora of essay writing guides available for students is indicative of the challenge which writing an effective essay represents. Hounsell (1997) argues that essay writing is a skill requiring both knowledge and experience, and novice essay writers often lack sufficient experience to write effective essays. Norton and colleagues (1996) noted that students create a dynamic 'folklore' surrounding essay requirements that develops as students become more experienced in academia. As Ramsden (1992, p. 83) illustrates in Figure 1, the formation of such folklore depends on previous educational experience and impacts on the expectations and outcomes of the task.

The idea of a novice essay writer brings the debate into the domain of first year university students who are novices in HE. Branthwaite et al (1980), cited in Hounsell (1997), suggest that students' essay writing skills develop throughout the first year as students become more aware of the expectations of their teachers and their own essay writing skills. In order to explore this, this study examines the extent to which expectations of essay production are shared between students and their teachers. Potential factors (such as previous education experiences) are explored in order to understand their potential influence on expectations. By researching the expectations of

students regarding essay production early on in the university experience and by understanding the expectations of teachers and lecturers regarding their students' approach to essay production it is hoped that the level of alignment between student and teacher expectations regarding essay writing can be better understood. In order to address these objectives the following research question was developed: "In the context of a large, urban, research intensive university in the UK, what are students' expectations and teaching staff perceptions of essay production and how much alignment exists between each?"

Method

A questionnaire (Appendix 1) was developed to examine expectations and perceptions of essay writing across the two participant sample groups: (1) first year undergraduate students and (2) teachers in their subject area. The questionnaire was developed in light of findings from an earlier qualitative phase of research (McEwan, 2014) that focused on developing a participant-led understanding of the research question, through focus groups and observations, in order to develop a questionnaire that was less biased in terms of researcher-led lines of enquiry. The questionnaire involved a combination of different question types: open-ended qualitative, four point Likert-scale, closed multiple choice, and demographic. The questions were developed based on themes which emerged from the earlier study. These general themes included student concerns regarding essay writing, perceived understanding of essay-based assessment, and expectations of required essay writing skills.

All participants in this study were teachers or undergraduate students in the business school at a large, urban research-intensive university in the UK. Student participants were recruited from a first year undergraduate business and management course (B&M1B) to ensure a population of novice, transitioning university students (B&M1B had an enrollment of 298 mostly first year students with a fairly significant proportion of students from diverse academic and national backgrounds). A pre-requisite course for studying B&M1B is B&M1A, which involves a critical essay as coursework and essay-based examinations, so all students had early experience in preparing essays at the university and had time to develop approaches and expectations of essay production. Moreover, essay support and assignment preparation tuition are provided in both B&M1A and B&M1B in the form of taught classes. Students are provided access to the University's generic marking rubric and some specific marking guidance that is also provided to teachers. Teacher participants (including Graduate Teaching Assistants) were recruited from

across the whole business school. This group also comprised a significant proportion of novice and international participants.

The questionnaire was hosted online and distributed to participants via email announcements. In total, 37 students (12% response) and 14 staff (12% response) completed the questionnaire. Although each sample is relatively small, there was sufficient response to explore expectations and concerns regarding essay writing across the sample groups and to attempt to elicit any potential factors or explanatory aspects of student and teacher expectations that may impact on student outcomes. Larger samples would undoubtedly be required for a definitive study, but the aims here are more exploratory, hence, though disappointing, a smaller sample suffices.

McEwan's (2014) qualitative study identified several possible factors that may affect participants' expectations of essays in HE. Accordingly, measures of years of experience in studying or teaching in HE, in English fluency and usage, in country of background or origin and in academic backgrounds (both level of educational background and location of influential backgrounds) were sampled in the present study through demographic questions (survey item 5 in Appendix 1). Following from McEwan (2014), twenty Likert-type questionnaire items were developed to examine participants' expectations and perceptions of structures of essays (items 1.9, 1.15, 1.18), their perceptions of necessary essay writing skills (items 1.1, 1.5, 1.10, 1.11, 1.12, 1.13, 1.16, 1.17), their understanding and expectations of support (item 1.3), their understanding of assessment rules and criteria (items 1.2, 1.4, 1.14, 1.19, 1.20), and their concerns regarding essay writing (items 1.6, 1.7, 1.8). The themes of "purpose" and "structure" were further interrogated through two multiple choice questions (items 3 and 4), and a further theme—How do students approach reading essay questions?— was interrogated by asking respondents to identify the words they focused on in sample texts (items 2.1 – 2.2). Respondents were also given an opportunity to provide open responses to questions designed to further gauge participants' concerns (item 6).

Findings and Discussion

Given the argument that demographic factors such as background (academic, social, cultural, etc.) may impact on the alignment between student and teacher expectations, it is initially important to compare all student and staff responses to survey items 1–4 against responses to demographic factors (survey item 5). Strong correlations ($r > 0.7$) were observed between student responses to survey items related the demographic questions of nationality, country of

previous education, and English as a first language. Consequently, student demographic data can be condensed into a single variable: "home" or "international" background. On examining staff responses to demographic questions, similar patterns were apparent, e.g., strong links between years of teaching experience and years of teaching experience at the current university. Moderate correlations exist between the factors of English as a first language, lack of foreign teaching experience, and UK nationality suggesting staff can also be grouped into "home" or "international" backgrounds.

Comparison between Students and Staff

Student and staff responses to the first 20 Likert-type questions were analyzed to determine an overview of expectations to set the scene, but also to determine the extent to which expectations were shared or distinct. Due to the small samples involved, it would not be prudent to infer generalizations from the dataset, but instead an exploratory, descriptive study was employed and the findings reported here show some significance within the dataset by means of the Mann-Whitney U test, but they are in no way generalizable.

Apparent differences between student expectations and staff perceptions were observed in only six of the twenty Likert-type items. Regarding plagiarism, 100% of students believe that they understood plagiarism but only 36% of staff agreed that students understood plagiarism ($p < 0.001$). In addition, 84% of students were not concerned about plagiarism, compared to 43% of staff who thought students were concerned about plagiarism ($p = 0.012$). Interestingly, 97% of students believe that they focus on answering the essay question; but only 21% of staff agreed ($p < 0.001$). Only 25% of students report critiquing their essay sources compared to an expectation among staff (71%) that sources should be critiqued ($p = 0.010$). Teaching staff suggest that students do not use topic sentences very well in their writing ($p = 0.001$). Furthermore, 62% of students suggest the lecturer is not the audience compared to 64% of staff who say the lecturer is the audience for an essay ($p = 0.009$). Overall, these findings suggest some important differences in the approach to essay writing between students and staff and are potentially suggestive of a different understanding of certain terms (e.g., students' conception of critique versus staff views on critique), and this is particularly relevant in this case as students have already prepared critical essays in B&M1A yet are still unsure regarding "critique." Such mismatches may be indicative of implicit assumptions about what constitutes good practice from the perspectives of tutors and students (Lea & Street, 1998). Such academic literacies should be brought into mainstream communication in teaching in HE to enable better integration of students into their new, and varied, disciplinary cultures.

Years of Experience as a Factor?

The demographic data highlighted one key relationship between Likert-type responses and potential influencing factors, namely years of experience in HE. For example, first year students feel less supported in essay writing compared to more experienced students and students with prior HE experience who were more likely to view the purpose of essays as demonstrating knowledge. In terms of staff responses, the more experience a teacher had the more likely they expressed feelings that their students didn't understand the marking criteria, were concerned about plagiarism, and didn't really know what to do to get a good essay grade. Moreover, teachers with more years of experience had a greater desire to see a critique of sources in essays and had less trust that university courses actually supported students' essay writing skills.

Accordingly, experience of higher education does seem to play a role in determining expectations and, therefore, impacts on alignment. In particular, staff expectations are heavily influenced by experience (as well as international background). Indeed, it could be suggested that experienced staff undergo "creep" in expectations, moving towards less confidence in their students' independent ability to produce good work, a greater expectation that plagiarism will occur and an increased demand for a critical approach to essay writing. Importantly, and key to this research, is the fact that differences in expectations do exist between teachers and students, and the most apparent factor in determining different expectations of essay writing is whether someone is a novice (student) or experienced (teacher) participant in HE. On the surface this may seem obvious, but implications are more subtle: all students are novices, and although some demographics (e.g., international or home) might seem more novice, it is the lack of experience of essay writing for all students in HE is key.

Approach to Reading and Interpreting Essay Questions

Participants' approach to reading and interpreting an essay question was also explored. In order to assess this aspect, two sample essay questions were created to analyse respondents' approaches to interpreting them. The questions (survey items 2.1 and 2.2) are shown here:
Item 2.1: Discuss and evaluate the most influential factors on the development of the English language between the years 1400 and 1800.

Table 1
*Percentage of Students and Teachers Focusing on Active Verbs, Topics
or Context in Sample Essay Questions*

	Active Verb		Topic		Context	
	Student	Staff	Student	Staff	Student	Staff
Full Match	79%	42%	35%	42%	35%	42%
Partial Match	15%	19%	37%	58%	37%	58%
No Match	6%	38%	28%	0%	28%	0%

Item 2.2: Identify the main political actors and analyse their role in the 37 days prior to the start of the First World War.

These two questions contain elements that were qualitatively categorized as active verbs (discuss, evaluate and identify, analyze), topic (influential factors, English language development and political actors, causes of war) and context (years 1400 – 1800 and 37 days prior, First World War). Participants were asked to identify the words they immediately focused on. This approach gives some indication of whether students are more or less likely to focus on the active verb, topic, or context, compared to their teachers.

In order to eliminate the essay questions themselves as contributing factors, the data for each sample essay question were combined. Students and staff responses were recorded as a Full Match if all words in a category were present in a participant's response, a Partial Match if one or more (but not all) words in a category were present in participant's response, and as No Match when no words in a category were present in participant's response. The frequency of each coded response was then calculated for students and teachers and the data were analysed using Pearson's χ^2 test to determine whether there was any association between the two populations (students and teachers) and the three qualitative response variables (Full, Partial or No Match). In each case a significance level of $p < 0.01$ was chosen, implying a confidence level of 99%. These results are summarized in Table 1.

There was a strong association between a participant's status as student or teacher and their focus on either acive verbs ($p < 0.001$) or the topic ($p = 0.009$) of an essay question. There was no association between status as student or teacher and a focus on context. Students (79%) pay more attention to the active verbs as compared to staff (42%), and students (28%) fail to focus on the topic of an essay question, whereas teachers always focus on the topic to some extent (42% entirely, 58% partially). Accordingly, students and teachers approach the interpretation of essay questions differently.

Notably, differing approaches to reading and interpreting essay questions are most apparent across novice (student) and experienced (teacher) essay writing demographics. From the student perspective, essay questions are best approached by examining the active verbs in essay questions, whereas teachers focus on the topic of an essay question and value essays which explicitly address the topic. This further highlights the earlier finding regarding experience in HE as a defining factor in determining expectations: could this result be indicative of the common teacher complaint that students have not answered the question? Interestingly, a similar analysis, but with students split into home or international backgrounds, provided more detail to this finding. In particular, home students were significantly more likely to have some focus on the context of an essay question (75% of home students compared to only 53% of international students), which, although only a minor finding, is suggestive that international students are marginally more likely to ignore the limiting scope of an essay question, valuing the active verbs as providing more guidance in terms of their essay response.

Purpose and Structure

Students and staff were also asked to provide insight into their understanding of the purpose of an essay and what constitutes structure in essay writing. Students (46%) and staff (62%) both agreed that the purpose of an essay was to "demonstrate knowledge." This shared understanding is a key finding. However, it interesting to note that 23% of staff suggested essays should present a balanced viewpoint, and 17% of staff linked essays with argument. By comparison, 34% of students linked essays with an argument, and only 17% suggested essays were an instrument to provide a balanced viewpoint. In general, students and staff views on the purpose of essays are reasonably well aligned, and this similarity was further supported as Pearson's χ^2 test did not confirm any association of responses with being a teacher or a student.

Students (54%) and staff (85%) also share similar, though not identical, beliefs about the structure of an essay: that structure is about building an argument. A minority of staff (15%) but nearly half of students (46%) suggested that structure was about flow between paragraphs and the more functional aspect of separating writing into appropriate sections. This suggests that although the majority of student and staff views on the meaning of structure of essays are also reasonably well aligned (also supported by Pearson's χ^2 test), a significant proportion of students view structure distinctly. It can be argued, therefore, that students and staff share similar beliefs about the purpose of essays but that interpretation of structure is at least partially dependent on demographic: student or teacher.

Thematic Analysis of Open Response Items

Respondents were also given an opportunity to comment on what they perceived to be required for a good essay and what they felt needs greatest improvement. A simple frequency analysis showed that teachers reward most a strong argument (45% of teacher responses). Overall, the most common themes mentioned by teachers were developing an argument, demonstration of knowledge (in agreement with the purpose of an essay item analysed earlier), and answering the question. The most common themes mentioned by students were structure, developing an argument, and answering the question (each mentioned in 35% of student responses). Although these two viewpoints do present quite a unified opinion between students and staff regarding good essay writing, especially when combined with the analysis on the purpose and structure of an essay, there are some vital differences. Teachers prioritize argument (as noted in Hounsell, 1984), whereas students focus relatively equally on structure, argument, and answering the question (i.e., the arrangement of the essay; Hounsell, 1984).

Furthermore, there is evidence that while there is alignment in the intentions of students regarding producing a good essay, there is, in practice, a distinction between the product of student work and teachers' requirements for good work. For example, student responses clearly indicate that answering the question is required for a good essay, and earlier results indicate that students also believe they actually focus on answering the question (97%). However, this does not correlate with the opinion of staff: earlier results show that only 21% of staff feel that students answer the question. Similarly, students indicate that good structure is also a requirement for a good essay, but one finding in McEwan (2014) highlighted that staff do not rate the structures of first year essays very highly, nor is structure mentioned with any weight in staff responses to requirements for a good essay. Consequently, there are some key distinctions between students and staff in

terms of requirements for a good essay: the intentions of students are aligned with some aspects of teacher expectations, but in practice they are often misaligned.

Conclusions

The aim of this study was to develop a deeper understanding of one aspect of the student acculturation to higher education by examining the alignment between students' expectations and their teachers' perceptions of essay production. From the student perspective, essays are viewed as a mixture of argument and arrangement: structure is built, section by section, contributing towards an overall argument, a finding consistent with Hounsell's (1984) work. Students believe essays should demonstrate knowledge and that a focus on answering the question is vital. Essays are best approached by examining the active verbs in essay questions. Students had concerns about essay writing, especially related to their interpretation of structure as compared to their teachers', similar to the misunderstanding of essay features discussed by Norton and colleagues (1996). Students had an awareness of plagiarism but felt they understood and avoided plagiarism well. In contrast, students do not understand the marking criteria very well, and they often do not feel that they know what their marker wants despite receiving support in this area. This finding raises important follow up questions: is the support valid but misinterpreted or are the perceptions of "what makes a good essay" relatively fixed in first year students due to factors such as lack of experience? Interestingly, there was very little difference between the expectations of home and international students in this study, although small sample sizes preclude any generalizations. This appears in contrast to the combined theses of Ramsden (1992) and Hofstede (1986) who suggest that diverse cultural and social educational backgrounds impact on expectations and outcomes. Accordingly, there is also a need to conduct a more significant study that focuses directly on the potential impact of international backgrounds. However, a major finding of the present study is that an over-riding factor impacting on the alignment between student and teacher expectations is relative experience in higher education.

Teaching staff felt that students did not focus on answering essay questions, nor did students understand structure and argument building very well. Moreover, staff felt that students did not understand plagiarism, nor did students appropriately critique the sources they use. Teachers focus on the topic of an essay question and value essays which explicitly address the topic, in contrast to the majority of students who focus on the active verbs. Teachers perceive essays as a tool to demonstrate knowledge and understanding, similar to student expectations, and teachers believe that structure

is almost exclusively about building an argument, supportive of the findings of Hounsell (1984) and Norton (1990), who both noted that teachers view essays as "argument" in contrast to the student view. Interestingly, the amount of teaching experience and the educational background (home or international) of a teacher were important factors in determining teacher perceptions of essays and of their students, which again is consistent with the combined arguments of Ramsden (1992) and Hofstede (1986).

Throughout this study, several themes were identified that are correlated with student outcomes. There is clearly a potential impact on student outcomes due to some misalignments in expectations; however, the amount and nature of the impact is unclear through the methods of this study and therefore needs further investigation.

In conclusion, there are several areas of alignment between student and teacher expectations of essay writing in HE, but there are many significant and important differences. Students have the intentions to produce essays which are aligned to teacher expectations; however, the actual result of their work often is not aligned. When applied to Ramsden's (1992) model of student learning in context, it is clear that first year students do not have a full grasp of their new HE context; they are novices in a new context (c.f. Branthwaite et al., 1980) with a limited understanding of the "rules of the game." This inexperience of students relates to time spent in higher education; it cannot easily be attributed to different educational or cultural backgrounds before HE. All the demographics of first year students shared similar difficulties when facing essays (however, the international background and experience of teachers also plays a role). It is clear that the student participants in this study are still attempting to align their interpretation of the "rules of the game" with their teachers' expectations, even towards the end of their first year and even with targeted support. Accordingly, Tinto's (1975) theory of student integration holds true at least in part: transition takes time, and it is still developing towards the end of first year.

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Appendix 1

Student Facing Questionnaire

1. To what extent are the following statements true Please tick (√) the relevant box: VT = very true, MT = mostly true, ST = somewhat true, NT = not true at all	VT	MT	ST	NT
1. Quantity of references is important in essay writing				
2. I understand what plagiarism is				
3. I feel my current courses are good at supporting my academic writing skills				
4. I understand the marking criteria for essays				
5. It is important that I use good sources for essays				
6. My previous education has prepared me well for essay writing assessments				
7. If I know the topic well, I am confident I will write a good essay				
8. I am concerned my work will be considered plagiarism				
9. I include topic sentences in my writing				
10. Practical or applied examples of theory are important in essays				
11. I argue that the sources I use are sometimes flawed				
12. I use some sources to counter the points made in others				
13. I back up my opinions with literature				
14. I know what I have to do to get a good essay grade				
15. I include a thesis statement in my essays				
16. I use very complex, technical terms in my writing				
17. I focus on answering the question				
18. The question dictates the type and structure of essay I write				
19. The lecturer is the audience for my essay				
20. I have difficulties understanding what the markers want in essays				

2. Please read the following *sample* essay questions and circle (or underline) the word or words (not more than 5 words) which you immediately focus on:
1. Discuss and evaluate the most influential factors on the development of the English language between the years 1400 and 1800.
2. Identify the main political actors and analyse their role in the 37 days prior to the outbreak of the First World War.

3. Which of the following four statements do you *most* agree with?	Please tick (√) the ONE statement which you most agree with.
1. The purpose of essays is to demonstrate my knowledge	
2. The purpose of essays is to convince the reader of my argument	
3. The purpose of essays is to provide a balanced viewpoint	
4. The purpose of essays is to get a grade	

4. Which of the following four statements do you *most* agree with?	Please tick (√) the ONE statement which you most agree with.
1. Structure is about what sections I have in my writing	
2. Structure is about how the essay flows between paragraphs	
3. Structure is about building an argument	
5. Structure is about increasingly complex ideas	

Student Demographics

5. About You (please fill in the blanks or circle the relevant response on the right hand side)					
1. What is your gender	Female		Male		
2. Have you studied at any university before this year?	Yes		No		
3. Is English your first language?	Yes		No		
4. Have you studied at any university before?	Yes		No		
5. Are you in your first year at Glasgow University?	Yes		No		
6. What is your nationality? If you have more than one nationality, which one would you tell someone first?					
7. In what country was your previous education on entry to the University of Glasgow? If there was more than one, then please write the most influential one. If it was in the UK, please write UK.					
8. What level was your previous education when you applied to study at Glasgow University? If 'other' please specify.	High School	FE	6th Form College	Other HE	Out of Education for a number of years

Staff Demographics

5. About You (please fill in the blanks or circle the relevant response on the right hand side)		
1. What is your gender	Female	Male
2. Is English your first language?	Yes	No
3. Have you taught at any university before?	Yes	No
4. Are you in your first year at Glasgow University?	Yes	No
5. In years, approximately how long have you taught at the University of Glasgow?		
6. Roughly how many years have you taught in universities in the UK (including Glasgow)?		
7. Roughly how many years have you taught in universities anywhere (including Glasgow)?		
8. What is your nationality? If you have more than one nationality, which one would you tell someone first?		
9. In what country was your university education? If there was more than one, then please write the most influential one.		

6. **Please answer the following questions about essays:**

   1. What do you think is most required to get a good grade in an essay assessment?

   2. What aspect of essay writing do you think you need to improve the most?

Student Perceptions of the Faculty Response During the
Civil Unrest in Ferguson, Missouri

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Crisis events are historic in the lives of higher education institutions, and they may elevate the role of faculty to leaders, counselors, and supporters of their students. The civil unrest in Ferguson, Missouri during the 2014-2015 school year impacted Saint Louis University students as the Occupy SLU movement witnessed demonstrations surrounding the university's central clock tower. In this qualitative interview-based study, 19 Saint Louis University students were interviewed regarding their perceptions of how faculty addressed the events in the classroom. Six themes emerged: active faculty participation, passive faculty participation, course relevance, altered academic experience, business as usual, and deference for faculty position. These findings serve to capture student perceptions during a historic period of time and may inform and support faculty facing crisis events in the future. This study concludes with considerations for faculty regarding their role in the classroom, the relevance of their course content to the crisis event, and the potential impact on student life.

Background

Historic Crises On-Campus and Off-Campus

The history of American colleges and universities has been marked, in part, by the crises that have occurred both on campus and in the surrounding community. The Society for College and University Planning identifies crises and major disasters as one of the most significant events in the life of an institution (2007). Historic on-campus crises in the past several decades have included the Kent State Massacre in 1970, the Virginia Tech shooting in 2007, and the Northern Illinois University shooting during that same year (Hauser & O'Conner, 2007; Kifner, 1970; Saulny & Davey, 2008). Off-campus events have impacted colleges and universities, as well, such as the effect of Hurricane Katrina on institutions in New Orleans, Louisiana, or the terrorist attack of the World Trade Center and the Pentagon in 2001 (Schmemann, 2001; Treaster & Zernike, 2005). As these crises manifest, students look toward various levels of leadership for cues to better able them to react and respond in a crisis situation. Though students do look toward institutional leaders, their contact with higher level administration is often limited, leaving them in need for more intimate guidance. As such, the role of faculty members as leaders, counselors, or supporters is often heightened.

Faculty Response during Crises

Support for higher education institutions during a crisis has primarily been directed towards senior leadership and student affairs personnel (Birchard, 2009; Calhoun, 2007; Lipka, 2007; Society for College and University Planning, 2007). However, resources have recently been published to support faculty when addressing a crisis in the classroom (American Academy of Experts in Traumatic Stress, 2012; Wildman, 2008). For instance, the Faculty Development and Instructional Design Center at Northern Illinois University (2015) published a list of strategies for faculty to use in the classroom, such as taking time to hold a class discussion, inviting a professional counselor to talk to the class, or making accommodations for students as needed. Similarly, the Center for Teaching at Vanderbilt University published teaching tools and strategies for faculty to use during a crisis, such as taking a moment of silence, assigning relevant activities, and connecting students with on-campus resources (Chick, 2013).

Research on the faculty response to crises has focused on how instructors have addressed events in the classroom. Edwards (2009) identified a lack of crisis management preparedness for faculty, noting instructors' desire for more training to address their students' needs. Similarly, Asmussen and Creswell (1995) identified a lack of faculty involvement following an on-campus crisis, theoretically due to a lack of concern or feelings of unpreparedness. Following the terrorist attacks on September 11, 2001, DiPietro (2003) found that 10.5% of faculty did not address the crisis at all, while the remaining 89.5% did so in a variety of ways: 72% excused students from assignments or offered extensions; 55% held a brief class discussion; 36% incorporated the events into the curriculum.

Only one study to date has addressed student perceptions of how their instructors handled a crisis. In a study of over 400 students, Huston and DiPietro (2007) found that most students felt it helpful when faculty addressed the crisis, while others reported frustration, disappointment, and apathy when instructors did not address it at all. Students reported

a negative reaction when instructors acknowledged the crisis that had occurred, yet insisted the course go on uninterrupted.

Civil Unrest in Ferguson, Missouri

The civil unrest that occurred off-campus is one example of how an event can affect the climate of colleges and universities. Beginning in August of 2014, when Michael Brown was shot and killed by Officer Darren Wilson of the Ferguson police department, the greater St. Louis area witnessed months of civil unrest, military deployments, and international media attention. Governor Jay Nixon twice declared a state of emergency, one just after the shooting in August and one closer to the release of the grand jury decision in November of 2014 (Nixon, 2014a; Nixon, 2014b).

Despite the increased presence of law enforcement and the deployment of the National Guard, unrest throughout the greater St. Louis area continued to escalate after the initial shooting of Michael Brown and throughout the release of the grand jury indictment of Officer Darren Wilson. The St. Louis area witnessed ongoing protests, both peaceful and violent, as well as riots and vandalism (Bogan et al., 2014).

Local colleges and universities were looked to for guidance and leadership during this sensitive time; many executive officers at those institutions sent messages to their constituents, though those messages varied in content and tone (Lucas, Linsenmeyer & O'Brien, 2016). Many students took part in on-campus protests throughout the greater St. Louis area, which sparked a larger social conversation and mass protests throughout the country (Davey & Blinder, 2014; Navarre, 2014; Srinivasan & Wishingrad, 2014). The first on-campus demonstration was held at Saint Louis University with the Occupy SLU movement.

Demonstrations at Saint Louis University

Though the Saint Louis University campus is located 12 miles away from the location of the Michael Brown shooting, prolonged demonstrations occurred on the university's main campus. Known as Occupy SLU, the demonstration lasted six days and included over 1,000 people, both students and nonstudents, that assembled at the university's clock tower. The demonstrations were abrasive at times, yet peaceful throughout (Addo, 2014). Classes were not officially cancelled, though faculty were given the latitude to cancel or adjust their courses as they saw fit (Lucas et al., 2016).

The protests ended on October 18, 2014 with the signing of the Clock Tower Accords, a 13-point agreement committing the university to a formal program of short- and long-term initiatives (Pestello, 2015). Saint Louis University President Fred Pestello

(2015) described the university's commitment to "retain and attract more students and faculty of color, to promote equal opportunity, and to advance focused economic development in disadvantaged neighborhoods" (Pestello, 2015).

Student reactions to Occupy SLU, as well as their perceptions of how faculty handled the events in the classroom, has yet to be captured thoroughly and objectively. The St. Louis Dispatch has documented a wide span of divided reactions from various constituents, including students, faculty, and parents (Addo, 2014). However, there is a clear need to thoroughly and objectively capture the experience of Saint Louis University students that witnessed this historic time on the university's campus.

Purpose

The purpose of this study was to investigate student perceptions of how faculty addressed the crisis in Ferguson and the Occupy SLU movement during the 2014-2015 academic year.

Method

This study utilized a qualitative interview-based design to investigate student perceptions of how faculty addressed the crisis in Ferguson during the 2014-2015 academic year (Creswell, 2014). Participants were recruited from the Saint Louis University student body via departmental emails, flyers, and word of mouth. The Saint Louis University Institution Review Board approved this study.

Data collection involved a brief 11-question survey, followed by an in-depth, semi-structured interview. The survey was administered online via Qualtrics (2016) to the Saint Louis University student body to collect basic demographic information regarding gender, ethnicity, full-time or part-time status, and classification as an undergraduate, graduate, or professional student. The survey included an opt-in/opt-out question which asked the participant to continue with a follow-up interview.

The interviews were conducted by the research team between March and April of 2016 and lasted between 30 to 90 minutes each. A semi-structured research guide was used to gather student perceptions of the campus, their classroom, and communication. More specifically, the interview question read, "How did your classroom instructors address the events that were happening on- or off- campus?" This question was followed by, "How did your instructors' reactions make you feel?"

The interviews were audio-recorded, transcribed to a Microsoft Word document, and analyzed using the constant comparative method, an inductive method

used to develop themes by repeatedly comparing incidents within the same set of data (Merriam & Tisdell, 2016). The survey data was analyzed using descriptive statistics.

Results

A total of 35 participants completed the initial survey. Of these, 59% opted in to complete the semi-structured interview while the remaining opted out or did not complete the survey in full. Of those respondents (n-22), three participants opted in to the interview but were unable to schedule adequate time to complete the interview process. Thus, the final population of respondents was 19. The population (n=19) consisted of students from multiple institutions, although 95% of the respondents identified as attending Saint Louis University during the unrest in 2014 and 2015. 10% of the respondents, at the time of the interviews, had graduated from the university or were attending a different institution in 2015/2016. Student status included 10% part time and 90% full time, and 63% undergraduate students and 32% graduate. In terms of gender, 63% of the respondents identified as female, and 36% identified as male. The racial and ethnic breakdown of the study is reflective of the population of the university (Saint Louis University, 2016) with 73% of the respondents identifying as white or Caucasian, 9% as African American, 9% as Asian, 5% self-identified as Hispanic, and 5% choosing not to disclose the information. Respondents were asked to identify their socioeconomic status as being low (18%), medium (68%), or high (9%), and 5% chose not to indicate their SES. Although not a question within our survey, 14% of the respondents self-identified as active military or having a military veteran status.

Six major themes emerged from the analysis of the interviews; see Table 1. The first two themes capture the different ways that students perceived the faculty response in the classroom and are described as active faculty participation versus passive faculty participation. The third theme, course relevance, emerged in response to the clear distinction between the types of courses where faculty did or did not address the events. The next two themes emerged in response to how students' classroom experiences were affected, and they are described as an altered academic experience versus business as usual. The fifth theme, deference for faculty position, captured the different ways in which students perceived the knowledge and viewpoints of their professors. Each theme is presented in the following sections, including subthemes and illustrative quotes.

Active Faculty Participation

Many faculty took an active role in addressing the civil unrest occurring at Saint Louis University and in the surrounding community. Active participation was characterized by the use or integration of events into the academic setting. The two strongest subthemes that emerged to characterize active participation were shaping lessons around the events and leading a class discussion. Among the participants in this study, 42% recalled ways in which their professors shaped the lesson content around the events in Ferguson. This was especially common among the humanities and social sciences. One student in an inter-professional healthcare class described her experience: "They would be talking about Medicare, Medicaid, or like— the health care systems, and they would be like—look at the area we live in, look what's happening right now, um, and bring it up as an example." Another student in a public health class described her experience: "If we talk about an example of policies that affect people's health, we talk about north city. It was always a part of the conversation and it became even more of the conversation."

After integrating current events into the lesson, leading a class discussion was the second strongest subtheme that emerged under active faculty participation. Among the participants in this study, 32% recalled their professors leading a class discussion about the events on campus and in Ferguson. Those that recalled participating in class discussions reported generally positive or neutral feelings towards that part of their experience. One student reported:

> I didn't feel like it was being brushed off. I felt like, let's talk about this. What are you guys feeling? What do you guys think? I remember having some very healthy conversations during that time. I think the faculty that I was interacting with did a good job facilitating that, but then again we are in the school of public health—it can be very different than other schools on campus.

In contrast to hosting a discussion in class, 11% of participants recalled their professors holding forums for discussion after class; one participant in a history class theorized that this was due to the fact that they had a lot of material to cover. Five percent of participants reported that their professor set up an open forum discussion for students outside of class and that the forums continued on a weekly basis for at least two months.

The final subtheme that emerged under active participation was faculty engagement with the protests. Of those interviewed, 16% recalled that their professors were actively engaged in the events and shared their experiences with their students in the classroom. In response to the question, "What sticks out most in your mind about the campus during that time?," one participant answered:

Table 1
Emergent Themes and Subthemes of The Faculty Response to Ferguson.

Theme	Subtheme
Active Faculty Participation	42% Shaped lessons around events
	32% Hosted class discussion
	16% Engaged with protests themselves
	5% Set up open forums outside class
	11% Made themselves available for discussion after class
Passive Faculty Participation	58% Made logistical accommodations
	42% Offered a safety warning
Course Relevance	*Addressed*: Theater, sociology, race and ethnicity, cultural diversity, social studies, English, public health, theology, ethics
	Not Addressed: Physics, mathematics, engineering, law, ethics
Altered Academic Experience	16% Distracted during class
	5% Distracted while studying
	5% Course content seem more real
	5% Altered perception of classmates
Business as Usual	79% Classes not affected
	11% Enjoyed not having to talk about it
	16% Upset when events not addressed
Deference for Faculty Position	32% Faculty were neutral
	16% Faculty held valuable viewpoints
	16% Discussion with faculty was the most memorable part
	16% Faculty were unaware of events
	5% Faculty were shocked
	5% Faculty were unified
	5% Faculty were directed by the president/administration

I believe just the engagement of the professors without outside resources—just really got to see them outside of how we see them all the time and them bringing the information back to us. My professors and the professionals really stood out at that time.

The theme of active faculty participation was characterized by shaping lessons around the events, hosting discussions during or outside of class, and engaging with the protests. This theme is contrasted with passive faculty participation, which is described in the following section.

Passive Faculty Participation

Many faculty did not take an active role, but they did participate passively by addressing the events for administrative purposes. The two subthemes that emerged under passive faculty participation were the offering of a safety warning to students and logistical accommodations. Of the students interviewed, 42% reported that their professors offered a safety warning, which was generally appreciated by students. One student recalled, "Receiving the message from my instructor, I felt relieved that she said it was OK if we felt unsafe because it was good to have a faculty member validate that I felt unsafe…"

Some participants recalled their professors' safety warning in classes where they were required to leave campus and go out into the community. One student in a community nutrition class recalled having to go to the university's Health Resource Center "across Delmar," a street that is often referenced as the Delmar Divide between two starkly different St. Louis neighborhoods in terms of racial makeup and socioeconomic status (Harlan, 2014). This student hypothesized that her professor gave students a safety warning given the requirement of the class to visit the Health Resource Center and its location within the city.

Other students recalled their professors making logistical accommodations to class. Of those

interviewed, 58% identified various ways in which faculty made adjustments to their courses. Examples of logistical accommodations included cancelling class, moving to a different room, or moving the date of an exam. One student recalled an encounter with a protestor that referred to her using a religious pejorative while she was walking past the clock tower on her way to an exam. She recalled:

> I went up to my professor that I had the exam when I had my encounter. I said I need to go make an incident report, because I was just walking to your exam, and this happened. And he was very understanding. He allowed me to go take care of that and then come take the exam.

In contrast with active faculty participation, passive participation was characterized by administrative changes or announcements within a course. Only two subthemes emerged under passive faculty participation, safety warnings and logistical accommodations, though a high percentage of students recalled instances of each.

Course Relevance

Closely tied to the themes of active and passive faculty participation was that of course relevance. This theme emerged as there was a clear distinction between the types of courses where faculty did or did not address the events. Courses in which the professors did address the events actively were primarily within the humanities or social sciences; course subjects included sociology, race and ethnicity, cultural diversity, social studies, English, public health, theology, and inter-professional health care. Courses in which the professors addressed events passively or not at all were primarily within mathematics or sciences; course subjects included physics, mathematics, and engineering.

Students expressed strong feelings towards the appropriateness of class discussions given their relevance within the course subject. For instance, one student recalled, "It [a class] was called Race and Ethnicity or something like that. Obviously it was very germane to our class topic." In contrast, another student recalled, "I'm in the sciences and most of my classes, even the humanities, dealt with science-related matters, so social justice and race relations didn't really have a place in it, to be frank." At the same time, students recalled classes where the subject wasn't addressed but felt that it should have been. One participant reported, "I was in an ethics class, which could have been a good platform to be addressed."

Thus, course relevance was a significant factor in whether or not faculty actively addressed the events, as well as how students perceived the appropriateness of class discussions. There was a fairly clear distinction

between the humanities and social sciences versus mathematics and science. However, certain outliers, such as an ethics course, were perceived as appropriate platforms where discussions did not necessarily occur.

Altered Academic Experience

Many participants described ways in which their academic experience was affected by the events on campus and in the community. The theme of altered academic experience emerged from these recollections and was characterized by distraction during class, distraction from studying, the course content seeming more applicable toward everyday situations, and an altered perception of classmates.

Of those that participated in this study, 16% of students recalled being distracted from class. Students reported being distracted in two ways, either due to the fact that they could hear the protests going on outside their classrooms, or due to the fact that they knew the protests were going on and were constantly thinking about them. One student described her experience, noting, "It was difficult to focus on anything because you knew that was going on outside. And you could hear them outside. Even when you are in your exams they were very loud." Similarly, 5% of participants reported distractions while studying. One student described changing study locations away from the library (which is close in physical proximity to the clock tower) due to student organizations that were protesting in designated quiet areas of the library.

Some students described how their academic experience was affected in the classroom, either as the course content seemed more applicable toward everyday situations or the relationships among students shifted. Of those interviewed, 5% described the course content as becoming more vivid and applicable to real life. A student described her experience: "I think this gave an opportunity, um, to like, take what you're learning in the classroom and apply it to real life. And get out there and see what cultural incompetence looks like…" Another student described how her perception of her classmates shifted after seeing their responses to the situation. She explained, "…[I]t gave a lot of insight to people that I thought I knew."

Many students felt their academic experiences were affected second to the events on campus and in the community, both in positive and negative ways. This theme contrasted with those who felt their learning was not affected in any way. The following theme, business as usual, captures the latter.

Business as Usual

The theme of business as usual emerged from the majority of students that felt their academic experience

was not affected. Subthemes that emerged were both negative and positive reactions towards courses in which faculty did not address the events at length.

Of those interviewed, 79% felt their classroom experience was not affected. Students were generally positive towards the fact that their courses continued unchanged. One student reported, "I think it was professional of them to continue and not allow the unrest to affect education and affect the degree I was pursuing." Eleven percent of students described a feeling of comfort in being able to continue on with college life. For instance, a student in the Parks College of Engineering described:

> I was happy with how the instructors handled it. I was happy with how the Parks dean handled it. They mentioned it, they gave safety advice, but they kept with the schooling. That was nice because it gave us something to fall back on.

In contrast, 16% of participants were upset when the events were not addressed at all. The students that reported distress in this manner recounted experiences in which they were required to leave campus and engage in the community as a course requirement. One student was required to participate an event at a farmer's market in Ferguson. She recalled, "The fact that it wasn't addressed and felt mute made me feel really uncomfortable, and um, kind of irritated." Another student was required to visit the university's Health Resource Center, located in a predominantly black neighborhood. She described an internal struggle of being a white person holding authority and trying to help individuals in the black community. She recalled, "If anything, I was very aware of my own race and not knowing how an interaction was going to go or not."

Most of the students that participated in this study felt their academic experience was business as usual, despite the tensions on and off campus. While some felt glad and even relieved that their courses weren't affected, others were upset that the events were not addressed, especially those required to engage in the community as a course requirement.

Deference for Faulty Position

The theme of deference for faculty position emerged from students' perceptions of their professors. Subthemes that emerged included both perceived facts regarding what faculty knew about the events and students' ethical judgments regarding their professors' positions. Students expressed largely positive feelings and respect towards their professors' viewpoints and leadership.

The strongest subtheme that emerged under deference for faculty position was that faculty held neutral viewpoints in the classroom. Of those interviewed, 32% recalled their professors as being neutral on the subject, a position that was largely appreciated among participants. One student recalled, "They [the professors] didn't express their opinions. They wanted to know what we thought and how we felt." Another student discussed the faculty member from the University of Missouri at Columbia that was fired in 2016 and sympathized for the difficulty of the situation; she explained, "You can't really step out of the 'I'm a teacher in this subject and I need to be doing this and doing more.'" None of the participants interviewed expressed any negative feelings towards faculty that held neutral viewpoints.

Some participants expressed notable esteem for their professors' viewpoints. Of those interviewed, 16% described how their professors held valuable viewpoints, either due to their involvement in the community or to nature of their professions. For instance, one participant described how one of her professors lived in Ferguson and would talk openly with her students about her experiences. The student recalled, "She would talk about the things the community was doing and not showing on the news every night: how they were rebuilding and how they were working towards other things." In reference to a psychology professor, one student described, "I mean, he's a psychology guy—he relates it to everything. Very smart individual, so he sort of related all of his knowledge to the incident." In fact, in response to an interview question about what stuck out most in respondents' minds about the events in Ferguson during the 2014-2015 school year, 16% stated that discussion with their professors was the most memorable part. These students' recollections of class events were largely positive in nature.

Lastly, some students recalled perceived facts about what their professors knew or how they were being ordered to behave. Sixteen percent of students stated they believed faculty were aware of the events, while 5% believed faculty were shocked. One student noted, "I saw a few instructors walk through the clock tower while it was happening, and they were just shocked: you could see it on their faces. They just didn't know how bad it was." Other minor subthemes that emerged were that faculty were being directed by the president and administration and that the faculty and staff were unified.

Deference for faculty position was characterized by respect for professors' neutrality, their activity within the community, or their relevant expertise in certain fields. Students also perceived certain facts about what their professors knew of the events or were being told to do by the university's administration. Whether or not those professed facts were true or not, these findings captured what students believed or assumed to be true during that time.

Discussion

Comparison to Previous Research

The findings of this study confirms prior research wherein some faculty members did not address the crisis at all, though others did so in a variety of ways. Mirroring DiPietro's findings on the faculty response following 9/11, the primary ways in which faculty actively addressed the events were by hosting class discussions and incorporating the events into the curriculum. One of the primary ways faculty passively addressed the events in both this study and DiPietro's was by offering logical accommodations; in this study, accommodations included cancelling class, moving to a different room, or moving the date of an exam, whereas DiPietro reported the most common examples of offering extensions or excusing students from exams. Also, offering a safety warning was a strong subtheme of passive faculty participation in this study, which did not appear in previous research findings.

These deviations were likely due to the nature of the crisis event to which faculty were responding. Whereas 9/11 was an isolated series of events that occurred within a span of less than two hours, the events in Ferguson and surrounding St. Louis city spanned several months. Also, the proximity of the events to faculty and students differed greatly. Though the 9/11 attacks threatened Americans' sense of national security, the terrorist attacks were isolated to distinct areas of specific cities. In contrast, the Occupy SLU movement was occurring in the center of the university's campus, often directly outside classrooms and student dorms. Thus, the strong subtheme that emerged from this study of faculty offering a safety warning is explained given the timeline and proximity of the events to both students and faculty.

In terms of student perceptions, this study confirms prior findings that students find it helpful when their professors address the events in the classroom, and they may feel frustrated or irritable when their professors do not address the events at all. Similar to prior studies, students may feel frustrated when their professors acknowledge the events but insist the course continue uninterrupted (Huston & DiPietro, 2007). However, a deviating finding of this study was that many students felt relieved when their classes were not affected. These students reported that classes provided a resulting sense of security, an opportunity to "go on with normal class life," something to "fall back on," and an appropriate setting to address the events. They also noted that other unrelated classes should not be affected.

Considerations for Faculty

Several excellent resources have been published to support faculty in handling a crisis event in the classroom (American Academy of Experts in Traumatic Stress, 2012; Chick, 2013; Northern Illinois University, 2015; Wildman, 2008). The findings of this study point towards additional considerations for to support, inform, and prepare faculty members. These recommendations are summarized below.

Remember your position in the classroom. Especially in times of crisis, students will look to you for guidance, leadership, and support. Whether you simply acknowledge students' concerns or reorient your curriculum around the events, you are in a powerful position to support your students' development. For some, conversations and interactions with you may be the most memorable part of their experience, especially if you teach in a subject matter germane to current events.

Also, given your position in your college of university, students may assume certain truths, such as your awareness of any developments, your alliance with other faculty or staff, or your submission to the leadership of your administration. At the same time, know that students appreciate you holding a neutral position and allowing students to develop their own opinions, especially during class discussions. Use discernment towards your expression of your own knowledge and opinions.

Consider the relevance of your subject. No matter your subject, most students will appreciate you at least acknowledging the events, offering a safety warning when appropriate, and making accommodations to your course as needed. When considering whether or not to actively address the events, such as holding a class discussion or adapting your curriculum, consider the relevance of your course subject to current events. Students will likely appreciate and even expect you to actively address the events when your subject matter is relevant, and yet they may prefer their courses continue uninterrupted when your subject matter is not. In fact, for those taking courses unrelated to current events, the opportunity to continue their education uninterrupted may provide a sense of stability.

Consider how student life may be affected on and off campus. Assess the impact of your course requirements on student life, such as whether they are required to transverse a part of campus that may make them feel unsafe or whether the dorms are in close proximity to events occurring on campus. If so, you may wish to make adjustments to your course, such as moving the location or opting for an online class meeting. Especially in the event that students have to leave campus to fulfill a requirement for your course, consider at minimum acknowledging the fact and listening to any student concerns. Though you are not accountable for all aspects of student life, you may wish to make adjustments to your course in ways that will support your students' needs. Students will appreciate that you understand they have full lives outside of your

classroom and that you are willing to make adjustments to your course to support them.

Limitations & Future Research

The findings of this study are limited given that the population was representative of one university, the students self-selected to participate, and the interviews were conducted by two different research team members. Also, the nature of the civil unrest in Ferguson and the Occupy SLU movement is a different scope of crisis compared to other national events such as 9/11 or Hurricane Katrina. What's more, the findings depicted students' perceptions of how faculty reacted, but they do not reflect faculty members' own recollections of how they actually responded.

Further research is needed to investigate the student experience at other colleges and universities in the St. Louis area, the faculty perspective on how and why they addressed the events in Ferguson, and other aspects of the student experience related to Ferguson during the 2014-2015 academic year.

Conclusion

Crisis events of some magnitude may be considered inevitable in the life of an institution. During these times, faculty can expect their students to look to them for leadership, support, and guidance. Especially when the course content is relevant to a crisis event, students will appreciate and even expect the events to be addressed in the classroom.

The findings of this study revealed both active and passive ways in which faculty addressed the civil unrest occurring on campus at Saint Louis University during the 2014-2015 school year. Given that the Occupy SLU movement was a historic time period in the life of Saint Louis University, these findings support that faculty responded in a variety of ways, largely in ways that fit their course content, addressed student needs, and supported student development. Though every institution and crisis event will require individualized planning, these findings may serve to inform and support faculty in how they may address crisis events in the future.

Acknowledgements

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This research expands upon his recent publications in the *Western Journal of Black Studies* and the *Journal of College Admission* with regards to the Darren Wilson grand jury decision.

Supporting Source Integration in Student Writing

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A cross-disciplinary team of composition, communication, and library faculty used lesson study to investigate interdisciplinary instructional strategies to improve students' use of quoting in their writing. The team developed a three-class lesson plan to introduce the concept of quoting, practice the concept, and allow students to reflect on their use of quotations in their writing. We collected a pre and post quiz to measure students' understanding before and after the lesson, students' practice paragraphs, students' reflections, and students' final course research assignments. These samples were analyzed by the research team. Our evidence suggests that students can articulate how a quote from a source should be integrated into their writing by describing how they would use a signal phrase and quotation marks, but they have difficulty in applying this complex skill in their own writing even after focused instruction on how to use quotes.

In a changing information landscape, the challenges of teaching ethical and responsible use of sources in the 21st century has become more important, but also equally challenging, across the disciplines. Recognizing these challenges, five faculty representing the library, writing center, communication, and first-year composition programs partnered on an interdisciplinary project. Bringing these varied perspectives together helped to strengthen our understanding of what it means for students to integrate sources into their writing appropriately. This article presents our project of supporting source integration in student writing utilizing the lesson study method. We were drawn to lesson study as a research process by the work of Cerbin (2011). He described lesson study as "a method through which teachers can build the kind of *pedagogical content knowledge* that could not only improve their own teaching but move the practice of teaching forward in their fields" (p.105, italics in the original). Lesson study offered an empirical look advocated by Howard (2014) that would evaluate the effectiveness of our citation instruction.

At our college the problem of source integration appears each year when the composition program reviews first-year student writing, with integration and citation of sources as the lowest scoring areas on the assessment rubric. The rubric looks at both how students use the source to support their ideas and how they format their quotations. Historically, students' performance on the criteria measuring their ability to integrate and cite sources is lower compared to performance on other rubric criteria. To address this issue, the composition coordinator suggested utilizing a lesson study design in an effort to improve student source integration in courses across our curriculum. A call was made to interested parties in other disciplines to participate in the lesson study, and an invitation was extended to the library faculty member assigned to the English and Communication Department.

To improve students' integration of sources, our interdisciplinary team collected information about the effectiveness of a lesson plan that was focused on developing students' ability to appropriately integrate a quotation into their writing. This lesson plan was structured so that it was initially taught to second-year students in a business communication course, revised, and then taught to first-year students in a first-year composition course. Our evidence suggests that students can articulate how a quote from a source should be integrated into their writing by describing how they would use a signal phrase and quotation marks, but they have difficulty in applying this complex skill in their own writing even after focused instruction. In addition, course instructors across disciplines who expect source citation must provide multiple opportunities throughout a term for students to practice citation. These multiple touch points are essential as we found that even a week of dedicated instruction was not enough to help most students learn to integrate the ideas of others into their own writing appropriately.

Literature Review

One of the hallmarks of academic writing is writing from sources. But how do students learn to write from sources? In a review of the current research on student citations, Cumming, Lai, and Cho (2016) claim that "students experience difficulties with, but develop certain strategies to deal with, the complex processes of writing from sources" (p. 50). The landmark work of the Citation Project as reported in Howard, Serviss, and Rodrigue (2010) noted that students struggle with citation of sources because they have not understood, or are unable to understand, the source material. The study suggested that instead of writing from an understanding of an article in its entirety, students look for sentences they think apply to what they are writing about and use them in their writing. The authors speculated that students may only use sentences from the source instead of the entire article because they may not understand the source

article, they may not care about the research project, or they do not understand how to use their sources. The Citation Project was an outgrowth of Howard's (1993) work in which she described "patchwriting" as "copying from a source text and then deleting some words, altering grammatical structures, or plugging in one-for-one synonym substitutes" (p. 233). Howard suggested that patchwriting is a developmental stage of learning to use citations and is not a form of academic dishonesty. Instead, instructors need to help students to understand their sources and their reasons for using them in their writing in order to develop as responsible writers. Cooper (2007) too argued that the inability to read and reflect effectively results in students "assembling research as patchwork quilts rather than weaving a fabric of new knowledge" (p. 63). She stated that the practice of patchwork research emphasizes the problem students have distinguishing between knowledge and information. The ease of information access and sharing has further complicated the problem of patchwork research. She believed that millennial students who are comfortable sharing information informally find the transition to formal scholarship that requires reflection and understanding difficult.

This lack of understanding is supported by Jamieson's (2013) contention that there is a wide gap between instructors' goals and students' goals in research writing. Instructors assumed that students comprehended and processed the content of the sources they selected to write their research papers and thus the paper serves as a reflection of reading and reflection skills. However, students were frequently guided by the goal of producing the final product of a "Research Paper" and did not engage in the kind of reading that they need to gain an in-depth knowledge and understanding of the subject they were researching. These findings echo research conducted by Kennedy (1985) who identified fluent and not so-fluent-readers and examined their reading strategies while engaged in a "writing from sources" activity. The results were mixed, but the truly fluent readers engaged in more planning than the not-so-fluent readers, and they also used more reading strategies. Wells (1993) recognized the value of reading strategies and pointed out "[q]uite a few essential skills related to reading and thinking are . . . involved" in using sources appropriately (p. 63). One of these skills was the ability to quote source material. Wells asserted:

> Where to incorporate a quote in text, how much of a passage to use, how to edit a quoted passage using brackets and ellipses, how to work a quote into text fluidly and coherently, and how (and whether) to introduce it, are all considerations beyond the abilities of basic writers, who need sufficient practice, feedback, and reading

experience with quoted material to produce a research paper. . . (p. 63)

In addition to these difficulties, Vardi (2012) pointed out that students are further challenged when instructors teach referencing from a plagiarism perspective as opposed to through the lens of critical thinking. In doing so, the teaching focus is on convention rather than engagement with the ideas presented in the literature. Based on the results of a study that used a critical writing approach to referencing, Vardi concluded that the insistence on academic integrity can affect how referencing is taught. She suggested that academia needs to reevaluate how plagiarism and citations skills relate and how to develop citations skills as a way to engage and think critically with a discipline's ideas and practices. This notion of better connectivity between referencing and context was supported by the work of Stagg, Kimmins, and Pavlovski (2013), who argued that because "referencing, like research and other academic disciplines, has often not been taught explicitly," the attitude of first-year university students toward referencing is that of compliance (p. 453).

Awareness of these barriers in effective referencing by students increasing plagiarism led Owens and White (2013) to conduct a five-year systematic strategy to reduce plagiarism among first-year psychology students. They concluded that initially high plagiarism rates were reduced largely due to the systematic use of educational interventions that were integrated into the courses. Their interventions were not peripheral activities but involved students in interactive in-class and online activities that not only exposed students to the pitfalls of plagiarism, but also emphasized writing and referencing practices.

Since writing from sources is a common feature of academic writing, it might be expected that students will be able to easily transfer their knowledge and experience of using sources in one context to another. However, writing researchers (Robertson, Taczak, & Yancey 2012; Wardle, 2007) suggest that transfer is not an easy process for students. In Wardle's (2007) study, her students were not often asked to use the skills and knowledge they gained in their first-year writing courses when they progressed to their second-year courses. Robertson and colleagues (2012) argue that students may lack prior experiences to draw upon in writing from sources. These researchers suggest that the writing assignments given in other courses must be engaging and draw upon students' prior knowledge in order to facilitate transfer of students' knowledge of writing, including writing from sources.

It is evident from the literature that citation skills cannot be divorced from accompanying critical thinking and reading skills, followed by appropriate reflection.

Students are unable to understand the difference between citation and integration as distinct skills and frequently think if they do one, they are automatically meeting the requirements of the other. This misconception needs to be addressed with integrated classroom interventions that help students see them as separate but necessary complementary activities. To help students think beyond compliance and integrate sources responsibly and effectively, the need to nurture source integration in student writing becomes even more urgent.

The Source Integration Study

Settings and Participants

Our lesson study took place at an open enrollment regional campus of a large urban university in the Midwest. The college is home to over 5,000 students and is the third largest college within the larger university. Students need a GED or high school diploma for admission. The average high school GPA of incoming freshman is 2.65, and of the students who took the ACT or SAT, the average scores were 19 and 920 respectively. In addition, 47% of students are first-generation college students, and many of them were referred to the college by the main campus because they do not meet the selective admission requirements required for admission. Forty one percent of students are enrolled in a career program, and the remaining 59% of students are enrolled in an associate program designed for them to either transfer to the main campus or to another college or university. With this level of preparation and the great variation in skill level, many students coming to the college do not have much experience in using sources in their writing. Each class had approximately 20 students who participated in the lesson study process. Most students in the second-year communication class completed the required first-year composition course. Most students in the composition course were first-year students who had graduated high school the previous spring, but there were two returning students.

The Lesson Study Process

The lesson study method begins with identification of a concept or procedure that students have difficulty mastering. For this project, we identified source integration as the concept we would like to examine. Next, the team examined the research that has already been published on students' use of citations. We found the work of Howard (1993, 2010, & 2014) and Jamieson (2013) to be especially helpful in understanding the difficulties students have with source integration. Once the team understood how others have approached source integration, we worked collaboratively to design a lesson.

With the intersection of research and writing, it was clear that library instruction sessions would be needed for both the second-year business communication and first-year composition course to help support students in the research process. Prior to presenting the lesson in either class, both courses received two library instruction sessions each with sessions taking place one week prior to the lesson plan being taught. During these sessions the librarian focused on search strategies and the evaluation of sources to get students ready to conduct the research required for the course assignments. Although the research concepts were similar for each course, the course level and type of research assignment played a strong role in the content and the in-class activities.

The lessons were taught in both courses by the course instructors who were also members of the lesson study team. These two courses were selected for testing the lessons because both courses required students to write a major paper with citations. In the business communication class, students were asked to write a formal business report that proposed a service and illustrated how the service would benefit a specific company. In the composition class, students were tasked with writing a research paper. One of the learning outcomes for English Composition is information literacy and the research paper is an assignment that requires students to demonstrate skills in that area. The curriculum of the course is designed to help students develop information literacy skills over several assignments leading to the research paper. For both assignments, students were expected to conduct research and use signal phrases to introduce their research. Both courses are part of the general education curriculum. All students are required to take composition, and business communication is a general education elective. Both classes were 80 minutes in length. Part of the intent of the study was to design a lesson plan that could be used in a variety of disciplines and courses to instruct students on proper source citation, and, hence, the courses were selected because they were from separate disciplines.

The lessons for each course were taught during a different week in the semester, which provided time for the lesson study team to observe, reflect, discuss, and revise the lesson. During the fourth week of the semester, the first instructor taught the lesson to a second-year business communication class, and the lesson study team took extensive field notes on the students' performance and behavior during the lesson. The instructor also wrote a reflection on how she believed the lesson went. The team debriefed on the strengths and weaknesses of the lesson using field notes, student exercises, and student reflections. We reflected on this information to revise the lesson. After reviewing and making changes based on observations

during the business communication class, we tested the lesson in the composition class during the fifth week of the semester. The first modification explicitly required the first-year students to annotate the three assigned sources, which the second-year students were not required to do. To encourage engagement and participation during the group activity, the second modification had students exchange their in-class paragraphs with another group instead of within the same group. In this way students seemed more willing to share the paragraph's strengths and weaknesses during the class discussion because it was someone else's writing. The revised lesson was taught by the instructor of the first-year English composition class. As before, the other team members took field notes of students' behaviors and reactions to the lesson and collected student exercises and reflections. The data were then analyzed to determine the overall effectiveness of the lesson.

Data Analysis

The lesson study method depends upon the team analyzing the data about student learning that has been collected during the implementations of the lesson. Our analysis was guided by the following two questions:

1. Did the lesson fulfill the goals/outcomes?
2. How do we know? What evidence do we have?

We collected many types of evidence to evaluate the lesson's effectiveness: student quizzes, student-generated paragraphs, students' reflections on their integration abilities, and the team's field notes. For our analysis of the practice paragraphs and final research projects, we focused on the quotes students used in their writing. We looked for a sentence that connects the quote to their own argument, a signal phrase, and an explanation of how the quote pertains to the argument. Below is an example of an English composition student's use of quotation that we identified as effective:

> Society as a whole has formed very strong opinions, positive and negative, which can play havoc on a woman's perception of herself and influence her decision of whether or not to allow her hair to turn naturally grey. This decision can affect a woman mentally, socially, in the workplace, and within her family unit. Laura Clarke and Alexandra Korotchenko, co-authors of 'Shades of Grey: To Dye or Not To Dye One's Hair in Later Life,' state that 'Women are buckling under a beauty culture that insists that perfection is the only answer. This is greatly due to the innate ageist stereotypes that prompted this façade and deemed it as acceptable.'

> Although it sees the world is constantly engraving a lesson of acceptance, a woman's image is being discriminated against daily without her even realizing it. Women with grey hair should not be viewed or treated differently within our society because the effects of this is damaging to a woman's self-image.

In this example of an effective citation, the student has introduced her point in the beginning of the paragraph. She introduces the authors and title of the work she cites, then discusses how the quote relates to her point. This student clearly understands why she is using the source in her paper.

In other cases, students also produced ineffective citations. The most problematic citations were from those students who provided information without identifying the source such as this citation from a student in the second-year business communication course, "The Kroger Company is one of the most prominent grocery store's (sic) in the United States with 3,575 locations nationwide your brand is universally recognized." This student has obviously taken information from a website or perhaps an interview, but has not given credit to the source. In this case we said that citation was not done.

Even when the student below later cites information from an article, no context or explanation of the quoted material is provided to help readers understand why it has been included. For instance, the student wrote:

> I believe nothing sums up what team building truly does more than this abstract from an article called 'Team Building' by Christophe Orgueil, and John Sylvester they state that 'Teams might work in subgroups on the day, but will achieve a collective result by the end of the activity. Natural bonding will happen, and this will lead to a real sense of achievement and a collective feel good factor.'(1). This will lead to a satisfactory end to a day of well rounded (sic) activities that both you and your staff will enjoy.

Although this student has identified the article, readers do not know why the student has chosen to include this quoted material in his report, so we judged this quote as ineffective.

Field Notes

During the lessons, each group of students had one to two lesson study team members observing their behavior as they engaged in the lesson activities. We used the field notes to gauge the level of student engagement with the lesson. The observations were focused on answering four questions about key moments in the lesson: 1) What were students doing? 2)

Does student behavior match our expectations? 3) What does their behavior reveal about their learning? and 4) What patterns in student behavior and response to the instructor do you see? Our field notes from both class sessions revealed that most students were engaged in the key activities of the lesson. However, during the group work portion, one or two students would dominate the group. Groups tended to rush to closure instead of working through the criteria. Student behavior did not fully match our expectations as we hoped all students would be engaged in the lesson.

Our observations revealed a variety of student group dynamics that ranged from full engagement in the activity to group domination to non-participation. In our observations, many students engaged in the activities and attempted to apply the concepts and writing the in-class paragraph to demonstrate their understanding of source integration. However, within these same groups, it appeared that one or two students in the group controlled the activity. If these vocal students misunderstood the directions, the entire group was lost. However, when these same students understood the lesson, they helped explain it to others in their group who were confused. Ultimately, this group control resulted in these vocal students dominating the class discussion, which presented a challenge for the instructor to gauge how well all students understood the lesson. In addition, lesson study team members also observed the lack of participation by one or two students in the group who either chose not to work on the activity or only wrote one sentence instead of writing a paragraph as instructed. The instructors had good rapport with their classes, but it seemed students only wanted to do just enough to complete the activities.

Pre- and Post-Quizzes

Each lesson included a pre-quiz to assess what students knew about source integration followed by a post-quiz to see if they had a better understanding of these processes. We collected pre- and post- quizzes for students who completed all of the activities with a total of 30 students divided between the two courses. Figure 1 represents the percentage of both second- and first-year students who provided the correct answer on the pre and post quizzes.

As shown in Figure 1, most students answering the first question about introducing a quote seemed to know how to introduce a quote before the lesson. The two students who did not know were able to correctly answer the question in the post quiz. In answering the second question before the lesson, students were less sure about where to position a signal phrase, with only 31% of second-year students and 41% of first-year students knowing where to position it. However, after

the lesson 85% of second-year students and 53% of first-year students knew to position the signal phrase before the quoted material. In responding to the third question, the second-year students had an impressive increase in their understanding of where to place signal phrases after the lesson. Additionally, students were better able to choose appropriate verbs after the lesson and were also better able to explain why an integrated quotation was effective. In fact, 100% of the second-year students were able to explain why an integrated quote was effective in both the pre and post quizzes. In question four after the lesson, more students in both classes used the lesson criteria to explain their choice of the correct citation. However, three of the first-year students did not respond to this question in the post quiz.

Practice Paragraphs

The lesson for each class included an in-class activity where students wrote a practice paragraph that required them to integrate sources. We evaluated how well students integrated their sources into their practice paragraphs by utilizing a rubric designed to align with the lesson on source integration. The expectations for students included the following: a topic sentence for their paragraph, a signal phrase, appropriate punctuation, an explanation of the quote, and a separate sentence that made the connection between the source's ideas and the students' own ideas. The analysis of the paragraphs included a reading by two members of the research team followed by coding using the rubrics with a common score determined for each section of the rubric. The results of the analysis are presented in Figure 2 below with a total of 14 paragraphs from the first implementation of the lesson and 16 paragraphs from the second implementation of the lesson.

In the first implementation of the lesson, the second-year communication students struggled with applying the techniques described as shown in Figure 2. In the first implementation of the lesson, the second-year communication students began their paragraphs with the suggested topic sentence structure that was given during the lesson (71% effective, 21% ineffective, 7% not done). Most of the second-year students did not explain the topic sentence (7% effective). Few students included a signal phrase to introduce the cited material (29% effective, 36% ineffective, and 57% not done). The second-year students struggled with correctly formatting the quoted material (36% effective, 50% ineffective, and 14% not done). Students were better at explaining the quote (43% effective, 43% ineffective, 14% not done). Finally, students tried to connect the quote to their own point, but they did not do it effectively (29% effective, 50% ineffective, 19% not done).

Figure 1

Comparison of Quiz Scores for First-Year (n=17) and Second-Year (n=13) Students Given Before and After the Integrating Quotes Lessons Based on Quiz Questions (Refer to Appendix for Quiz Questions).
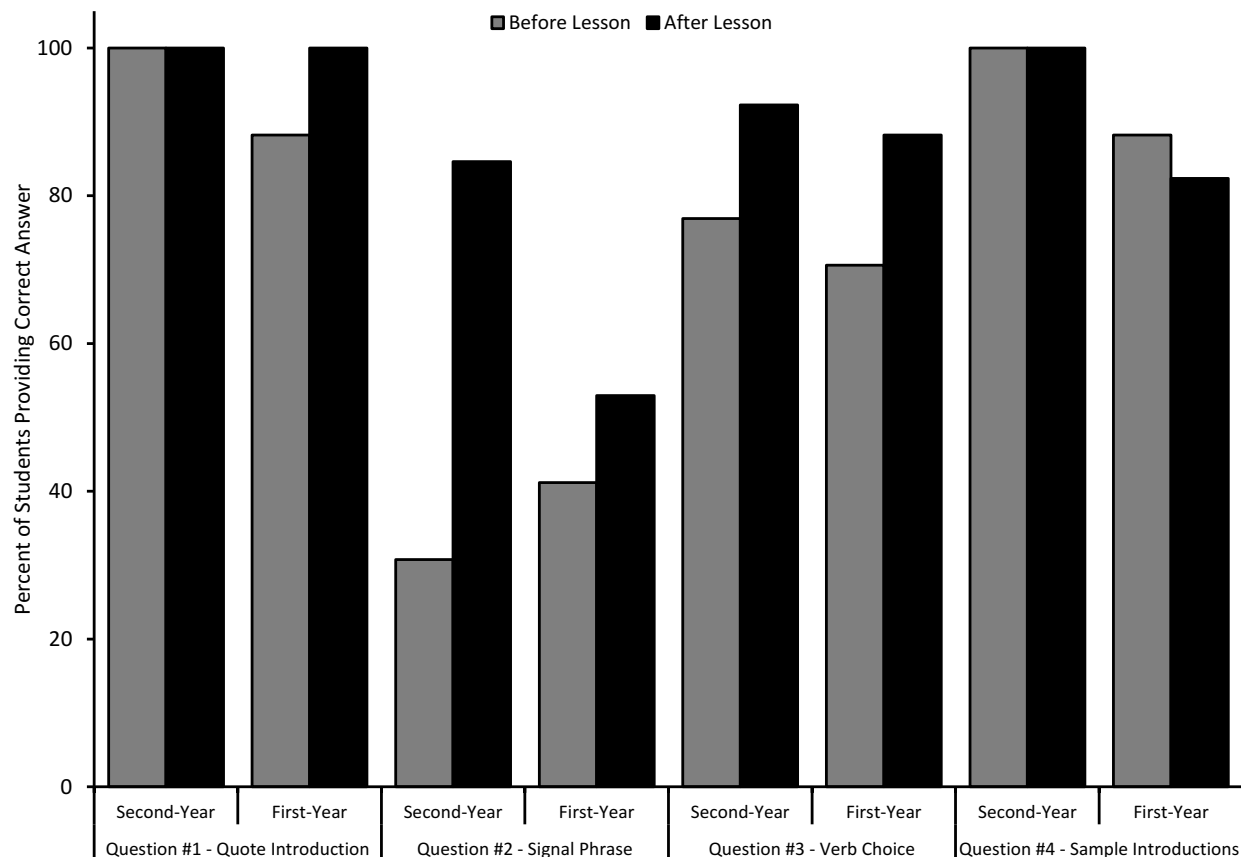
The second implementation of the lesson took place in the first-year composition class and the results ranged from effective to not completing the technique. Most students used the topic sentence structure provided as part of the lesson (81% effective, 13% ineffective, 6% not done). A few students explained the topic sentence; however, most students did not (25% effective, 63% ineffective, 12% not done). In this second implementation, many first-year students used a signal phrase to introduce the quote (56% effective, 31% ineffective). Students struggled with formatting the quote effectively (31% effective, 56% ineffective, 13% not done). Students also did not explain the quote (38% effective, 38% ineffective, and 25% not done). Few students effectively related the quote to their idea (13% effective, 56% ineffective and 31% not done). One perplexing outcome was the lack of difference between first and second-year students' performances on these paragraph activities. In fact, the first-year students seemed to do better at using signal phrases than the second-year students.

Student Reflections

Another part of the lesson included self-reflections where students were asked to reflect on their ability to integrate source material. These reflective paragraphs were analyzed using a rubric that examined students' ability to articulate what integration of sources meant, to identify other areas to apply source integration, and to discuss source credibility and how it relates to audience needs. Many students pointed out that time negatively influenced their performance of integrating sources in the practice paragraphs. They reported that they did not have time to do what they needed to do. Most of the students were able to explain the limitations of how they integrated the quote. They suggested specific revision strategies they would use to correct the

Figure 2

Comparison of First-Year and Second-Year Student Results Based on Rubric Criteria for Practice Paragraphs. There Were 16 First-Year and 14 Second-Year Students for the Practice Paragraph. TS = Topic Sentence; Q/P = Quote/Paraphrase.
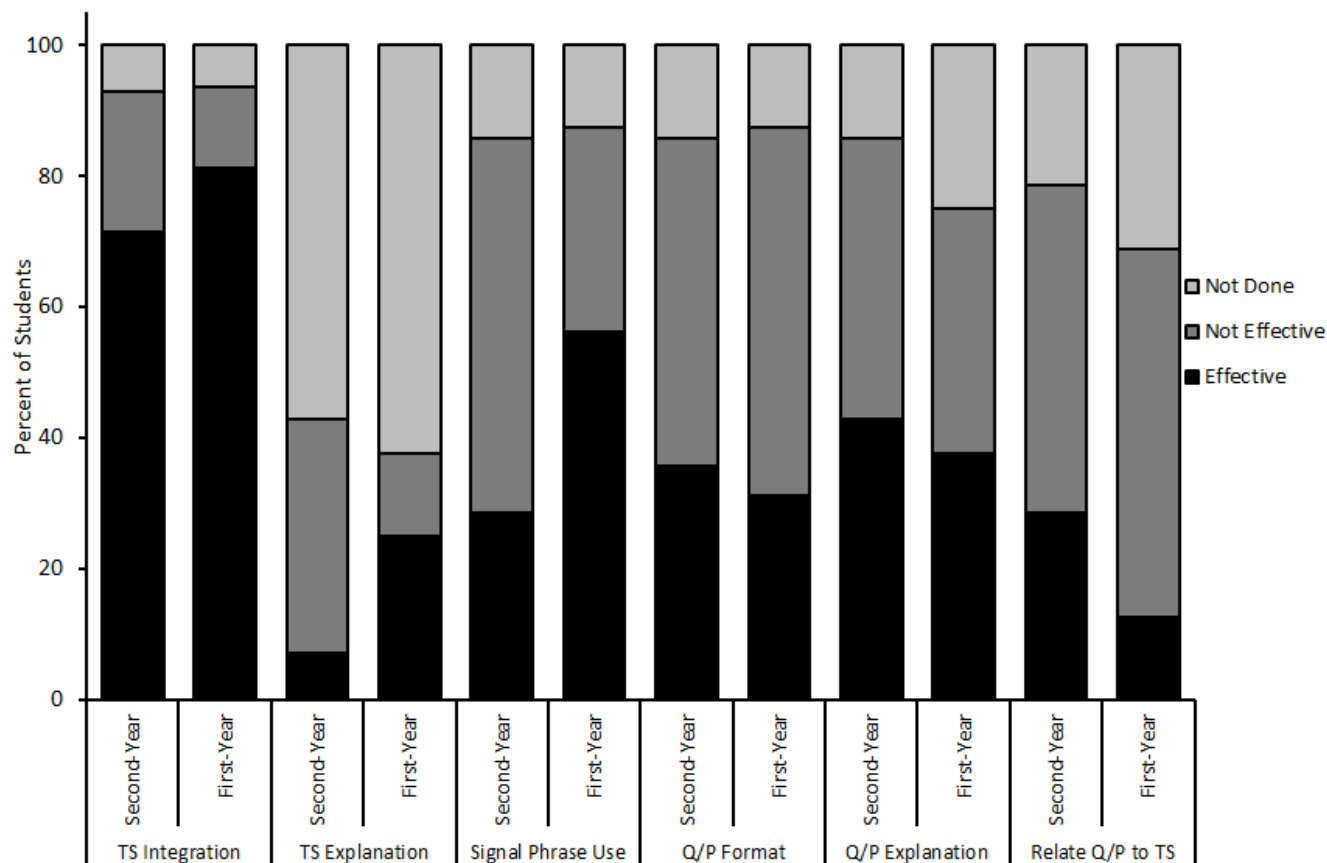
integration. For instance, one student wrote, "The most important thing that is left out in the paragraph is the explanation of the quote."

As part of their reflection, students also recognized the purpose of integrating sources. For example, another student wrote, "I would do a better job of using the sources to support my topic by explaining and interpreting the information it provides instead of forcing my audience to make the connection." Many students, especially first-year composition students, struggled with explaining the purpose of quote integration and did not recognize the rhetorical demands of appropriate integration. In their reflections, students were able to describe what worked and did not work using the criteria discussed in class. Although students were able to reflect on how a source should be integrated, they were not always able to successfully apply the techniques to their own writing.

Final Research Assignments

To understand the lasting effects of the citation instruction, we examined the students' final projects for each course. Using the same rubric from the practice paragraphs, we evaluated students' use of citations in the final projects utilizing the following criteria: use of a topic sentence, explanation of a topic sentence, introduction of the quote, proper quote format, explanation of the quote, and relation of the quote back to the topic sentence. The topic sentence should have been the student's own idea, which should have been followed with an explanation of that idea before a quote is inserted. We looked to see if a signal phrase or attributive tag was used to introduce the quote. We examined the quote for quotation marks and page numbers if appropriate. Students were expected to explain the quote to their readers or to provide some commentary for why it was there. Finally, we wanted

Figure 3

Comparison of First-Year and Second-Year Student Results Based on Rubric Criteria for Final Research Assignment. There were 17 First-Year and 12 Second-Year Students for the Final Research Assignment. TS = Topic Sentence; Q/P = Quote/Paraphrase.
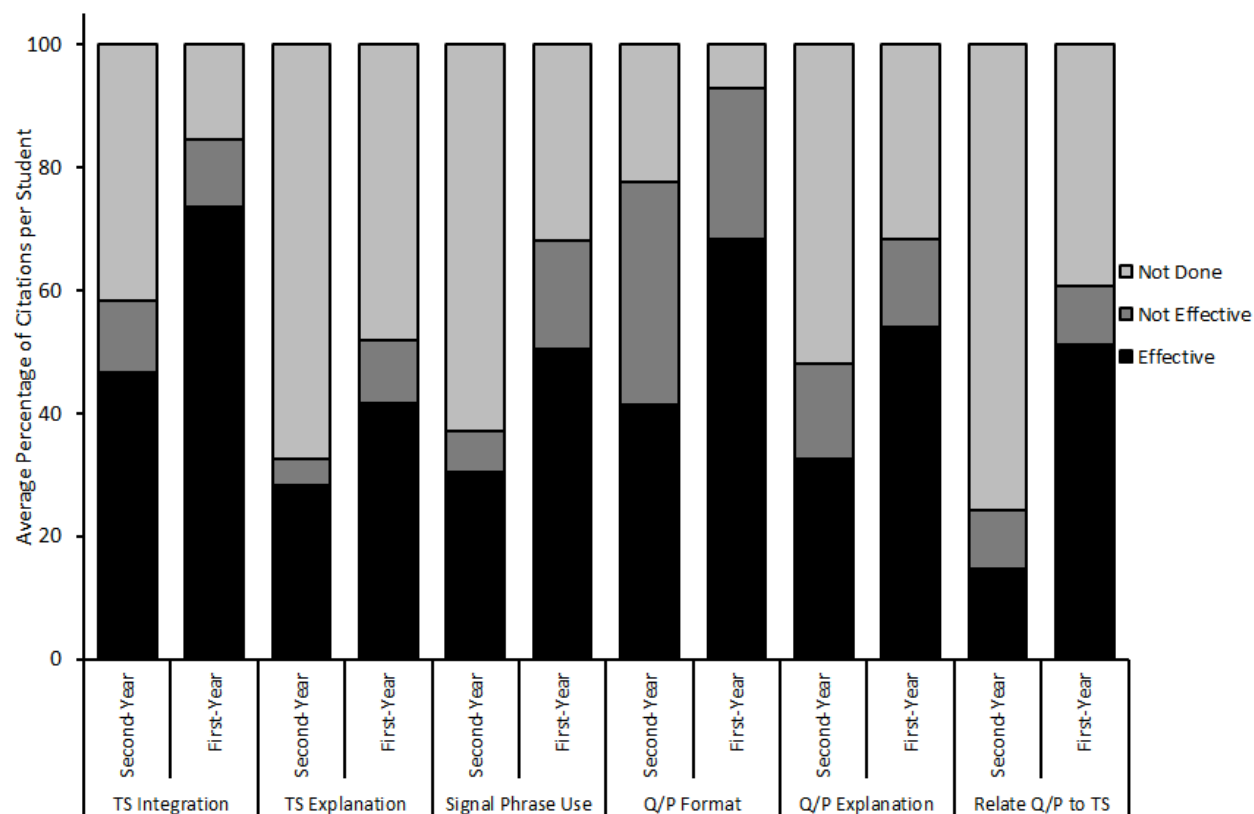
students to explain the relationship between the quote and their own idea in the topic sentence. First, each paper was read by two readers from the research team to determine when a citation was being used. Once team members agreed on the citations within a paper, each paper was again read by two readers. Each reader scored the citations, then met to discuss the ratings and arrive at a final score. If the readers could not agree on a common score, a third reader was consulted to arrive at a final score.

In the second-year course, students wrote a formal business research report that required students to select a company and either propose a teamwork training session, an employee assistance plan, or new payroll software to improve the company's functioning. We collected 13 of these assignments. One assignment did not have any references at all, so it was not included in our analysis. Of the 12 second-year students' papers, there were 85 citations. Of those 85 instances, about half contained topic sentences that effectively introduced students' ideas, and the other half did not

include a topic sentence where one should have been used (47% effective, 12% ineffective, 42% missing). Some second-year students did not include an explanation of the topic sentence in their assignments. In fact, they did this less often than the first-year students. In the second-year students' paragraphs, 67% of them did not have any explanation of the topic sentence. Only 28% of topic sentences in the second-year students' paragraphs were explained successfully.

In this assignment the second-year students did not use signal phrases to indicate cited material as often as we expected. In fact, in most cases there were no signal phrases (30% effective, 7% ineffective, 63% missing). The second-year students also did not format the citations, as was discussed in class, for most of their papers. Nearly half (42%) of the citations had effective formatting, while 22% were not formatted at all, and 36% were judged to be ineffectively formatted. In this assignment, students did not explain their cited material for their readers. Most citations did not have any explanation (33% effective, 15% ineffective, 52%

missing). For most citations, second-year students in this assignment did not attempt to relate the cited material to the topic sentence (15% effective, 9% ineffective, 76% missing). Second-year students either did not retain or transfer their knowledge on source citation they learned in their first-year required composition course. Students in our study used what they knew about how to format quotes, but it was not as strong in their mind as students in the first-year course who were actively taught MLA formatting conventions. Our findings here suggest that faculty in other disciplines and courses need to work with students as closely on source citation as done by English composition faculty.

In English composition students wrote a researched argument paper that required the use of supporting sources. We collected 17 final researched argument assignments that contained a total of 334 in-text citations. Most students did incorporate a topic sentence to express their own ideas about the topic. Topic sentences were mostly judged as effective (74% effective, 11% ineffective, 15% missing). There were no papers where students did not provide at least a few topic sentences, so it seems that students understood the importance of providing their own ideas before those of the authors they were citing.

Based on our results in Figure 3, first-year students were beginning to grasp the idea of how to use sources in their papers to support their own ideas instead of letting the source material dominate. Although a few papers were "data dumps," most students used their own ideas in the paper. The first-year students were less likely to include an explanation of their topic sentence (42% effective, 10% ineffective, 48% missing). First-year students did not use signal phrases to introduce their cited material as much as we expected (51% effective, 18% ineffective, 32% missing). Also, students were dropping quotes or paraphrases in their paper without any kind of introduction. Most first-year students were able to correctly format the quotes and paraphrases they used in their papers (68% effective, 25% ineffective, 7% missing). It seems this part of our lesson did remain with students as they worked on their final research project. In many instances, students explained the cited material for their readers (54% effective, 15% ineffective, 31% not done). First-year students also struggled with relating the quote to their topic sentence (51% effective, 10% ineffective, 39% not done).

Discussion

During this project, the lesson study team observed some struggles for students as well as some improvements. For example, the pre quiz responses before the lesson indicated students knew they had to introduce quotes but were less able to position the signal phrase appropriately. After the lesson students,

especially second-year students, were able to position the signal phrase appropriately. The practice paragraphs indicated students were continuing to work through the intricacies of source citation. Finally, their reflections on the quality of their practice paragraphs showed they understood what they were supposed to do even though the paragraphs were not well executed.

In their final research projects, each course required citation of sources, and we found the second-year students seemed to struggle more than the first-year students. Students in the second-year course wrote a formal business research report which required references. This might have been a genre of writing that is new to students, so they were unsure of how or why they needed to cite their sources. In fact, one student did not cite any sources in his report. Alternatively, the first-year students were completing the well-known "research paper" with its emphasis on using sources for support. Even if students were new to writing in this genre, they knew they had to cite their sources. The difference in performance between second- and first-year students may be due to the differences in the writing assignments, the amount of attention given to source citation in the courses, and to students' beliefs about the importance of citation in the course.

There was also variation in the amount of attention given to source citation in the courses. Source citation is a learning outcome and a large focus in the first-year writing course with repeated instruction and guidance. The second-year course expects to build on the foundation set by the first-year courses, so less time and attention were given to citation instruction so that other course learning outcomes could be developed. Spending three class sessions in the second-year course seemed like it would be more than enough instruction to remind students of what they had learned in their first-year course. We were surprised by the lack of transfer between the courses after we had made explicit connections in the instruction of source citation. This lack of transfer might have occurred because students did not believe they needed to cite sources in this communication course because it was not a "writing" course.

Conclusion

Our project findings echo the results of other researchers in this area such as Jamieson (2013); Howard and colleagues (2010); and Owen and White (2013). Our students made modest gains at integrating their sources but continued to struggle with this difficult concept. One way to help students understand the process of source citation would be to develop a shared vocabulary between our disciplines so we do not confuse students with different terms for the same concept. For instance, when we started this project, we realized that one of us used the term "signal phrase"

while another used "attributive tag" to refer to the same concept of introducing cited material. We also need to help our students see that their sources are engaged in a conversation and they are using the sources to enter this conversation. This metaphor spans our three disciplines and is a powerful way for us to help students see the connections between the learning outcomes in our fields. It links the work we do with students as library, communication, and composition faculty and allows us to develop this interdisciplinary examination of our students' experiences of writing with sources.

Our interdisciplinary project focused on showing students how to integrate sources into their writing in both a composition and business communication course. The findings echo Cumming and colleagues (2016) claims that students can better integrate citations when they are shown how to do this, given time to practice in class, and have the opportunity to reflect on how they are using sources in their writing. In addition, the results indicate it is important that the integration of sources be taught separately from the documentation of sources. With that in mind, course instructors across the disciplines may need to consider what this means for their students and the types of writing that takes place in the course and in the discipline. Additionally, source integration may look different from one field of study within a discipline to another. Therefore, building in multiple touch points throughout the course curriculum to emphasize what source integration looks like for that discipline may be one step in creating a foundation for the responsible and ethical use of sources. As other researchers (Owens & White, 2013; Robertson, Taczak, & Yancey, 2012; Wardle, 2007) suggest, programs may need to consider weaving this instruction throughout their curriculum. Furthermore, providing additional instruction time as well as creating multiple practice opportunities for students to directly apply what they are learning may help strengthen their understanding of what it means to use sources in discipline-based writing responsibly.

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Promoting Undergraduate Research Through Integrative Learning

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Educators in higher education often seek innovative pedagogies to include in their classrooms. This article describes an integrative learning experience and details the planning, implementation, considerations, and benefits of creating a major-specific undergraduate research day. The event created an opportunity for students to gain confidence and practice discussing their work during research poster presentations. The event also allowed them to integrate classroom activities and extracurricular experiences to make meaningful connections. Identifying the steps, considerations, and outcomes may inform educators considering implementing this technique. The description of the undergraduate research day is applicable across disciplines and is relevant to faculty and staff working with undergraduate students.

College educators often seek innovative pedagogies to include in their classrooms. Ideally, these methodologies integrate curriculum learning outcomes and skills sought by potential employers. Including new pedagogies may be challenging, but if educators understand practical aspects of incorporating such pedagogies, they may easily incorporate them while creating a positive experience for their students.

This article describes an integrative learning experience and details the planning, implementation, considerations, and benefits of creating a major-specific, undergraduate research day. Integrative learning can be defined as the process of creating connections between the skill and knowledge from curricular sources and experiences, links theory and practice, and uses a variety of viewpoints to aid student understanding of issues (Huber & Hutchings, 2004; Huber, Hutchings, Gale, Miller, & Breen, 2007). The pedagogy integrates lessons to help students make connections across curricula (Integrative Learning, n.d.). The description of the undergraduate research day is applicable across disciplines and relevant to faculty and staff working with undergraduate students. I will present my findings to the following questions:

- How do educators create an integrative learning experience that encourages students to combine curriculum, soft skills, and research?
- How do educators mitigate the risks involved in planning such experiences? What are some of the planning details and considerations needed for a successful event?

Background

The Bachelor of Science in Information Science (BSIS) program is a newer, small program in a College of Information and Communications. Forty-two students were declared majors in fall 2015.

While working with BSIS students, I realized most were comfortable presenting about a specific topic usually related to an assignment. Most assignments had rubrics or criteria that provided specific guidelines and requirements. For example, an assignment may focus on a research topic that concluded with a final paper. While not uncommon, this type of assignment provides minimal engagement. Students seemed reluctant to start their own research projects or expand on class projects as they lacked detailed requirements and included more abstract concepts. It was unclear how such a project might help make meaningful connections between what was occurring in the classroom and their future careers.

I addressed this gap in confidence and meaningful connections by creating a major-specific research day, known as BSIS Day. The event created an opportunity for students to gain confidence and practice talking about their work during research poster presentations. It also allowed them to link classroom and extracurricular activities. Other benefits included fostering a sense of community by bringing together the faculty, staff, and students outside of the classroom and providing a chance to market the program.

Literature Review

This research is grounded in the intersection of three areas: 1) integrative learning, 2) undergraduate research, and 3) soft skills sought by employers. Published work in each area supports the benefits of an undergraduate research day and provides a foundation to the research questions.

Integrative Learning

Integrative learning is the first area guiding the study. The benefits of implementing integrative learning experiences are well documented in educational research and include the ability to make meaningful connections between curriculum, applied knowledge, and student experiences. The Association of American Colleges and Universities (AACU) and the Carnegie Foundation for

the Advancement of Teaching (2004) provided a Statement on Integrative Learning that encapsulates the rationale and goals of this pedagogy:

> Fostering students' abilities to integrate learning—across courses, over time, and between campus and community life—is one of the most important goals and challenges of higher education. The undergraduate experience can be a fragmented landscape of general education courses, preparation for the major, co-curricular activities, and "the real world" beyond the campus. But an emphasis on integrative learning can help undergraduates put the pieces together and develop habits of mind that prepare them to make informed judgments in the conduct of personal, professional, and civic life (AACU, 2004, p. 1).

Integrative learning can be used to unite the sometimes fragmented undergraduate education. According to Boyer (1990), making and sharing these connections helps students professionally and personally: "The capacity to connect is central to scholarship broadly conceived-whether focused on discovery and creativity, integrating and interpreting knowledge from different disciplines, applying knowledge through real-world engagements, or teaching students and communicating with the public" (p. 2, as cited in Huber & Hutchings, 2004).

Integrative learning is just one piece of a complex learning experience. Students may have difficulties making these connections and require scaffolding or additional instruction. This instruction comes from the educator and the university infrastructure (Huber, Hutchings, & Gale, 2005). The university can include learning communities and other projects to aid students in creating meaningful connections (Gale, 2006). Assignments can be restructured to include reflection: a key factor in integrative learning that encourages students to make meaningful connections in their learning experiences (Mezirow, 1990).

Benefits of Undergraduate Research

This section reviews published studies illustrating the benefits of undergraduate research. This study looks specifically at the intersection of integrative learning and undergraduate research. Russell, Hancock, and McCullough (2007) discovered that students participating in undergraduate research positively increased their understanding, confidence, and awareness of research. These experiences also contributed to the students' desire to major in a STEM field (science, technology, engineering, or math). Participating in undergraduate research is beneficial for the retention and graduation rates of minority students (Barlow & Villarejo, 2004; Nagda,

Gregerman, Jonides, von Hippel, & Lerner, 1998). Other studies show that participating in undergraduate research can increase the perceived relevance of course works, confidence, and communication skills regardless of the student's major (Healey & Jenkins, 2009; Hunter, Larsen, & Seymour, 2007).

Soft skills

The final area directing the study is soft skills needed for employment. According to Heckman and Kautz (2012) soft skills are defined as "…personality traits, goals, motivations, and preferences that are valued in the labor market, in school, and in many other domains" (p. 451). Studies explored the importance of soft skills in higher education, in particular the ability to communicate both in writing and orally. An important component of leadership skills is the ability to effectively communicate with others (Adams, 2013; Crawford, Lang, Fink, Dalton, & Fielitz, 2011). Employers in the United States and Europe ranked writing and communication among the top three traits for employees with bachelors' and masters' degrees (Ghannadian, 2013). Identifying and cultivating the soft skills employers seek helps educators develop modern and marketable curricula.

Case Study and Pedagogy: BSIS Day

BSIS Day Goals and Outcomes

The goals and learning outcomes of BSIS Day were created based on feedback from instructors, our undergraduate advisory committee, and the existing mission of the undergraduate program. Other instructors observed students' reluctance to present or talk about research, as I had in my classes.

Based on this feedback, the short-term goal of BSIS Day was to create an event that allowed students the opportunity to present their research and make connections to course curriculum while developing confidence and soft skills. There were learning outcomes related to the goal: 1) introduce students to the research process, 2) create a poster that conveys their research and ideas, and 3) present their posters to attendees of BSIS Day. The long-term goal was to get BSIS students to participate in the university-wide undergraduate research day, which occurred the following semester.

Implementation

Planning BSIS Day was a year-long process. I kept observation notes and a journal to document the case study. The timeline is grouped into three phases. Each phase contains a description of the activities that

occurred along with key considerations and benefits I found relevant to the process. Early in the process, we established the goals and objectives of the event and secured approval and support from the administration.

Phase 1: 3-5 months before the event.

Defining research. The priority of the initial phase of the project was to help students define *research*. The University has an established Office of Undergraduate Research (OUR) that I consulted. They provided several definitions and examples that students could use as guidelines. The OUR intentionally used a broad definition to describe several research activities including: traditional research, internships, service-learning projects, and study abroad experiences (USC Office of Undergraduate Research, 2016). The definition allowed for activities in all majors to be considered a research activity. After obtaining permission from the OUR, resources were edited to be major specific. The only requirement about the research topic was that it has to be related to information science. Information science is a broad, interdisciplinary field so students with a variety of majors could find something fitting the criteria. In addition to the OUR research activities, BSIS students were encouraged to submit independent projects, group work, works-in-progress, and class projects. The flexibility of the definition allowed for more students to participate and integration of curriculum or personal experiences.

Promotion. Advertising and promoting BSIS Day was another key activity. The administration was eager to use the event as a marketing tool for the BSIS program and bring attention to the students' work. Staff created flyers, distributed them across campus, and sent materials to university listservs.

Information sessions. I created standardized materials and distributed them to the instructors teaching BSIS courses. The materials included definitions of research, examples of work, and step-by-step instructions for creating a poster. Instructors were asked to share the materials and discuss research in their individual classrooms, using their specific course curriculum. I also visited five classes to present about research and BSIS Day. Email listserv were used to share the research materials and details for the event. By attending the classes and sharing information over the listserv, the information was accessible to all BSIS students and others taking courses in the BSIS program.

Key considerations and benefits. It was beneficial to develop an explanation of research that students could understand and relate to their experiences. The Office of Undergraduate Research's definition allowed for a broad set of experiences to be discussed and is used in the university-wide research day. Asking students to define research at the beginning of our

discussions allowed me to better frame the conversation and talk about potential research posters. For example, a student described research as "hard" and "lab coats." Once I had a better understanding of their notions of research, I could address their concerns.

Phase 2: (3 months – 2 weeks from event).

Abstracts: writing and submission. Two workshops were conducted to help students with their progression in the research process. Faculty and staff covered abstract writing, outlined requirements for submitting an abstract, and offered students the opportunity to receive feedback from their peers and instructors. The workshops also helped create an environment where students could explore their connections with the curriculum. The process of providing feedback from peers, faculty, and staff created an venue where different perspectives of integrative learning were discussed and shared.

A Google™ form was created for abstract submission. The link was shared on the listserv several times prior to the deadline. We decided to cap the number of accepted submissions to ten, realizing it was an optimistic number. We received six submissions, all meeting the criteria, and accepted them.

Posters. After notification of acceptance I offered a workshop for poster design and printing. I also created a Microsoft PowerPoint™ template and distributed the file to the participants. Students were already familiar with the application, were comfortable creating content, and knew how to navigate the program. The file contained the college logo and the printing dimensions were set, so students could modify the appearance of the poster without worrying about print dimension or output settings. They were not required to use the template; however, five of the six students did. Draft posters were printed for editing purposes ensuring image quality and layout. Arrangements were made with the campus print services so students were not responsible for printing their posters. They electronically submitted their final posters, and the department took care of the printing cost.

Key considerations and benefits. There were 42 declared BSIS majors, approximately five students minoring in BSIS and about 125 students whom were non-majors taking our courses. While the event was shared with all the students in our classes, targeting our BSIS majors and minors was the best strategic option. It was decided 10 posters would be our goal based on the time we set aside for the day (three hours) and the available space in the building. I estimated we would receive about 15 abstracts early in the semester. As the abstract deadline grew closer and students' time commitments increased, I was hoping for two. In the end we had six submissions.

The number of posters, venue, and judges are important considerations when deciding on a realistic

size for the event. The venue may dictate the number of presenters and attendees. For our event it was important to replicate a setting similar to a professional conference. The presenters would be standing by their posters and talking to people about their work. The audience would be moving from poster to poster at different times. Fortunately, our building has wide hallways that accommodated this type of interaction.

It is important to note that printing costs may be a deterrent for participants. Efforts should be made to absorb the costs and not pass them onto the students. I recommend contacting the printers early in the process to determine deadlines for printing, accepted file formats, and submission guidelines.

The current décor in the hallways allowed for us to hang the posters on the walls from nails and hooks already there. Renting poster display boards is a significant addition to any budget. Had we not been able to use the building and existing hardware, the logistics of the event would have changed significantly. I recommend finding a venue and determining how the posters will be displayed early in the planning process.

Holding BSIS Day in our building encouraged the faculty, staff, and others to interact with the participants. Several participants commented that they liked having the event in our building because it was a familiar, comfortable place. The administration liked that the building was the backdrop for the promotional materials created during the event.

Four individuals were asked to serve as judges because of their roles in the community. The judges were from a variety of disciplines, but all were information professionals or had career paths similar to our students. For example, one judge was a graduate of the BSIS program and a student in our graduate program. Another judge was the Chief Information Officer for the State Library.

The other factors I found significant when establishing a manageable number of posters were manpower and the ability to provide feedback. Providing quality feedback for the students was important. Most students had not participated in a research poster event, so they needed quite a bit of feedback and guidance. The two most time-intensive activities were refining their research ideas and printing drafts of the posters. I recruited help from colleagues to provide the students feedback and refine their ideas. Printing draft posters also took a fair amount of time and feedback. Throughout the entire semester participants provided feedback to each other during each phase. Peer feedback seemed to increase confidence and foster a sense of community. I had not anticipated this effect, but I was pleased to see it among the students.

Phase 2 allowed students to work on several practical soft skills. Their writing and communication skills were refined during the proposal process. The creation of the posters allowed the participants to work on visual communication skills. Finally, the practice of providing and receiving constructive feedback occurred during the proposal writing and poster sessions.

Phase 3: BSIS Day (Event Day). This is a timeline of the day. It describes what was occurring simultaneously and allows for better planning if this event is replicated.

8:30 AM – 9:00 AM: Breakfast was served while announcements were delivered. I privately met with the judges to review logistics and procedures. Each judge received a packet with numbered ballots. The ballots contained a rubric for evaluating the poster content, design, and the participants' communication methods.

9:00 AM – 11:00 AM: The judges were given two hours to evaluate the six participants. During this time faculty, staff, and students viewed the posters and talked with the participants. College staff interviewed and photographed the participants. The interviews and images were later used as promotional materials for the college.

11:00 am – 11:30 am: After the two hours, ballots were collected, and totals were tallied. The participants and attendees waited for a few minutes for the awards to be announced. Everyone received a certificate of participation (printed prior to the event), and the Best BSIS Poster Award (printed that day) was awarded to the student with the highest score from the judges. Incidentally, there was a tie for the best poster.

Key Considerations and Benefits. The constructive feedback offered by the judges was invaluable. The judges also encouraged students to continue participating in these types of events because they gained practical skills needed in the profession. They also had suggestions on how to continue their professional development through other opportunities like internships and professional conferences. After the event, several participants commented that it was helpful to hear from working professionals and were excited for the chance to network in a smaller, less intimidating setting.

In informal debriefings after the event, all the participants expressed an increase in confidence about presenting and talking about their research. They also reported a better understanding of what is required to present in a professional setting.

I would be remiss not to mention the important role the parents and friends played in the day. Two of the six participants had parents who attended. One family drove 10 hours to attend the event and support their student. Another family drove two hours to surprise their student and brought along his grandfather. Friends came to the support the participants. Simply said, this was important to the students. Although not anticipated in the beginning, the excitement was passed on to their parents. We do not often get to meet to the students' parents, so it was nice to be able to

celebrate their accomplishments, demonstrate the benefits of integrative learning, and share the information science major.

Phase 3 built on the soft skills from Phase 2. In addition to the skills, participants had to work on their presentation and networking skills. They refined their verbal skills by explaining their research. Students also dressed professionally and represented themselves in a professional manner during the event.

Conclusion

I proposed the following research questions:

How do educators create an integrative learning experience that encourages students to combine curriculum, soft skills, and research?

Integrative learning helps connect pieces of undergraduate learning. It can take classroom experiences, link them with practical experiences, and provide an opportunity to work on soft skills. BSIS Day provided a venue for that kind of growth. Students had to formulate their topics that linked curriculum, experiences, and research. They were able to work on important soft skills like communication by writing an abstract, creating a poster, and presenting their work. They also had to delve deeper into the curriculum for their poster presentations and make connections between their experiences and course work.

The skills acquired by the participants are considered favorable regardless of the discipline or major. Defining research broadly and focusing on major-specific issues allows events like this to be replicated across campuses and curricula. The logistics and planning are similar, while the content of the posters make each research day unique.

- How do educators mitigate the risks involved in planning such experiences? What are some of the planning details and considerations needed for a successful event?

Detailing the planning and logistics of the event may help educators wanting to replicate the event in their own departments. Identifying potential pitfalls may also help reduce risks. Finding useful resources and securing help from others will make the event a success and foster a sense of community. For example, editing resources from the Office of Undergraduate Research saved considerable time and allowed for a broad set of experiences to be showcased. Recruiting help from faculty and staff is important when guiding students through the research process. Their feedback and expertise add to the learning experience and the sense of community. The resources used to create and

display the posters should also be considered early in the planning process. This includes poster design, printing, and displaying.

The goal of BSIS was to allow students the opportunity to present their research while developing confidence and communication skills. Other benefits emerged from the event. A sense of community was created not only among the students, but also the students, faculty, staff, and administration. The location of the event and the judges enhanced the feeling of community for the school and students. The event also provided an opportunity to showcase the program.

Educators often look for pedagogies that allow for meaningful connections between curriculum, personal experiences, and careers. Integrative learning can provide groundwork for these connections. Creating an experience that brings together these connections is beneficial to the student. Understanding the practical aspects of creating integrative learning experiences will make it easier for all involved.

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Designing Instruction for Critical Thinking: A Case of a Graduate Course on Evaluation of Training

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As students graduate and enter the workforce, they face the job market's demand for critical thinking (CT) skills. The demand is caused by the market's increasing need for providing professional services that require performing complex tasks. In response to this demand, institutions of higher education are expected to prepare their graduate through incorporating courses in their curricula that promote CT skills. While the definition of CT is contested across various scientific fields, several approaches to designing CT-based instruction have been proposed. This paper presents an application case of "immersion" and "infusion" approaches, borrowed from Ennis (1989), to a graduate course on evaluation of training and examines the results in terms of the critical thinking VALUE rubric developed by the American Colleges and Universities (AACU). We contend that successful application of these approaches depends heavily on relevant complex scaffolds that induce learners' immersion in CT and allow infusion of instructional features that support their CT activities. In our case, we used Systems Thinking to scaffold learners' immersion and adopted Human Performance Technology (HPT) to infuse learning activities aimed at CT. We finally examined our procedures and outcomes by using the AACU Value Rubric milestones.

The emphasis on cultivating critical thinking (CT) skills in students across all ages has been growing in the past decade. Educational standards for K-12 education emphasize improved CT as an outcome (e.g., Common Core Standards and 21st Century Skills), and it is also relevant during and after postsecondary education. Hart Research Associates (2013) documented that the job market expects higher education institutions to place more emphasis on training student competencies that lead to five key learning outcomes "including: critical thinking complex problem-solving, written and oral communication, and applied knowledge in real-world settings" (p. 1). Reasons for this demand include the changing nature of jobs due to advances in technology, which require employees capable of thinking critically and possessing transferrable skills to be used throughout their careers (Sternberg, 2013). To be able to respond to this demand, institutions of higher education should address these issues in their curricula and apply relevant instructional strategies in graduate and undergraduate courses to cultivate the required skills. The challenge appears to be more significant in graduate programs where students are preparing for recruitment by professional organizations to perform complex cognitive tasks.

Since the dawn of the last century, starting with scholars such as Dewey (1910), learners' passive acceptance of new information has been considered an educational problem. Instead, training reflective thinking in writing and critical scrutiny of new information have since been recommended as a main purpose of education. From this perspective, critical thinking occurs when learners investigate the issues and look for new evidence to support or counter the claim (Dewey, 1910). Scholars' emphasis on learners' reflective development led to discussion of learners' cognitive processing of new information and classification of learners' cognitive activities in Bloom's taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). In their original approach to the learning cognition process, Bloom and colleagues classified the objectives of learning into six hierarchical categories: knowledge, comprehension, application, analysis, evaluation, and synthesis (Bloom et al., 1956). Later, Krathwohl (2002), revisited this categorization and revised the taxonomy objectives according to the typology of required knowledge (factual, conceptual, procedural, and metacognitive). Krathwohl relabeled the last objective as "creating" and included the fundamental skills for higher order thinking in the last three categories of the taxonomy: analyze, evaluate, and create (Kennedy, Fisher, & Ennis, 1991; Lai, 2011).

Expanding the discussion of learners' cognitive processes, Elder and Paul (1996a), propose the CT stage theory according to which learners start as unreflective thinkers whose thinking gets challenged, which turns them into beginning thinkers who keep practicing thinking and advance their thinking skills until they master the thinking process. Learners progress through these six stages by using a rigorous self-assessment while encountering their own incorrect beliefs and develop as a thinker (Elder & Paul, 1996b).

The underpinnings of these discussions on learners' reflection and thinking processes are the foundational elements of CT as identified by other authors (see Lai, 2011). However, some consider using Bloom's taxonomy as a tool for operationalizing CT attributes due to their relationship (Miri, David, & Uri, 2007) even though interchangeable use of higher order skills and CT is considered an incomplete and simplified approach by other scholars (Ennis, 1985; Paul, 1990).

CT is defined differently within the domains of cognitive psychology, philosophy, and education (Lai,

2011). The common thread among the three fields is the use of higher order thinking skills (Critical Thinking Community (CTC), 2015; Ennis, 1995; Willingham, 2007). Cognitive psychology focuses on recognizing the intricacies behind an issue, looking for evidence, basing one's beliefs on facts and evidence, and being open to ideas different from one's own beliefs (Willingham, 2007). Those in philosophy use the cognitive psychological definition while including elements or reflective thinking and reasoning in what one does (CTC, 2015; Ennis, 1995).

In the education domain, the Association of American Colleges and Universities (AACU) defined CT as "a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion" (AACU, 2010). This definition was then operationalized through development of a CT rubric included in the VALUE (Valid Assessment of Learning in Undergraduate Education) rubrics. Both of these products, the CT definition and its rubric, were the results of a collaborative effort of a group of faculty experts from universities across the United States who, at the request of AACU, reviewed existing CT materials, consulted other faculty, and examined existing assessment rubrics for CT (AACU, 2010). AACU developed five phases of learners' critical thinking with corresponding indicators for achieving the VALUE "milestones." Following is a paraphrased list of AACU's five phases of CT and their corresponding milestones as expected of learners in each phase (AACU, 2010):

1. **Explanation of issues.** Learners describe comprehensively the issues to be considered critically by delivering all relevant information necessary for full understanding.
2. **Evidence:** Learners systematically analyze assumptions and carefully examine the relevance of context.
3. **Influence of context and assumptions:** Through questioning the experts' viewpoints, learners evaluate and use information from a variety of sources to conduct an analysis or synthesis.
4. **Student's position:** Learners consider the complexities of issues when describing their perspective, acknowledge their own limitations, and include others' perspectives into their hypothesis.
5. **Conclusions and related outcomes:** Learners state the logical conclusions, consequences, and implications to reflect their informed use of prioritized evidence.

Given the complexity of defining and operationalizing critical thinking, integrating instructional strategies in a course or a curriculum aimed at promoting the relevant cognitive processes presents a pedagogical challenge. In instructional systems, the challenge represents itself as selecting one overall approach to designing a course with relevant learning content and instructional strategies focused on advancing critical thinking. Ennis (1989) offers four options as overall approaches to developing a course with CT in mind. In what he calls a general approach to instruction, Ennis recommends designing a course specifically devoted to teaching of and training in CT skills. In his *immersion* and *infusion* approaches, the CT skills are integrated in course content, implicitly or explicitly respective to the approaches. Ennis' mixed approach combines the general approach with elements of either immersion or infusion. In a meta-analysis of application of these approaches conducted by Abrami et al., (2008), they found the mixed approach to be most effective in teaching CT skills and the immersion approach as the least successful.

This paper presents an application of Ennis' immersion and infusion approaches combined to a graduate course on evaluation of training programs. The course is offered every other semester as a required course for Master's level students preparing to work in the business and industry as practitioners of instructional design, development, and evaluation. Doctoral students sign up for the course as an elective for research and application experience. Both groups may use the course to fulfill the requirement of earning a certificate in Human Performance Technology. The number of students enrolling varies between 9 to 15, depending on the students' schedules and priorities. The course content and instructional strategies offer the theoretical foundation of evaluation with great emphasis on the practical application of investigation methods in an authentic environment. Thus, it provides a platform for learners' transition from learning abstract evaluation topics to practical use of evaluation methods. Due to these features, we found the course to be a good fit for a CT-based design of instruction.

Using immersion and infusion as means of applying CT, the instructor used two complex but relevant frameworks—systems thinking and human performance technology—to scaffold students' processing of CT skills. We integrated various ideas and tools from these perspectives into our design and asked students to explicitly demonstrate their use of these tools in their assignments and presentations aimed at promoting CT. In the following section, we present a brief description of the two scaffolding frameworks before discussing the details of their application.

Macro Design Strategies for Immersion and for Scaffolding Learners' CT

The conventional way of teaching an introductory course such as ours usually focuses on teaching "what" an evaluation is and "how" to do it. It leaves out the learners' challenging task of addressing the "why" elements of the process that require learners' causal reasoning, exploration, and the search for evidence in support of their judgment and decision making: all parts of CT. Realizing the challenge of provoking and facilitating these cognitive processes, we chose to apply two relevant macro design strategies to "enable" learners to go beyond the declarative and procedural knowledge toward a purposeful creation process. To accomplish this, in the first few weeks of the course students were introduced to Systems Thinking (Ackoff, 1999; Ghrajedaghi, 1999) and HPT (Stolovitch & Keeps, 1999), both of which provided a complex cognitive framework that, when applied, demanded learners' high level thinking. These perspectives were fundamentally relevant to the course objectives and were aimed at contextualizing other instructional strategies we used. Both strategies, because of their application complexities and intricacies, demanded extensive amount of mental effort required for developing critical thinking skills. Specifically, the application of systems thinking enabled learners' development of analytical skills in order to understand the training program's systemic properties, to comprehensively identify and describe the training components, and to analyze the relevant training information required for appreciation of the program's functions and features.

Application of HPT principals, on the other hand, complemented the systems thinking scaffold in enabling students in their evaluation activities, requiring higher level CT skills such as synthesizing and evaluating their analytical accomplishments. From this perspective, a training program is identified as an organization with three major functions: 1) improving trainees' knowledge, 2) improving their job performance, and 3) contributing to the sponsoring organization's performance as a whole. Focusing on these functions, learners' analysis included examining the program's components contributing to the success of these functions and deciding whether there is a need for modification of those components based on the resulting evidences.

Infusion Strategies

To complement using the immersion scaffolds aimed at soliciting CT, we "infused" a series of sequenced CT-oriented instructional strategies and learners' activities that gradually and incrementally led to production of the course's capstone project. The class activities and assignments were sequenced so that students used the immersion scaffolds to describe the training program in systems terms and progress through the spectrum of critical thinking by identifying, analyzing, applying, and synthesizing information to be used in creating a proposal. The authenticated instructional activities dealt with a real world training program and corresponded to theoretical and practical features recommended by the literature.

For the purpose of this paper, we have structured our discussion of the immersion and infusion application strategies to highlight the relevant instructional activities relevant to the AACU's listed milestones for each phase of CT.

Contributions of Immersion and Infusion Strategies

Phase 1. Explanation of issues. The CT milestone of this phase expects the learners display their abilities in explaining the issues under study. The training program that our students selected at the outset of the course provided a platform for conducting these activities that CTC calls an "…intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information …generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (CTC, 2015, p. 1). The application activities were designed for learners to explore and explain the functions and features of a real world training programs, such as instructional content, training strategies, mode of delivery, and training environment. The activities were preparatory to the foundation of students' "purposeful, self-regulatory judgment" (Facione, 1990) to be used in their decisions in designing the evaluation.

This milestone was achieved when students documented their application of systems thinking perspectives and contextualized the training program in a HPT context (see Figure 1). The students' cognitive efforts for this application and justification of it were demonstrated in an essay presented in class and submitted to the instructor. In this essay, they described how they compared their assigned training program to a performance organization as depicted in Figure 1. In this organizational system, they identified trainers as the workforce that produces a particular product: in this case, more knowledgeable trainees with improved skills. Students explained how the production occurs within a certain organizational structure following particular processes that are specifically designed for the training purpose. Students also explained how the program management and staff, as parts of the program environment, and also the sponsoring organization observe the transfer of training to the job environment

Figure 1
Training as a system. A systemic view of a training program, identifying key components.
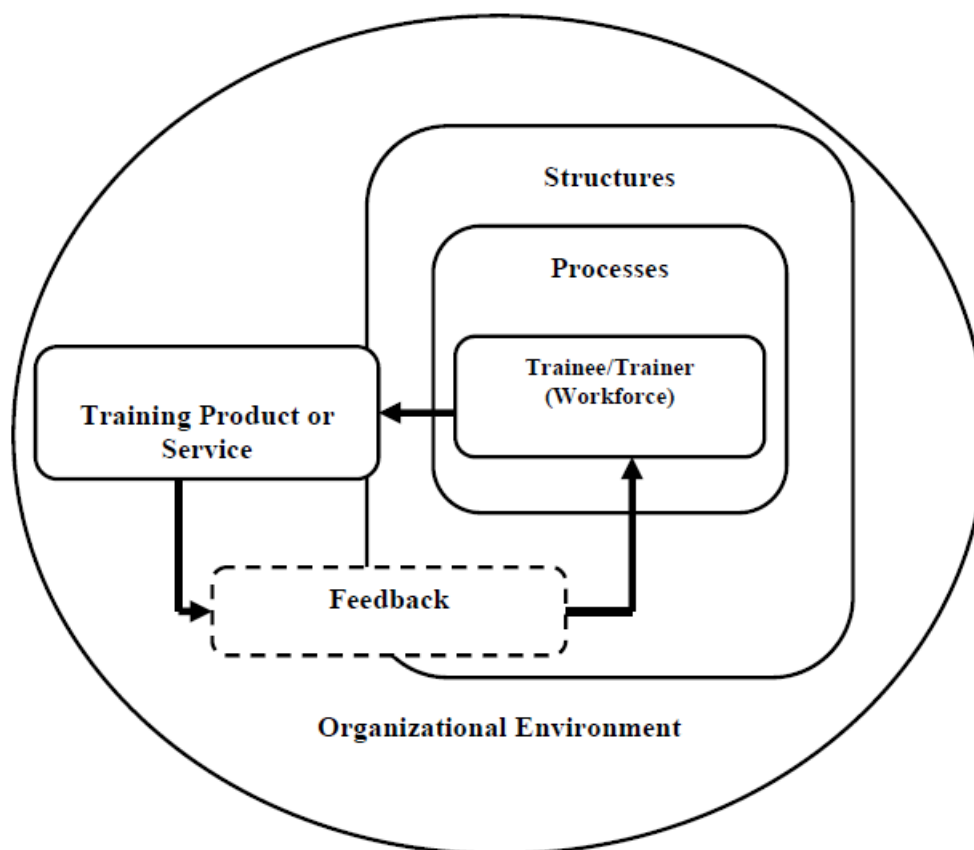
and provide the feedback about the product. This essay is basically a description of Figure 1 as it is applied to the student's selected program.

Phase 2. Evidencing one's point of view. Having explained the features of their authentic training case, the learners identified and selected information for their "evidential, conceptual, methodological … or contextual considerations" (Facione, 1990, p. 3). To accomplish this, the students used the observation and documentation tools integrated into the course for conceptual "deconstruction" of the training system and documentation of the components' functions. They received instruction on using an adaptation of the "Holistic Process of Inquiry," a systemic analysis technique developed by Gharajedaghi (1999). Labeled as the "iterative analysis of training systems," students used this tool to examine the training system as depicted in Figure 2. They followed this "iterative analysis" procedure to evidence their understanding of the selected training programs and map the interaction of its components. Moreover, this instructional strategy also documented the functions of the training according to the HPT principles which consider the training's main functions to be 1)

improving trainees' knowledge and skills; 2) improving trainees' job performance; and finally 3) improving organizational performance (Pershing, 2006).

We figured that by the end of this analytical process students will have gained a deep understanding of their selected programs and its operation. Students' conducted observation, collected information, and raised challenging questions in their attempt to refine and integrate their findings according to their holistic perspectives.

The achievement of the Phase 2 milestone was demonstrated in a class paper they submitted to the instructor. In this paper, students' evidenced their point of view in describing their iterative analysis (see Figure 2) and documented how they reconstructed the system according to their views. They described how they examined the information about the training program, reflected of the program's functions and features, and rationalized how they agreed or disagreed with the existing operation of the system.

Phase 3. Influence of context and assumptions. Using the iterative analysis in the previous phase allowed the learners to "decompose" the training

Figure 2
Iterative analysis of training system. A tool which guides the analysis of a training program according to its functions and helps identify the connections between certain program components.
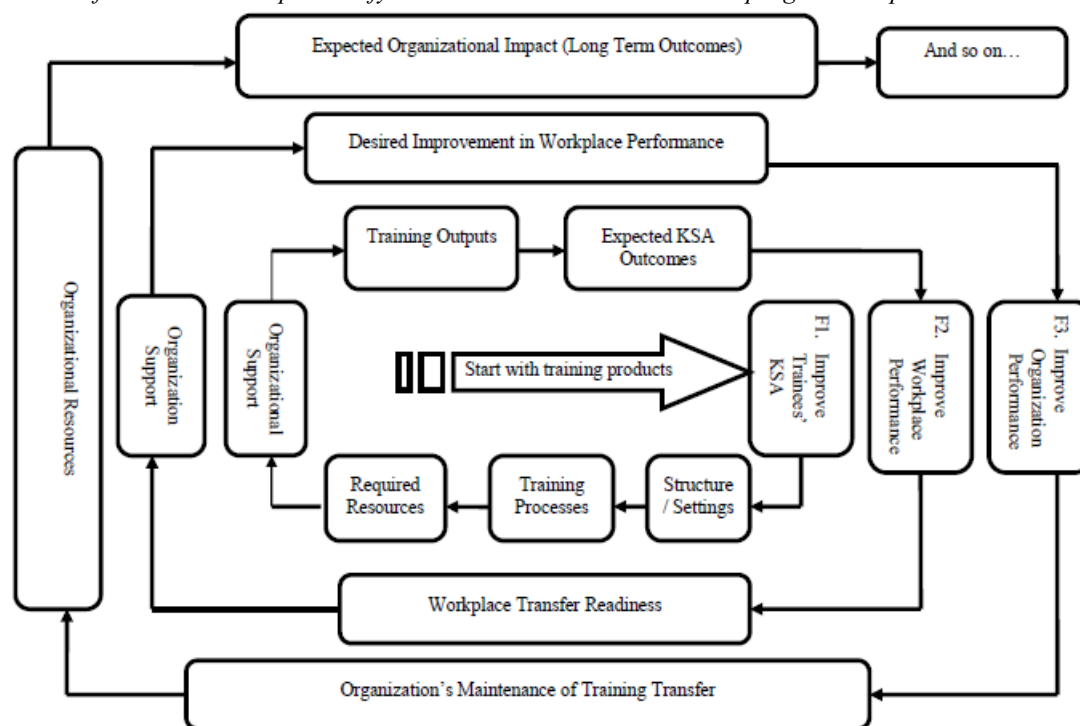
system and identify how the components are affected by their environments. They also identified and examined the assumptions based on which the training components are designed and operate. In this phase the learners integrated the results of their analysis as observation documentations into what the evaluation literature calls a "logic model."

Developing a logic model or a "logic map" has been recommended for helping evaluators define "…measurable objectives, a logic or rationale for reaching the program's goals, and a sequence of activities that present the program's logic or rationale" (Russ-Eft & Preskill, 2001, p. 90). Holden and Zimmerman (2009) describe it as a detailed description of the program activities, inputs, outputs, objectives, and resources. In our case, the difference is that the students develop this model from a systemic perspective, connecting the training inputs to the training process and concluding with the outputs and outcomes of the program as a result.

Creating this logic model specific to each program achieves the Phase 3 milestones in the sense that it requires the students' identification of the program's operation in the organizational context that influences every part of the program. Learners' creation of an

evaluation logic model (see Figure 3) not only evidenced their reflective thinking on the operation of the system, but also demonstrated how they influenced the context of the program and questioned the assumptions based on which the program is operating. The result was integration of their own ideas into the development of the model which was reported to their peers in class in form of a presentation. The logic model is presented as the learners' evidence that in fact the target training program is a system with all the systemic features such as input, process, output, and outcome.

Phase 4. Students taking a position. To accomplish this milestone, learners were instructed to consider the complexities of the evaluation object and the concerns of the stakeholders in developing their evaluation questions. The questions reflected the learners' hypotheses on how well the training system was functioning by focusing on the system's inputs (e.g., instructional content, trainers' qualifications, trainees' competencies), its training process and outputs (e.g., number of sessions, types of classes, implementation of its instructional plans and delivery method), and finally the short term and long-term outcomes of the program. In their formulation and presentation of the evaluation questions, students stated

Figure 3
HPT-based Systemic Logic Model for Evaluation of Training Program. This tool breaks down the training program based on its inputs, processes, outputs, and outcomes. Students use this template to develop program specific models.

Training System's Components

	Functional structure of training program: Resources, physical location, facilities, management structure, authorities, responsibilities, etc…	Structure & Set up
	Instructional features of the training content and its relevance to the purpose of the training and the trainees' needs	Instructional Content
	Trainers' qualifications (KSA) required for conducting the training and teaching its content to enable trainees to achieve training objectives.	Trainers' Competenc
	Trainees' prerequisite competencies (prior K, skills, motivation & incentives) for participating and achieving the training objectives	Trainees' Competency
	Support of sponsoring organization: commitment, allocated resources, transfer & maintenance strategies & capabilities, and expected payoff	Supporting Environment for desired changes

Training Process — Procedures & policies aimed at implementation & monitoring of training Activities

Training Inputs

Feedback

Training Outputs & Outcomes to be Measured & Reported

Training Outputs and Outcomes

Expected Outputs →
Training Activities: Classes, workshops, simulations, seminars, webcast, tabletop exercises, on the job demonstrations

Expected Outcomes →
Short-term & long-term outcomes Improvement in workforce KSA, behavioral changes, improvement performance on the job, organizational improvement

Desired Changes

| Improved Workforce KSA | Improved Performance (Transfer) | Improved Organizational Performance (Result) |

their positions and the rationale for asking the questions. Students also articulated how they synthesized their observations to support their questions.

Following a class lecture on formative and summative evaluation, students contemplated and formulated relevant evaluation questions (EQs) using the "divergent" and "convergent" approach (Worthen, Sanders, & Fitzpatrick, 1997). Corresponding to the

contribution of the training components, the EQs focused on the formative attributes of the program (e.g. settings, content, trainers, and resources) or its short-term and long-term outputs and outcomes.

To indicate their achievement of the Phase 4 milestone, students integrated their selected questions into an Evaluation Management Plan (EMP; See Figure 4). In this plan, they included   qualitative and

Figure 4

Evaluation Management Plan (EMP). A tool used to guide the development of students' evaluation proposal, which relates the questions directly to the data methods and sources used.

Program Areas of focus	Relevant Training Components	EQs (Issues to be examined and addressed)	Type of Information to Collect Qual./Quant./ Mixed	Information Source	Collection Method
Formative (Process)	Training Setup	1			
		2			
		...			
	Training Process/ Procedures	1			
		2			
		...			
	Training Content	1			
		2			
		...			
	Trainers' qualification	1			
		2			
		...			
	Trainees' Readiness	1			
		2			
		...			
	Organization Support Resources/ funding	1			
		2			
		...			
Summative (Outcome)	Short Term: Individual Learning (KSA)	1			
		2			
		...			
	Long Term: Performance Impact (on the job /Organizational	1			
		2			
		...			

quantitative data collection technique depending on the type of EQs and identified the sources of information, data collection method, and data analysis plan required for addressing those questions. In describing EMP, rationalizing raising these questions, and developing the methodology for addressing them, students basically hypothesize their research. Students justified their position on their proposed methodology when they presented their research method to the class and rationalized why they have taken their specific approach. In a critique session, instructor and student peers discussed and challenged the students' position on the methodology and provided feedback accordingly. Through this exercise, students realized that, due to the realities of the target program and their use of mixed method research, their research approach and use of research methods and tools were unique to their particular cases. Thus their results were not generalizable to other cases, and certainly they recognized the limitations of conducting an authentic investigation.

Phase 5. Conclusions and related outcomes. The aforementioned activities resulted in the creation of the components of an evaluation proposal, and these were synthesized into the final course product. Through class presentations of these components (program

description, program analysis, and evaluation methodology) students received peer feedback, as well as learning about peers' work on the same ideas. These experiences, in addition to the instructor's feedback on a more detailed print version of the assignments, provided an opportunity for student to reflect on and evaluate their work. Following their revisions of the products according to the given comments and feedback, they individually attended a final review session with the instructor to prepare an evaluation proposal as their final class project.

To create this proposal as an indicator of achieving Phase 5 milestones, students followed a proposal outline to seamlessly integrate their previously produced products into one document. They started with their description and analysis of their selected programs, the only fact-based portions of the proposal. They incorporated their proposed program-specific logic model, EQs, and EMP followed by proposed research methodology for addressing the EQs. Students also included a communication plan in which they described the type of reports they would use and the stakeholders they would target to share the evaluation results. Together all of these components formed a logical and evidence-based conclusion to student

activities and resulted in an evaluation document for their specific programs.

Summary and Discussion

In support of these pedagogical activities aimed at immersing students into a CT or higher order thinking processes, we would like to summarize our discussion by reiterating how Scriven and Paul (1987) reference CT as "…the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (CTC, 2015, p. 1). We contend that the course's instructional content and strategies, designed according to the CT skills, promote these concepts and prepare graduate students for performing a complex task like program evaluation in their professional careers.

The instructional strategies and activities used in this course elicited students' purposeful effort to achieve what Dewey (1910) presents as reflective thinking, or to investigate the issues and look for new evidence to support or counter the claim. The students' accomplishments throughout the course, we believe, induced them to go through the cognitive processes for knowledge gain, comprehension, application, analysis, evaluation, and synthesis as listed in Bloom's taxonomy. The capstone of these achievements was the production of an evaluation proposal which in particular included the higher level thinking activities. We suggest that any duplication of our effort in other courses should include consideration of the need for strong instructional scaffolds that force students into reflective critical thinking while providing an incremental sequence of activities and assignments for demonstration of those efforts.

Learners' achievements, as presented under the phases of the AACU (2010) VALUE rubric for critical thinking, demonstrate their practical journey through the stages that Elder and Paul (1996a) proposed. Even though our graduate learners should not be considered unreflective or beginners in terms of thinking, as Elder and Paul put it, they certainly faced cognitive challenges in the application of our strategies and their production of class projects. As the sequence of the assignments kept building up the cognitive demands, students kept practicing thinking and advanced their thinking skills until they mastered the process as reflected in their accomplishments of the milestones and course projects.

However, we strongly recommend that the integration of strategies aimed at promoting CT must originate from a more complex scaffold that is relevant to the content and conducive to producing the results.

In our case the course required an analysis of the training program which we chose to contextualize in systems thinking, and then we designed few procedures accordingly. This eliminated the possibility of learners providing a simple description of the program and a linear observation of its functions. So did the application of HPT principles, which contextualized the training program as a performance improvement intervention. Both of these strategies and applications were completely relevant to the course, and students' prior knowledge gained from foundational courses contributed to their understanding and facilitated their progress through the cognitive stages.

Given this discussion, we speculate that replication of our efforts in graduate courses may not apply to all graduate courses. However, we make these recommendations:

- Identify a course that demands learners' complex cognitive effort in solving a problem and/or producing a tangible product.
- Make sure that the abstract instructional contents have a practical application in the field, and find a platform for their application.
- Identify relevant scaffolds that induce learners into thinking critically in producing a complex course project.
- Design incremental class projects that collectively lead to the production of the final course project, the capstone.
- Sequence the designed class activities from easy to difficult to enable students to acquire knowledge for going through the process
- Integrate the activities described under the AACU milestones into the sequence of activities while designing the infusion approach.
- Infuse activities such as class presentations, short papers, critiquing sessions, and feedback sessions so that learners get challenged by their peers and defend their position on the issues they discuss.
- Follow a theoretical framework such as the ones suggested by Bloom's taxonomy and Elder and Paul's (1996b) CT stage theory to sequence the instructional materials and course activities.

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Developing a Learner-Centered Curriculum for a Rural Public Health Program

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Rural communities, compared with their urban counterparts, have higher rates of disease and adverse health conditions, fueling disparities in health outcomes. This encourages the need for effective curricula to engage students and enable them to address such disparate health outcomes as imminent health professionals. Incorporating learner-centered teaching strategies, such as collaboration and power-sharing, into public health (PH) courses can enhance student learning and help faculty enable future health professionals to address needs of rural, underserved populations. Successfully engaging students to explore issues related to rural health disparities in their education, research, and training can thereby advance PH practice. This paper describes the collaborative efforts of five PH faculty, an instructional designer, and administrators to develop a learner-centered curriculum for a newly launched PH program in a rural Midwestern United States (US) university.

Learner-Centered Teaching

As the pedagogy of academic instruction evolves, learner-centered teaching has become a forerunner in promoting positive academic and professional outcomes in students. The long established first principle of the enterprise of education is that "learning takes place inside the learner and only inside the learner" (Simon, 2001). Therefore, all we can do as teachers is to help the learner to learn (Michael & Modell, 2003). The notion of the learning-centered paradigm in higher education was notably described by Robert Barr and John Tagg in their foundational article "From Teaching to Learning: A New Paradigm for Undergraduate Education" (Barr & Tagg, 1995). Since then learner-centered teaching has been advanced by the work of individuals such as Phyllis Blumberg (Blumberg, 2008), Maryellen Weimer (Weimer, 2013), and Parker Palmer (Palmer, 1998). Learner-centered teaching, or the learning paradigm, posits that faculty members should focus their efforts, not on what they teach, but on what students learn. Common features of courses that displeased students included a lack of perceived relevance and passive student roles (Tobias, 1990). A learner-centered approach will help to combat some of these common issues. Barr and Tagg note that the mission of higher education is not instruction, "…but rather that of producing *learning* with every student by *whatever* means work best" (Barr & Tagg, 1995, p. 13). In this paradigm, it is not the faculty member's job to "cover" material, but rather, faculty should endeavor to help students "uncover" knowledge and skills (e.g., Felder & Brent, 1999; Weimer, 2013) and to relate those skills to their future professional and even personal goals.

Weimer (2013) describes five ways in which learner-centered teaching departs from the traditional instructional paradigm. First, in learner-centered teaching, the students are the ones who must do the work, the thinking, and the problem-solving in class.

Second, faculty must demonstrate to students *how* to do this work. They must help students develop learning skills, not just content knowledge. Third, students must reflect not only on what they are learning, but also on how they are learning it (i.e., their experience of learning). Faculty should help students move beyond focusing on grades so they can begin monitoring and assessing their own progress. Fourth, in a learner-centered classroom, faculty share power (to at least some degree) with students, thereby giving students some choice and control in the learning experience. Finally, learner-centered classrooms foster community and collaboration among students and encourage students to take responsibility for their own learning (Weimer, 2013).

Learner-centered teaching often includes active learning, but it goes beyond active learning, as evidenced by Weimer's attention to sharing power and to the importance of promoting metacognition. In the learner-centered classroom, the learner is an empowered, active agent in her own learning (Weimer, 2013). She has the ability to make decisions and influence aspects of her learning, such as topics, means of demonstrating her knowledge or skills, deadlines, and/or class policies. Additionally, both students and faculty in learner-centered classrooms recognize the importance of metacognition. Svinicki (2004) defines metacognition as "…the process of marshalling a learner's cognitive resources in service of learning" (p. 128). Metacognition entails reflecting on the inputs, processes, strategies, preferences, goals, and products of one's own thinking and learning. When faculty integrate activities that promote metacognition, such as goal-setting, reflective writing, and self-assessments, students have the opportunity to increase their self-efficacy and to be more invested in their learning experiences. In short, attending to metacognition fosters deeper learning and greater academic achievement (Svinicki, 2004; Young & Fry, 2008).

The aforementioned learner-centered principles informed various faculty development and engagement opportunities to be discussed in this paper. Not only

did the faculty study about learner-centered teaching as a content item, but they also experienced learner-centered teaching as learners themselves. Such approaches afforded faculty various opportunities [e.g., online teaching and learning training, immersion workshops, New Faculty Orientation Week (NFOW), and New Faculty Transition Program (NFTP) workshops] to experience learner-centered teaching as content and lived experience, in order to enhance their teaching and student learning. A common assertion by faculty members is that "we teach the way we were taught" (Adamson et al., 2003; Michael, 2007). The workshops and immersion should prove to help faculty effectively use a more learner-centered approach.

Learner-Centered Teaching in a Rural-Focused BSPH Program

Our institution's Bachelor of Science in Public Health (BSPH) program began in 2014 with the addition of five new faculty members from various public health backgrounds. These faculty members were charged with developing the BSPH courses as well as the overall objectives of the program. Working in partnership with the university's Faculty Center for Teaching and Learning (FCTL), these faculty members engaged in internal and external learning opportunities to enhance teaching, promote student learning, monitor the direction of the PH program, and facilitate the development of program outcomes with a learner-centered teaching focus.

This new BSPH program has a special focus on preparing students to work in underserved rural areas. This focus stems in no small part from the institution's location in a relatively rural region. Rural locations often face a mix of unique challenges and public health issues (Davis et al., 2015; Zeng et al., 2015). Compared with their urban counterparts, common issues among inhabitants of rural communities include higher rates of preventable conditions such as obesity, cancer, diabetes and injury, as well as higher rates of related risky health behaviors such as smoking, physical inactivity, poor diet, and limited use of seatbelts (Eberhardt & Pamuk, 2005; Hartley, 2004). Using the example of obesity in adults, this condition is more prevalent in rural areas than in urban ones (Barnridge et al., 2013; Befort, Nazir, & Perri, 2012). In developing policies and strategies to combat obesity in rural areas, it can be important to develop "broad-based partnerships" with community members, agencies, and organizations (Barnridge et al., 2013). Given that cultural differences and priorities can pose a barrier to successful policy implementation (Barnridge et al., 2013), broad partnerships can help public health professionals identify and understand cultural perspectives and work within existing community structures and beliefs to create feasible mechanisms for change.

As another example, compared to residents of urban regions, individuals who live in rural areas are more likely to avoid seeking health care, even when they believe they might benefit from pursuing care. This may be due, in part, to lack of access to health care providers, lack of self-confidence and self-efficacy, and limited trust in the medical system (Spleen, Lengerich, Camacho, & Vanderpool, 2014). Public health professionals who work in rural regions should be aware of, and understand, such avoidant behaviors and be able to devise strategies to counter them.

As new PH faculty, we hypothesized that students who experience a learner-centered education will be better-equipped to deal with the challenges and needs in rural areas as public health professionals. Learner-centered teaching is likely to benefit all PH students, regardless of where they find employment in the field. However, an examination of the principles of learner-centered teaching reveals how this pedagogical approach has important implications for future rural public health workers., For instance, if students are empowered in the classroom and are able to shape their own learning experiences (as described in Weimer, 2013), not only may they be more likely to attain required learning outcomes, they may also be more likely to recognize the value and benefits of sharing power. In turn, once they enter the field as public health professionals, they may be better prepared to share power with local stakeholders. Additionally, a learner-centered education enables students to grow accustomed to collaboration during their educational experiences (Weimer, 2013). From this, students can learn the benefits of collaboration and practice using strategies to deal with challenges that can arise during teamwork. This experience may enable students to be proactive about building collaborative efforts and developing partnerships once they enter the field. Further, as noted above, such partnerships are especially vital in rural contexts (Barnridge et al., 2013). Finally, a learner-centered approach to teaching challenges students to take an active and reflective role in their own education (Weimer, 2013). This challenge may make students more aware of, and empathetic to, the challenges of engaging rural residents as active participants in their own health care. Moreover, when students engage in the difficult, "messy" tasks of problem-solving and critical thinking in the classroom, and when they are empowered to be agents in their own learning, they are apt to be better able to problem-solve in the field and to contribute to the advancement of health care equity in rural areas.

Successful faculty development is seen as an intentional, ongoing, and systematic process (Guskey, 2000). This process prepared the new PH faculty to use a learner-centered approach to teaching, and faculty were also encouraged to be transparent with students

about how a learner-centered academic experience could better position them to serve as rural public health practitioners. It is also worth noting that this institution lists "opportunity" as one of its core values. Included in this notion of opportunity is the belief that faculty must be committed to their own lifelong learning and professional growth in order to effectively advance student learning, and valuing opportunity for students requires providing students with a relevant education, one that offers appropriate career preparation. A significant goal of intentionally developing a learner-centered program was to create opportunities for students to succeed in the classroom and to give them skills and frameworks that would translate to their professional lives. By pursuing their own professional development, the new BSPH faculty demonstrated commitment to these institutional values and, in turn, to creating impactful learning experiences for students.

In this paper, we will describe the methods used for the development of the PH faculty and program. These methods include external learning opportunities, such as the Certificate for Online Adjunct Teaching (COAT) program (MarylandOnline, 2014), as well as internal opportunities, such as the university's New Faculty Transition Program (NFTP). Additionally, we will detail teaching products and strategies that resulted from these intensive learning opportunities. These include the development of a curriculum map, use of enhanced syllabi, application of learning theory to the development of PowerPoint slides, and the incorporation of feedback-seeking activities (e.g., Small Group Instructional Diagnoses) into the student learning experience. Finally, we will discuss perspectives of how professional development opportunities affected teaching and students' learning experiences.

Method

Five new faculty participated in a variety of learning, skills building, assessment, and professional development activities from Summer 2014 through Fall 2015 to develop learner-centered courses for a newly launched PH program at a rurally located Midwestern university. These endeavors culminated in course design, implementation, and assessment activities documented for the 2014-2015 period. Data were also collected from the 2014-2015 cohort of Bachelor of Science in Public Health (BSPH) students (N=15). A flowchart illustrates this timeline of activities (Figure 1).

Acclimation

Before coming to campus, the new PH faculty completed an 8-week COAT course designed to provide online professional development for educators and exploration of online teaching and learning

principles and competencies (MarylandOnline, 2014). Upon arrival on campus, the PH faculty participated in an Immersion Week in August 2014. Over five days, faculty familiarized themselves with the campus and infrastructure of the department, as well as engaged in collaboration to clarify the vision, mission, and competencies of BSPH & Master of Public Health (MPH) programs. Activities included planning and organizing course development, mapping program curricula, determining program assessment measures, and implementing instructional design. This intensive workshop encouraged faculty to develop program outcomes with a learner-centered teaching focus. Throughout this workshop, faculty reflected on the direction of the Public Health program, as well as foundational beliefs that would be essential for the developing courses. Activities were documented in meeting minutes, notes, charts, maps and flowcharts. Previous studies have shown that these types of multiple day workshops result in significant changes in faculty attitude, knowledge, classroom instructional behavior, and interactions with students (Herr, 1988).

Following Immersion Week, PH faculty participated in New Faculty Orientation Week (NFOW) as part of the University's commitment to intentionally assist faculty in making a smooth and positive transition to their new workplace and to successfully advance students' development and learning. NFOW goals included enabling faculty to cultivate stimulating, student-centered, and inclusive learning environments, as well as supporting and enhancing faculty engagement in the University community. NFOW activities included conversations with senior University administrators and department colleagues, as well as sessions on "Elements of a Learner-Centered Syllabus," "Connecting Student Learning Outcomes," "Assessment" and "Lesson Planning,"

Course Design, Professional Development, and Assessment

During Fall 2014-Spring 2015, faculty attended New Faculty Transition Program (NFTP) workshops sponsored by the Faculty Center for Teaching and Learning (FCTL). NFTP objectives included gaining teaching skills and knowledge, establishing supportive networks of colleagues, and identifying relevant university resources. Workshop topics included, "Active Learning," "Socratic Questioning," "Creating Inclusive Classrooms," and "Using Writing to Learn." With NFTP assistance, faculty conducted and reflected on Small-Group Instructional Diagnoses (SGIDs), facilitator-led mid-semester formative assessments of students' learning experiences. As part of the NFTP, faculty engaged in a workshop specifically on the topic of learner-centered teaching. They also had the

opportunity to attend NFTP sessions designed to help them reflect on key ideas in teaching and learning and to collaborate with colleagues on ways to implement these ideas in their classes. Additionally, the NFTP coordinator invited faculty to give input into session topics and used this input to develop program plans and decisions. The goal of this dual-channel approach—situating learner-centered teaching as content and as lived experience—was to enhance faculty members' ability to develop a learner-centered curriculum and to use learner-centered strategies with their own students. FCTL staff provided support to PH faculty in administering, summarizing, and disseminating results of SGIDs. Minutes from NFTP workshops were compiled and summarized.

Monthly BSPH and MPH meetings were also held to conduct the ongoing development of, and to monitor, the progress of program mission, goals, objectives and activities. During these meetings, faculty evaluated efforts to achieve the vision, mission, and competencies of BSPH & MPH programs; provided updates on course development and mapping of program curricula; and shared progress on program assessment measures and instructional design. Minutes from program meetings were compiled and summarized.

Faculty attended professional development workshops during Fall 2014-Fall 2015 (e.g., "Presentation Zen" (Reynolds, 2007), "Clickers," "Deprivileging the Classroom"), designed to develop and enhance teaching methods with the goal of increasing greater motivation for learning and promoting greater satisfaction with school among students. Upon completion, faculty were eligible to receive Professional Development Incentives (PDI) to purchase resources or pursue conference travel that would enhance their teaching and their students' learning. To assess performance, faculty also requested students to complete online IDEA evaluations, which are student ratings of various elements of the instructor and the course (IDEA, 2017). IDEA evaluations were compiled and reviewed at the end of each semester. Faculty were advised to actively encourage students to complete evaluation forms in efforts to attain higher response rates.

Results

The PH faculty attended the COAT course prior to beginning their teaching appointments in Fall 2014 (Figure 1). This 8-week course exposed new faculty to various teaching methods (e.g., use of discussion boards, group work, use of videos to introduce new topics, combining narrated lectures with written transcripts to enhance clarity, etc.) in order to facilitate a learner-centered environment in an online platform (MarylandOnline, 2014). As faculty were expected to teach both face-to-face and online courses, many of the learner-centered techniques acquired in the course were transferrable to face-to-face courses as well.

After completing the COAT course and before starting the Fall 2014 semester, the faculty participated in Immersion Week. During this week, faculty shared their thoughts regarding how they each envisioned the mission, vision, and potential program learning outcomes. Faculty then collaborated with an instructional designer to develop the initial curriculum map for the program. During the 2014-2015 year, the program learning outcomes (Table 1) and curriculum map (Table 2) were solidified. Faculty aimed to develop learner-centered and well-rounded program learning outcomes that focused on both discipline-specific content (i.e., population health; public health domains) as well as professional skills necessary for a career in public health (i.e., application of evidence, critical thinking skills and problem-solving skills; communication skills; and leadership skills). Further, while developing their respective courses, faculty were able to align their course learning outcomes with program learning outcomes to the curriculum map so that in each course multiple program learning outcomes were either introduced, reinforced, or mastered. For instance, faculty evaluated overall program and course learning outcomes along with assessment methods to determine the level at which program learning outcomes were met. It was concluded that program learning outcomes would be introduced in 200-level courses, reinforced in all 300-level and some 400-level courses, and mastered by completion of the internship and capstone project.

All faculty also attended NFTP workshops through 2014-2015 and were able to learn new teaching methods, such as Socratic Method questioning, writing as a learning exercise, and academic service learning. Many of the faculty incorporated Socratic questioning into their courses as a means of promoting critical thinking and active learning, thereby enabling students to help shape their own learning and further prepare students for their professional careers. Additionally, some faculty implemented low-risk (ungraded) writing activities in their classes to facilitate candid reflection on course material by students. Other methods used to improve student learning included the use of guest lectures, the provision of choice in course assignments, and the frequent use of group work in order to help build interpersonal and leadership skills among students.

For example, in one foundational PH course, health educators from the local health department visited to discuss ongoing PH activities in the surrounding rural community and potential opportunities for future PH professionals. Another PH course featured guest lectures from culturally diverse PH professionals who

Table 1
Program Learning Outcomes for Bachelor of Science in Public Health (BSPH) Program, 2014-2015

1. Integrate the basic concepts of **population health** as well as the basic processes, approaches, and interventions that identify and address the salient health-related needs and concerns of populations.

2. Analyze the interrelationships between the public health **domains**: (Health Promotion and Education, Epidemiology, Biostatistics, Environmental Health and Safety, Health Administration and Policy) as a basis for entry into public health practice.

3. Apply current **evidence, critical thinking, and problem-solving** into the practice of public health.

4. Apply the basic concepts of **public health communication**, including effective interpersonal, written, and oral presentation skills, as well as use of electronic technology.

5. Demonstrate effective **leadership skills** necessary to succeed in the interdisciplinary and collaborative public health domains.

Table 2
Curriculum Map of Bachelor of Science in Public Health (BSPH) Program, 2014-2015

	Population health	Public Health domains	Evidence, critical thinking, problem-solving	Communication Skills	Leadership skills
PUBH 200: Introduction to Public Health	I[1]	I	I	I	I
PUBH 210: Global Health & Public Health	I	I	I	I	I
PUBH 300: Health Promotion & Education	R[2]	R	R	R	R
PUBH 310: Public Health Services in Rural Populations	R	R	R	R	R
PUBH 320: Nutrition & Health	R	R	R	R	R
PUBH 330: Environmental Health & Safety	R	R	R	R	R
PUBH 340:Mass Media & Technology	R	R	R	R	R
PUBH 350: Epidemiology	R	R	R	R	R
PUBH 400: Health Care Services Administration & Management	R	R	R	R	R
PUBH 410: Infection/ Communicable Disease Epidemiology	R	R	R	R	R
PUBH 420: Health Program Planning, Implementation & Evaluation	M[3]	M	R	R	M
PUBH 495: Internship & Capstone	M	M	M	M	M

[1]Introduced   [2]Reinforced   [3]Mastered

discussed the status of the health system and PH challenges in their respective countries of origin. Additionally, the course provided a comprehensive overview of the relationship between global and public health services. Students were provided the opportunity to explore cross-cultural issues, concerns, problems and

needs of different groups of people in a variety of regional settings. Students worked together in pairs to investigate a case study of a particular global health issue and were then required to take ownership of this learning by presenting their thoughts on the case study to the class. Health problems in developing and developed countries of the world were examined as a foundation for understanding of how other cultures can contribute to the solution of societal problems. This allowed students to recognize and understand how they, individually and collectively as informed citizens, can understand the issues of health and the impact of illnesses on their own lives and regions. To contextualize this learning experience, students engaged in the "Know Your LHD (Local Health Department)" assignment. This assignment required students to identify their local health department. Using course content, students identified socioeconomic elements of health specific to their region. Students also used the burden of disease metrics to describe the health status of their region. The diverse and unique mix of regions reflected by the participating students allowed the opportunity to understand and identify health problems of rural, urban, metropolitan, and suburban regions. The rural focus of this activity enabled students to understand that public health is a balance of upstream advocacy and downstream prevention for improved population health locally and globally.

In another foundational PH class, students were required to develop a proposal for a nutritionally based public health program reasonable for a small rural town similar to the university's location. During this group project, students discussed the typical nutritionally based problems that are experienced in rural areas, selected one to highlight, and proposed a community based program or other type of solution to combat this problem. Components of each groups' choice of a nutritionally based public health problem in a rural area included a background of the problem in rural areas, a literature review of other possible programs that have been used in similar populations, and the importance of the chosen topic. Components of the solution included developing all of the details of the program, identifying the target population, determining how the program would be evaluated to determine success or failure, projecting the cost of the program, and listing the advantages and limitations.

Similarly, in another foundational PH class, students were required to work in groups for various assignments throughout the semester, then specifically for a final group presentation project that required groups to choose a contemporary PH issue and then tackle the issue using the perspectives of the four PH domains, with each group member representing a domain; this project promoted active learning by helping students individually apply the perspective of at

least one PH domain and collectively learn how the domains of PH work together in an interdisciplinary manner to address PH issues in the real world. Along the lines of exposing students to real world applications of PH, students in this same PH course were also required to interview a PH professional of their choice for the final paper in order to reflect on what a career in PH may entail in terms of training, responsibilities, strengths, and challenges.

In 2014-2015, in order to obtain anonymous feedback from students regarding their teaching and students' learning, most faculty participated in the Small-Group Instructional Diagnoses (SGID) process in at least one class, and all faculty received IDEA course evaluations each semester. Research indicates that faculty members are receptive towards the use of instructional consultation on a personal basis, as is conducted in the SGID process (Murray, 1985; Weimer & Lenze, 1994). Learner-centered themes that emerged from the SGID and IDEA feedback included timely and constructive feedback on assignments, respectful and non-patronizing explanation of course concepts and learning outcomes, effective and timely communication with students, timely availability of learning resources, the use of a variety of teaching and assessment methods to promote active learning and critical thinking, organization of course content in course website, instructor availability (in person and via email and phone), and instructor flexibility and understanding of students' competing demands. For example, in the SGID in one class, one student stated, "Dr. X is extremely helpful and explains assignments and expectations very well and with details." Another student shared, "I like how Dr. X takes questions which were asked by individual students and addresses her response to the class as a whole, because the questions are very likely to be questions that other students have as well." In addition, one student remarked, "Dr. X definitely puts our learning needs first." Some examples of needs that students expressed include, "I would like Dr. X to make assignments available further in advance so I can work ahead and at my own pace" (this was an online course), and, "I would like Dr. X to provide more explanation about what is expected to be learned from the modules." In the SGID in another class, one student remarked, "I like that Dr. X uses current events that are relevant to healthcare." Another student stated, "I like that Dr. X has a clear instruction and that most weeks there is 1 assignment due by Sunday."

Further, IDEA score averages in one of the foundational PH classes were exemplary and illustrated effectiveness at achieving course objectives and learning outcomes as well as promoting a learner-centered environment. Across two semesters, this PH class had an average of 18 students and elicited the following IDEA score averages (out of a 5.0 scale):

Summary evaluation: 4.25, Progress on relevant outcomes: 4.0, and Overall ratings: 4.4. Higher ratings indicate more significant student progress and more positive student experience. One qualitative student response to the IDEA evaluations for this particular PH course was the following:

> I have never had a Ferris State University instructor take so much interest in helping me achieve my goals. Dr. X is knowledgeable about this field, and has presented the material in such a way that it was easily understood. I often feel like I have to "decode" the expectations of an assignment/ course navigation as long as I have to work on an assignment, and this was not the case here. I always knew what I needed to do and when.

Another student shared,

> Professor X took the time to reach out to me for follow up more than once. She has a wealth of knowledge, and projects that through her lectures. I truly enjoyed taking this course because of her teaching style; she has the ability to personalize her teaching with each individual student.

> Additionally, another student stated, "Loved this class. She is an awesome instructor who really knows how to engage the students and make the information easy to grasp …She is great at explaining topics and ideas and relating them to real life situations so it is easy to see how it is used in everyday life."

Building on feedback obtained from the SGID and IDEA course evaluations, as well as course observations by the Department Head and members of the tenure committees, the faculty engaged in various professional development activities in order to learn how to incorporate new learner-centered teaching strategies into their courses   Some of the faculty attended a "Presentation Zen" workshop (Reynolds, 2007), which provided techniques to transform PowerPoint slides, primarily through the use of pictures and stories rather than text, into starting points for student engagement and active classroom discussion, as opposed to platforms for the traditional lecture format. To increase engagement in their classes, some faculty attended a workshop to develop skills in administering "clickers," interactive technology that gives instructors the ability to pose verbal questions and receive immediate, anonymous feedback from students. Clickers have increased in popularity in recent years, mainly due to their value in engaging students during lectures (Cain & Robinson, 2008; Collins, 2008) and with studies illustrating their use increases student performance on undergraduate science exams (Crossgrove & Curran, 2008; Reay, Li, &

Bao, 2008). After attending the training, faculty used clickers in a PH class by administering an interactive quiz to assess student understanding of health disparities due to factors such as socioeconomic status and geographic location, and they reported the tool allowed for immediate assessment of student learning and helped to increase participation and engagement among students. Some faculty also attended an interactive professional development workshop designed to encourage faculty to examine power, identity, and privilege in teaching and student learning and to apply these experiences to more inclusive teaching practices. Subsequently, faculty applied insights from this learning community by assigning contemplative activities for students to reflect on course learning outcomes and by delivering a regional conference presentation based on this workshop.

Further, PH faculty were able to earn Professional Development Incentives (PDIs) from many of the training activities they attended. The PDIs supported some of the faculty to travel and present their preliminary findings on cultivating a learner-centered curriculum for a rural PH program and building academic-community partnerships to promote PH in rural populations at peer-reviewed national and international conferences, including the American Public Health Association conference and the Hawaii International Conference on Education. These conferences allowed PH faculty not only to obtain feedback regarding their research from colleagues in the field, but also to broaden and inform their own teaching expertise in order to improve student learning.

Lastly, after the first year of working to develop a new learner-centered PH program, some of the PH faculty were inspired from the NFTP workshops and other professional development activities (e.g. PH and Education conferences) to apply for and receive the Ferris Engaged Department Initiative (FEDI) Award, which is a grant from the FCTL to incorporate academic service learning into multiple courses in the Public Health program. Therefore, the concept and application of community engagement through service learning will be scaffolded throughout the PH program curricula, thereby allowing students to apply course concepts in the real world context, build relationships with community members, and help improve the health of the community throughout their progression through the program.

Discussion

The intentional effort to focus on the student learning experience by engaging in the COAT program, Public Health Immersion Week, NFOW, and NFTP workshops, along with year- round review practices such as the SGIDs and IDEA evaluations, closely

approximate the learner-centered teaching experiences as described by Weimer. The program learning outcomes reflect the intentional emphasis on discipline-specific and professional skills necessary in the practice of public health. This emphasis is particularly important in the training of students as Public Health is delivered through the complex interaction of multiple organizations such as health care providers and insurers, community-based organizations, educational institutions, law enforcement and public safety agencies, and businesses among others (Paul, 2002).

Developing the program learning outcomes with input from all program faculty members served to ensure program learning outcomes aligned with the multidisciplinary nature of the BSPH program. Faculty facilitated an overarching learning experience, as evidenced in the BSPH curriculum map, which is consistent with the program expectations of Public Health.

PH course content and learning activities allowed students to identify and understand how they, individually and collectively, can recognize the determinants of health, including how factors such as geographic location can contribute to disparate health outcomes. Course content and learning activities also afforded students the opportunity to identify the elements of health and the impact of illnesses in their own lives and regions and also contextualize these issues to rural and underserved populations. The integration of learner-centered activities into PH coursework and activities also allowed students to contribute to, and take ownership of, their learning.

Findings from the SGID sessions and IDEA evaluations suggest that students engaged in a lived and learned experience. By engaging in the SGID session, faculty demonstrated the willingness to involve students in shaping their learning experience and, subsequently, the willingness to share power, which is one of the attributes of learner-centered teaching. Allowing students to sufficiently engage in the SGID session early in the semester resulted in feedback with regards to communication, timeliness, and preferred learning environments. This allowed the development of comprehensive syllabi and assessment methods that accounted for the variation in learning preferences and did not limit assessment to the traditional model of mid-term and final examinations. Also, the SGID process specifically invites students to identify what they could do differently to improve their learning. This sort of metacognitive activity challenges students to uncover skills that will not only make them more successful as students, but will also serve them well as practitioners. The high overall scores on IDEA evaluations for the PH courses in instruction during the study period suggest students appreciated the opportunity to reflect on how and what would align well with their learning abilities,

without deviating far off from the average class learning experience. The IDEA evaluations also suggest that faculty successfully demonstrated the application of learned constructs to the students and, consequently, the successful implementation of the learner-centered strategies. Graduates of the undergraduate program are usually in preparation for an entry level position in the practice of PH or on the pathway to professional programs, including higher levels of training (Lee & Friedman, 2015). The learner-centered approach appears to be of particular relevance in the training of PH undergraduates since PH is a collective effort, sometimes referred to as a 'team sport' (Friedman & Lee, 2015), and therefore the responsibility of training institutions to prepare graduates to be successful in the practice of their discipline.

In summary, all of these items are critical because in a newly launched PH program, efforts towards incorporating learner-centered strategies in course development and delivery will help improve program goals of helping future health professionals to address needs of rural, underserved populations. This will ultimately help advance PH practice. While most higher education institutions implement development activities, faculty members working with their colleagues throughout the development of the PH program should sustain longer lasting effects as compared to leader based change alone (Fullan, 1999).

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Acknowledgements

Appendix

Chronological Flowchart of Development of Learner-Centered Curriculum, 2014-2015

Figure 1
(Timeline of activities)
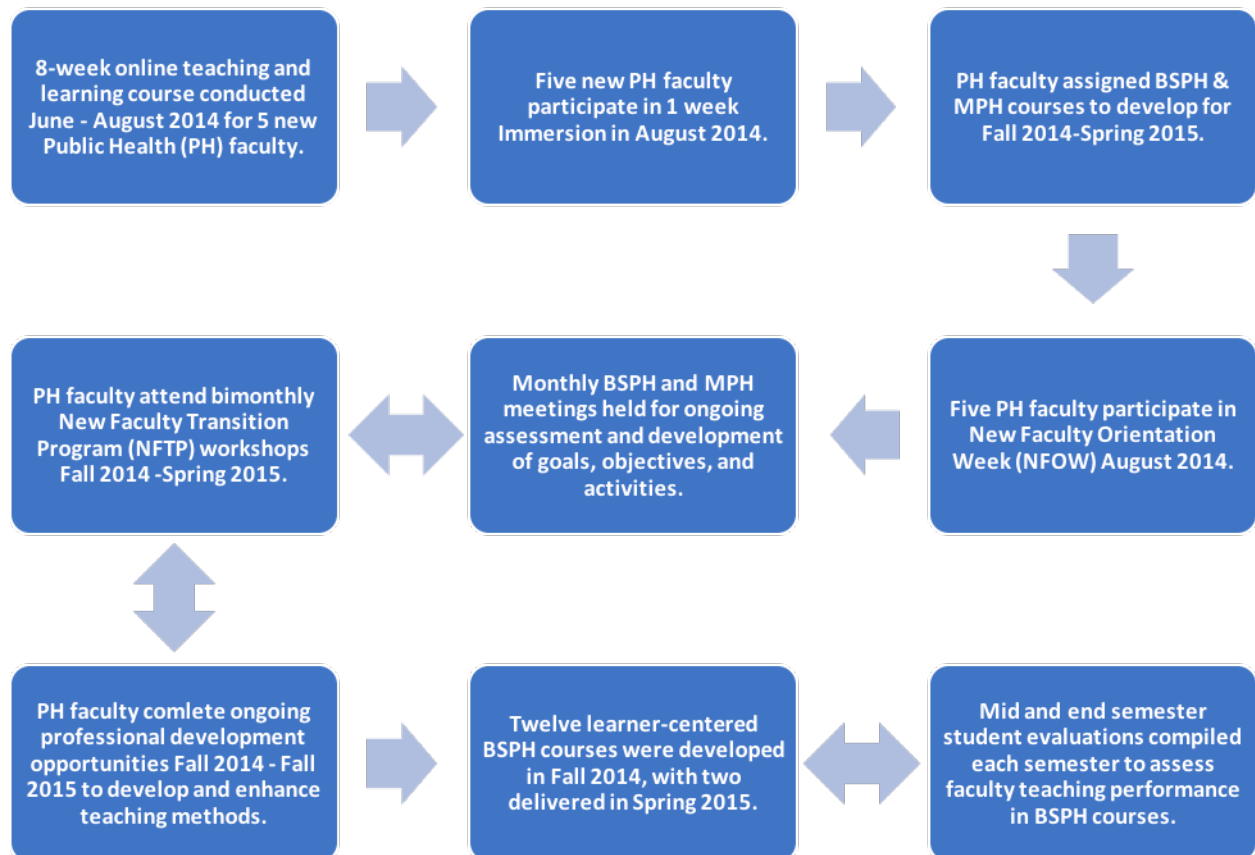
Take a SIP of This: Peer-to-Peer Promotion of Strong Instructional Practice

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Post-secondary education remains mostly inaccessible to non-traditional students. Many colleges do not have the proper resources or programs to effectively support a wide variety of learners who all present with different educational challenges and needs. Universal Design for Learning (UDL) promotes diverse teaching methods to benefit all students. Although faculty and administrators are aware of the increasing diversity of college students and the need for greater flexibility in instructional design, many do not know how to successfully use UDL in their courses. This article discusses a grassroots effort by a group of professors to devise a no-cost, low-input, high-impact way to share strong instructional practices, all rooted in Universal Design for Learning, that could enhance teaching and learning across the institution.

Introduction

Historically, higher education in the United States has been primarily available to a professional class that was white, able-bodied, heterosexual, Christian, and male (Pliner & Johnson, 2004). The increase in students from traditionally minority populations in post-secondary education, along with recent key legislation such as the Americans with Disabilities Amendments Act of 2008 and the 2008 Higher Education Opportunity Act, has generated attention around the concept of accessibility in higher education for students with diverse learning needs (Newman et al., 2011; Pliner & Johnson, 2004; Raue & Lewis, 2011; Riggs, 2014; Snyder & Dillow, 2011). Although institutions of higher education serve an increasingly diverse student body, they have traditionally been resistant to change, especially in accommodating the needs of students considered minorities because of race, class, ethnicity, gender, disability, religion, nationality, or sexual identification or orientation (Pliner & Johnson, 2004). This can be seen in the fact that students who have disabilities, veteran/military personnel, low income students, and first generation college students all have graduation rates far below the general population (Newman et al., 2011; Raue & Lewis, 2011; Riggs, 2014). Effective approaches to support the success of these student populations have not kept pace with enrollment.

Rose and Meyer (2002) argued that the disconnect between an increasingly diverse student population and an unyielding curriculum would not produce the academic achievement gains expected of 21st-century global citizens. The authors challenge educators to think of curricula as disabled instead of viewing their students who struggle to be successful as disabled (King-Sears, 2014). The creation of higher education environments that support students with diverse needs is a difficult task that requires major transformations with regard to policy, procedures, and processes (Aune, 1995; Pliner & Johnson, 2004; Silver, Bourke, & Strehorn, 1998). In order to create inclusive environments for diverse student populations, higher education must be totally reconfigured and will require a shift in educational practices (Pliner & Johnson, 2004). Administrative mandates and university-wide strategic plans may help instigate this shift, but ultimately, pedagogical innovations often happen because of the championing of grassroots leaders, such as faculty (Kezar & Lester, 2009). What happens in schools and classrooms is less related to the intentions of policymakers than it is to the knowledge, beliefs, resources, leadership, and motivations that operate at the grassroots level (Darling-Hammond, 2000).

As the landscape of higher education has changed over the past decade, the demands being made on professors with regard to pedagogical innovation and instructional delivery have become more intense (Izzo, Murray, & Novak, 2008). Academic achievement has always been within faculty purview, but now enrollment, retention, graduation rates, and other indicators of broader institutional health have come to be considered part of our professional obligation as well. The greater demands on faculty time and the nationwide reduction of economic capital available to higher education have left faculty with little time and few resources with which to enhance pedagogy at a time when the lion's share of responsibility for student success has fallen upon the shoulders of the professoriate. This paper details the steps of a grassroots initiative, led by a small group of university professors, to support strong instructional practice among the faculty at their large state university.

We use the term "strong instructional practice" (SIP) as an umbrella term for pedagogy based on the principles of Universal Design for Learning. According to the Higher Education Opportunity Act of 2008, the term Universal Design for Learning (UDL) means a scientifically-valid framework for guiding educational practice that encourages flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged. UDL also reduces barriers in

instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students especially supporting those students who may learn differently or need varying degrees of support (King-Sears, 2014). Strong instructional practices are inclusive of equity-minded pedagogy and the creation of accessible learning environments for students with disabilities and diverse student populations, with and without disabilities. They are compliant with Sections 504 and 508 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act.

After characterizing our university setting and the challenges faculty face to learning about and implementing, strong instructional practices, we explain how our peer-to-peer model developed. We then describe how our model works so that faculty can adopt aspects of our model as appropriate to promote strong instructional practices at their own institutions.

The Local Context and Challenges

Effective pedagogy has long been a prominent part of the institutional identity of the academic experience at Metropolitan State University of Denver (MSU Denver). With 18,000 students, and located in the heart of downtown Denver, the university's mission dictates affordability and accessibility, and to this end our tuition rate is by far the lowest of any of the Rocky Mountains' state institutions. MSU Denver is a "modified open access" institution with a non-traditional student body who often lack the skills typically associated with academic success. The students attracted by our mission and geography consist of many students of color (35%), Pell Grant recipients (35%), and first-generation students (33%). MSU Denver has a relatively high percentage of students with disabilities (averaging about 5% per year over the last five years), and serves almost 1,000 military veterans. Growing enrollments of students in these categories at MSU Denver mirror national trends in growing student diversity (Newman et al., 2011; Raue & Lewis, 2011; Riggs, 2014). Effective instructional design and delivery require well-informed pedagogical approaches based on the wide array of our students' interests, abilities, and identities.

As at many institutions, faculty efforts toward thoughtful course design and pedagogy that result in student success are consistently complicated by cultural, structural, and financial barriers at MSU Denver (Knapper, 2008; Weimer, 2002). The professional culture of the university plays a fundamental role in instructional design and delivery at the institution, and this merits review as we consider the implementation of strong instructional practice at MSU Denver.

MSU Denver has invested significantly in human capital over the past ten years, resulting in over 58% of faculty being full time with 62% holding terminal degrees in their field (Metropolitan State University of Denver Board of Trustees, 2016). Faculty at MSU Denver typically teach a four 3-credit hour courses a semester--a course load which, in combination with the demands of research, advising and service, can result in faculty adopting a survival mentality as opposed to a mindset of continued professional development. With more emphasis being placed on research and publication than ever before at MSU Denver, teaching can sometimes take a back seat to other aspects of the job.

The institution has made large investments in faculty support. Workshops, trainings, and practicums that touch on inclusive pedagogy, support of a non-traditional student body in an open-access institution, and adaptation to the constantly changing climate of higher education are offered with great frequency to both junior and senior faculty, but finding time and resources to take advantage of these opportunities, and thus for quality teaching, remains a challenge for all.

As is the case for many institutions, the economic challenges that MSU Denver confronts have a particularly intense impact on teaching and learning. Colorado is continuously among the five states with the lowest funding of public higher education (Sauter, 2013; State Higher Education Finance Report, 2014). This lack of economic resources is certainly felt at MSU Denver, where increasing tuition is not a viable means of boosting institutional revenue that might be because of our emphasis on being affordable. State funding to institutions of higher education in Colorado is determined to a great extent by performance measures tied directly to credit hour production and to the number of degrees granted each year. Desire to maintain funding levels contribute to a sense of urgency to encourage effective teaching and student support measures.

Supports for Strong Instructional Practice at MSU Denver

Despite these challenges, there is a high level of dedication among the faculty at MSU Denver, and a great desire to improve and sustain exemplary teaching. Student success is at the forefront of all faculty endeavors. MSU Denver also has cultural, structural, and financial supports for faculty development of strong pedagogy. Many of these supports emerged in the context of an increased institutional emphasis on student retention, legal and ethical responsibilities for accessibility for students with disabilities, equity-minded pedagogy, and creation of a supportive environment for a wide array of non-traditional students. The development of these supports illustrates the growing investment in student learning initiatives on campus.

Key among these supports is the University's Center for Faculty Excellence initiation of faculty learning

communities (FLC's), which are faculty-facilitated groups of self-selected professors who spend an academic year exploring a topic of common interest. One such FLC spent a year studying UDL by reading salient texts and meeting bi-monthly to discuss topics such as research on UDL, UDL-based assessment, and redesigning course activities with UDL principles in mind.

The Center for Faculty Excellence also handles new faculty orientations, which typically include some coverage of basic principles of UDL; however, the coverage is quite basic as the UDL portion of the orientation agenda is usually limited to about one hour. Concepts touched upon usually include allowing students multiple ways to demonstrate mastery of course concepts, incorporating visual elements into lectures, and offering students feedback to their work in writing or in audio format, depending upon student preferences. Because UDL is a new concept to the majority of faculty at the orientations, a significant portion of the presentation is devoted to simply defining and defending the concept.

Another important support is MSU Denver's Access Center, which is responsible for helping students with documented disabilities receive appropriate accommodations in their classes. It also provides the faculty with training and in-class support to help them implement accommodations for their students. For example, the Access Center staff teach faculty how to convert their course materials to formats accessible to students who rely on assistive technologies.

One of the primary ways the Access Center staff support student success is through promoting faculty use of UDL. The Access Center raises awareness of UDL throughout the university through an annual award recognizing one faculty member for their commitment to putting the principles of UDL into practice by emphasizing proactive and inclusive pedagogical practices to benefit a broad range of learners. Sponsoring the award gives the Access Center an opportunity to remind faculty at least once a year about what UDL is and to encourage all faculty to consider how they are using UDL in their own teaching.

Ongoing Confusion Among MSU Denver Faculty

Given that faculty who teach at MSU Denver are often attracted to the institution specifically because of the diverse student population it serves, they are typically motivated to enact pedagogies that emphasize interactivity and appeal to all learners, including inclusive pedagogy and accessibility. At the same time, it was common to hear instructors state anecdotally that rethinking their course design was just "one more thing" they were responsible for in addition to increased university service, higher research expectations, and a heavy teaching load. Many faculty who put in the effort

to make courses accessible for students with disabilities wondered why they should put so much time and energy into revamping their course materials when they may not have any students with disabilities in their courses. Despite, and perhaps because of, a broad array of opportunities and initiatives that grew over a period of one to two years, faculty at MSU Denver were often frustrated and overwhelmed by lack of clarity of the requirements for updating their pedagogy to meet federal mandates related to students with disabilities and were also frustrated by needing to update their pedagogy to teach a wide variety of students.

In 2013, aware of these frustrations, the MSU Denver Faculty Senate Instructional Resources Committee, a standing committee charged with making recommendations related to the use of, and budgeting for, instructional technology, classroom space and equipment, and training related to teaching, surveyed all faculty about their level of confidence regarding course accessibility and their perceived knowledge of UDL. One hundred sixty-two faculty responded, representing 17% of tenured and tenure-track faculty and almost 1% of affiliate faculty. The survey results indicated that, while faculty understood the importance of making their courses accessible, they were not highly confident that their courses were indeed accessible; in fact, 23% of respondents indicated that they were unclear whether their course materials were compliant with federal regulations for accessibility and 25% indicated the same with regard to online courses. The survey indicated that faculty wanted more information about what constitutes accessibility, and 61% of respondents specifically wanted training and professional development related to UDL.

In response to these findings, the Instructional Resources Committee had many meetings with the directors of the offices involved with supporting faculty in making their courses accessible, including the Access Center, which supports students with disabilities; the Center for Faculty Excellence, which supports faculty in developing teaching and pedagogical tools; the Educational Technology Center, which helps faculty with technology related to instruction; and Information Technology Services, which orders and maintains all technology on campus, as well as the Provost. All wanted to give faculty what they wanted and needed, but wondered how to do that in a way that would not exhaust already tight budgets nor appear to be top-down, administrative driven mandates. The Instructional Resources Committee's survey results and subsequent meetings indicated that there was a receptive mood on campus to an organized dissemination of pedagogical strategies to improve course accessibility, but with no resources to devote to such a project, conversations stalled.

Evolution of the SIPSQUAD

Aware of the receptive mood and the attendant limitations, the Director of the Access Center invited all of the previous recipients of the Universal Design for Learning Award to meet to devise a no-cost, low-input, high-impact way to support our own and our peers' acquisition of strong instructional practices that would enhance teaching and learning at MSU Denver in order to contribute to student success and institutional advancement. Ongoing meetings of the group led to the formation of a grassroots, faculty-led team that sends a weekly email out to all instructors with tips for strong instructional practices that are meant to be quickly read, easily understood, and immediately implemented. We agreed on a name for these tips: Strong Instructional Practices, with the catchy acronym "SIP."

In that first meeting we discussed our shared passion for expanding the use of strong instructional practices at the University. We acknowledged the challenges facing faculty, but also agreed that the bulk of our faculty genuinely care about providing high quality instruction, though they did not always know how to do so. We thought that if we could describe easy-to-implement strong instructional practices and provide examples and additional resources, many of our peers would adopt one or more of these approaches and make strides toward improving their instructional design and delivery.

Each member of the team came with the conviction that the larger purpose of higher education is to transform lives, as well as that every faculty member has a responsibility to ensure that every student can and will learn. One potential barrier that we navigated right away was the need to reconcile our own individual understandings of the relationships among accessibility, equity-minded pedagogy, and Universal Design for Learning. Our goal was to connect as broadly as possible to as many faculty as possible, and we agreed that the terms "accessibility" and "UDL" are often overused in relation to disability and underused in relation to teaching all students. We decided that rather than focus specifically on either of those ideas, we would instead promote strong instructional practices that include both accessibility and UDL.

Writing and Distribution of SIPs

We brainstormed a long list of general instructional topics we felt would benefit faculty across all disciplines. Examples include note-taking, class climate and learning environment, accessibility issues, attendance, inclusive discussion in face-to-face and online learning, use of electronic applications and other technologies, feedback and assessment, project-based learning, service learning, and Englishes and English learners, among others. The initial list included about 50 topics which we narrowed down to 16. Each member of the team agreed to write three or four SIPs over the course of the semester. We came up with a schedule indicating who was responsible for writing the SIP each week and the topics. SIPs published in our first semester included facilitating inclusive class discussions, giving useful written feedback to students, creating a positive classroom climate, and implementing project-based learning. Examples of three SIPs can be found in Appendix A.

We decided to create a format for the emails that we could use consistently. We felt it was vital that our emails be short so that faculty could read them in a minute or two instead of feeling burdened with a lot of information during a busy day. We agreed that the SIPs should describe a concrete practice with examples and resources that would allow faculty to implement the pedagogy relatively immediately and with little additional investigation. Each SIP begins with a few sentences describing a common challenge for faculty in higher education. The next section defines the strong instructional practice, explains how it can help mitigate the challenge, and provides examples of how it can be used in a higher education classroom. The third section is a short list of electronic resources that provide additional information on the topic.

SIPs are practice-oriented, and although each of us is familiar with the research supporting the practices, we intentionally do not include references for research that demonstrate the efficacy of the approach. Our focus is to clearly and succinctly describe the practice and its application rather than the empirical support. In describing the potential uses of the practice we are careful to consider applications to disciplines other than our own and often provide several short examples. For brevity, we provide only a few (3-5) high quality resources.

We decided to send the SIPs out via email on the same day each week so faculty could become accustomed to receiving the SIPs regularly. We enlisted the aid of the Provost's office to send the SIPs to all faculty on our behalf. This both demonstrated institutional support and allowed individual members of the group to remain anonymous.

The group decided to keep the member's identities masked and instead chose to sign the weekly emails "Sipsquad." The motivation for this secrecy was three-fold. First, we wanted faculty to associate the instructional practices with pedagogy, not with an individual. Second, we wanted faculty to see these practices as being applicable not just to students with disabilities but to all students in their classes, and we felt that sending out weekly emails from a group of UDL award winners might have sent the message that these were strategies only for students with disabilities or techniques that should

only be practiced by "experts." Lastly, as the members of this team were willing to add yet another meeting to already overcrowded schedules, the feeling of being part of a "secret society" added fun to this new venture.

Faculty Response

From the publication of the very first SIP, we received both positive and thoughtful responses from the faculty. It quickly became clear that faculty were not only reading the SIPs, but that they were implementing them. After the SIP on note-taking was published, for example, one respondent wrote the following:

> I noticed for the first time last semester that instead of taking notes, my sophomores would just take pictures of me with their iPhones. It was weird and disturbing but at least they didn't want autographs. I was wondering what I could do to help them build note taking skills, this is a great idea.

Another offered this perspective:

> As an affiliate faculty, I receive a ton of MSU Denver emails that I just don't read and usually just go to junk. BUT, I think these SIP emails you're sending out are the most useful emails I get. I teach college and my wife is a high school teacher and she loves reading them as well. We're always looking for small, simple things to improve our pedagogy and these are very nice. Thank you for sending these out :).

We found that faculty provided feedback to SIPs on topics with which they were highly familiar. In response to a SIP on effective instruction for students whose primary language is something other than English, one faculty offered this perspective:

> As a teacher educator for Culturally and Linguistically Diverse Education teacher candidates, I just wanted to pass along that this SIP is excellent in the tips that it provides! Specifically, the idea that the home or primary language is so important to value and utilize in support of English! Kudos!

Other faculty offered clarification which kept us on our toes, such as the following:

> Because of my work in universal design, I noticed that in today's SIP #13 that faculty are encouraged to use voice recorded feedback.

> What I didn't see was any mention that recorded oral feedback is required to be ADA accessible.

Each clarification was well considered and beneficial to the Sipsquad, as we got a better sense of our audience and were encouraged to think even more deeply about our teaching practices and assumptions.

We also received comments, such as this one, about how faculty were expanding on SIPs:

> On the theme of using screen-reader technology, I add a final 'proofreading' step to almost all of my professional writing and email correspondence by having my computer read aloud to me. . . . I find that hearing my words in another's voice—perhaps especially in one that cannot interpret the meaning—helps me with assessing how someone else may read and interpret what I wrote. It also helps with catching those 'typos' (and 'thinkos') that escape my awareness because as the creator I know what I intended and thought I wrote.

As more SIPs became available to faculty, some readers asked if there was a place where all of the SIPs were archived. In response we built a website titled, "The Well". The Well includes several features. First, it includes all of the prior SIPs and a comment section for each; second, visitors can submit their own SIP for consideration for publication; third, we continually curate a library of resources for accessibility, UDL, and strong instructional practice in higher education, and last, we include a twitter feed featuring Sipsquad tweets and retweets from people and organizations with similar interests to ours.

Additional Approaches

While we offer our Sipsquad model as a possibility for adoption at other institutions as a way to increase strong instructional practices in higher education, universities can undertake other measures to support strong instructional practices. They can encourage co-teaching whereby two faculty work together with the same group of students, sharing planning and teaching (Bacharach & Washut Heck, 2007). The institution can provide incentives for faculty to visit other instructors' classrooms to see different ways to teach the same topic. Tenure and promotion guidelines can use peer review of teaching as a formative, not just a summative, tool (Hammersley-Fletcher & Orsmond, 2005). Universities can even create visual representations, like badges, on faculty member's doors (Young, 2012) to signify that the faculty member is committed to strong instructional practices. Institutions can also

make strong instructional practices part of faculty evaluation systems, student evaluation systems of courses, and institutional rhetoric such as mission and vision statements.

Conclusions

Several factors have facilitated our ability to develop this program and gain readership:

- An institutional culture that values strong instruction and faculty who typically value the same has created a climate in which instructors have shared that they view the SIPs as a value-added rather than a burden.
- Keeping the Sipsquad a small, anonymous group made up of UDL award winners contributes to a team that is collegial, respectful, and supportive of one another. We look forward to meeting and often feel energized by one another's enthusiasm for the program and strong pedagogy. We learn valuable instructional approaches from one another.
- Because the SIP program is a grassroots effort by faculty, the program is not driven from the top down. The director of the Access Center is a valued member of the team but contributes collaboratively rather than as administrative oversight.
- As faculty who feel pulled in many directions on a daily basis, we developed the SIPs for ourselves and for our colleagues as small, digestible, weekly informational emails to improve university teaching practices. We believe that our efforts to make the SIPs succinct contribute to readership.

We share the development of the Sipsquad and the SIPs to showcase one example of how a faculty-driven initiative related to universal design for learning can be created and implemented at an institution for higher education without too much extra work on any one person's part. The collaborative effort added to the quality of the SIPs and to the collegiality created through meeting about this effort.

At this point we have not collected data examining if the creation and dissemination of SIPs increase retention, class completion, or graduation rates, but based on informal feedback we do know that the SIPs are impacting the academic conversation about pedagogy in higher education at our institution, which is a great beginning. We are currently considering how we could measure the impact of the SIPs. Our original goals were to increase student retention, course completion, graduation rates, and other indicators of broad institutional health. A fundamental assumption

was, and continues to be, that faculty use of strong instructional practices will result in those goals. It is possible that a multi-method study of faculty feedback on their pedagogical practices and utilization of SIPs, student feedback on response to instruction, and analysis of targeted groups of students for retention and graduation rates may provide the answers.

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Appendix

Strong Instructional Practice (SIP) Example 1: The Class Notetaker

Thirsty for a Strong Instructional Practice?
We want students to take notes during class, but they often don't know how to take effective notes.

Take a SIP of this: The Class Notetaker
One way to demonstrate the value of taking quality notes and to help students improve their note-taking skills is to build note-taking into class participation. Students could be asked to post their notes to BlackBoard within 24 hours of class; either one student could be designated as the person who needs to post their notes or the entire class could be asked to contribute. During the first several class meetings, a few minutes could be spent at the beginning of class reviewing the notes that have been posted and talking about what makes them effective or how they could be improved. Bonus: This practice makes it unnecessary to find an official note-taker for students with a note-taker accommodation.

Still thirsty? Take another SIP of The Class Notetaker

- Wiki How's "Take Better Notes." http://www.wikihow.com/Take-Better-Notes
- Vivian Zhu's YouTube video "How To Take Class Notes & Study For Tests.https://www.youtube.com/watch?v=VbDG3gE8ias
- CalPoly's "Notetaking Systems." http://www.sas.calpoly.edu/asc/ssl/notetakingsystems.html

SIP Example 2: Classroom Assessment Techniques

Thirsty for a Strong Instructional Practice?
We all want to create the ultimate learning environment for our students. What does this look like? It may vary from discipline to discipline, or from lower-division to upper-division classes, but two aspects of a good learning environment are constant: student contribution and student safety. Every student should contribute to the learning community, and in order to do that, he or she must feel that it is safe to make mistakes and safe to give wrong answers. If students are concerned about "looking stupid" or being berated by classmates or the instructor because they miss the mark in a group conversation, they won't participate at all. So how can we create a learning environment that supports high standards for student learning while at the same time allowing students to learn from their own mistakes?

Take a SIP of this: Classroom Assessment Techniques
Integrate frequent, formative, low- or no-stakes classroom assessments into your daily plans to complement the summative assessments that structure your syllabus. There are many "Classroom Assessment Techniques" ("CATs") that can allow students to demonstrate their control of course content and, if their control is not strong, receive feedback from the instructor that can get them back on course.
The classic example of an effective CAT is a Minute Paper. Let students use the last couple of minutes of a class session (or assign this as a task in an online course) to answer three questions on a piece of paper: What is the most important thing you learned in class today? What questions do you have about the material from class today? Is there anything that you didn't understand? This low-impact exercise lets the student be honest about their control of the material, and it lets the instructor know what needs to be clarified or re-visited either individually or collectively at the next class meeting. When students see that the instructor is ok with mistakes and actually values input on content control, they are more likely to participate openly in class and gain a deeper understanding of the course content.

Still thirsty? Take another SIP of Classroom Assessment Techniques
There are many CATs that vary in intensity and preparation. Below are some resources to help you discover the CAT that is right for you and your course.

- Here's a link to Angelo and Cross's foundational work on Classroom Assessment Techniques (there are copies in the MSU Denver Center for Faculty Development—pop in to check them out without buying your own copy!): http://www.amazon.com/Classroom-Assessment-Techniques-Handbook-Teachers/dp/1555425003

- The Vanderbilt Center for Teaching has a nice website on CATs: http://cft.vanderbilt.edu/guides-sub-pages/cats/
- And the Iowa State Center for Excellence in Learning and Teaching has information on CATs that really digs into the psychological benefits that performing these assessments provides to classroom climate: http://cft.vanderbilt.edu/guides-sub-pages/cats/

SIP Example 3: Ice Breakers

Thirsty for Strong Instructional Practice?
Welcome to the first day of the new semester! Everyone is excited, the room is filled with promise. You don't want to kill the mood by spending the entire first day going over the syllabus, but when you enter the classroom and look at 25 new students, you wonder how you are going to get this ball rolling.

Take a SIP of This: Ice Breakers
First-day ice breakers may seem trite or overly enthusiastic, but they can go a long way toward setting the tone for a class and establishing your parameters while allowing students to get to know each other and know you. Community building starts on the first day and can often be that key element that shapes up a successful teaching and learning experience.

Here are two favorite icebreakers:
Listen to my name. Arrange students in pairs (in case of an odd number, you can pair up with the remaining student). Give each student two minutes to tell the story of his or her name—how was it chosen? Does it have special significance? Is it attached to a nickname? Etc. The student who is listening can't say a word. After two minutes, the two students switch roles. Finally, each student "introduces" his or her partner to the rest of the class. This icebreaker is a great demonstration of how to listen—what it feels like to be truly present without jumping in and replying. It is an excellent way of building confidence for students—their story, opinion, and point of view means something. It helps students to recognize how long two minutes really is (have you ever had that student who goes on and on, probably without realizing how much he or she is talking?). And by the end of the exercise, every student in the class knows each other's name—a fabulous first step toward community building.
Set common goals or learning outcomes for the class. Using your syllabus as a point of departure, take a look at your learning outcomes or course goals and expand to create objectives for classroom behavior or community experience. You may ask, for example, "How does this class feel about late arrivals?" This usually inspires a good conversation around how we feel when others arrive late, what we would like them to do when they arrive late (sneak in quietly and sit down, or publicly apologize?), or if it is even an issue. You may be surprised—little details that can drive a professor nuts might not be an issue at all to the students in the community. Other topics may include use of technology, food and drink, side conversations, etc. By setting common goals around these community behaviors, you can learn a lot about the personality of the class and also take some of the "policing" responsibility off of yourself.

Still Thirsty? Take Another SIP of Ice Breakers

- http://www.cedu.niu.edu/~shumow/itt/Icebreakers.pdf
- Primary and secondary school models can easily be adapted for more mature students in higher ed. Also look to business models for community building.

Negotiating the Client-Based Capstone Experience

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Many graduate programs for professionals (public policy, public administration, business, international affairs, and others) use client-based experiential learning projects, often termed "capstones," in which students combine theory and practice to benefit an outside client. Increasingly, undergraduate programs use client-based capstones as well, whereby students work with a client over a semester to solve a problem. Evidence suggests that students value these experiences and clients often describe value created as well. However, evidence also suggests that both students and clients can experience a mismatch of expectations, gaps in information, misunderstandings, and frustrations in the process of working together. With the objective to enhance learning for students and create value for clients, reframing the capstone project as a "negotiation in multiple domains" rather than a "fixed problem to be solved" has potential benefits for the student, the client, and the learning process. The approach may have implications for a broad range of team-based problem-solving initiatives. This paper, using the team-based capstone experience of the "International Development in Practice" class at the University of Notre Dame, explores how an integrated negotiations approach contributes to the capstone value creation and learning experiences.

Experiential learning can help students develop knowledge, skills, and values from direct experiences outside a traditional classroom setting (Kolb, 2014; see also Kolb & Fry, 1975). The client-based capstone experience, which pairs students with clients who define a problem or opportunity they would like the students to address, is an increasingly common way to engage students in experiential learning. In the process, students can make important connections between their academic work and real-world practice, as well as assist a client with a concrete problem (Hauhart & Grahe, 2014).

However, experience suggests that the maximum benefit is often not realized due to obstacles that impact the experiential learning and value creation process. This essay explores how a limited conceptualization of these capstone projects and a mismatch of expectations, especially between students and clients, often contribute to these problems. The essay proposes that reframing the capstone project as a "negotiation in multiple domains" rather than a "fixed problem to be solved" has potential benefits for the student, the client, and the learning process (see Putnam, 1988, for discussion of multiple-level negotiations; also see Cohen, 2004). Furthermore, the essay proposes concrete strategies and tactics to put these ideas into practice.

The Capstone: Experiential Learning in an International Development Class

"Education is not preparation for life; education is life itself," stated Thomas Dewey some 100 years ago. Dewey's iconic phrase manifests itself in the theme of authentic learning, or "learning-by-doing" as a classroom environment focused on "real-world, complex problems and their solutions, using role-playing exercises, problem-based activities, case studies, and participation in virtual communities of practice" (Lombardi, 2007, p. 2). It transcends any single discipline, incorporates multiple perspectives and cultivates a culture of doing instead of just listening. In the process, students help develop a set of 'portable skills': judgment to separate reliable from unreliable information, a synthetic ability to recognize patterns in unfamiliar settings and the endurance and patience to follow an argument over a sustained timeframe without giving up (p. 3).

In many higher educational settings, "capstone" projects are increasing common ways to try to link theory and practice, as well as to integrate and synthesize learning (Hauhart, 2015, p. 43). In this article I focus on one type of capstone experience that has students work in teams to address a problem or opportunity identified by a client organization.

For the past six years I have taught a class at the University of Notre Dame called "International Development in Practice: What Works in Development." The class examines opportunities and challenges to promoting positive individual and societal change. Linking international development theory and practice, the class attempts to help students develop practical skills through experiential learning. In my international development class the capstone has evolved from students working on crafting a solution to a hypothetical problem to student teams addressing a real world problem proposed by an actual client.

When Things Do Not Work as Planned

Undergraduate teams working with real clients can face multiple challenges ranging from their lack of professional experience to unclear problem definition, from ineffective engagement of clients to

miscommunication.   One experience with a client brings some challenges to light.

The client wanted to understand how to bring environmental concerns more effectively into the citing of new energy projects in Chile. The client believed there was a relevant experience with the U.S. Department of Interior incorporating environmental concerns in approval of new energy projects, and the client asked students to map the most relevant U.S. cases and apply those lessons in the Chilean context.

Toward the end of the semester, the client told the team of four students that they needed to develop a succinct executive summary: "You need to realize your three-page executive summary is going to busy policy makers," he told them, "so put everything you have to say in this three-page summary."

The students followed the clients' advice explicitly and confidently submitted to their client a carefully prepared 40-page report, complete with the requested three-page executive summary. To their great surprise, the students received the following note from their client:

> I am reading your report with great interest. However, I highly recommend that you get someone who is a top-notch writer and a native speaker of English to review the executive summary… [I]f the executive summary is awkwardly and ungrammatically phrased, many readers will dismiss it from the outset.

The team was devastated. They were all native speakers, and there were no grammatical mistakes in their executive summary. After receiving the task to compress a comprehensive report into a three-page executive summary, the team had tried to pack everything they had learned into those three pages, using tightly compacted text with small margins.

Clearly, the client did not want the whole report in three pages.   Rather, the client wanted a concise overview that communicated the project's key ideas and convinced policymakers to read the entire document. With that recognition, the student rewrote their executive summary, and both the client and student team were satisfied with the final outcome.

In some ways this is an obvious example of a client-consultant misunderstanding. The students had neither the experience nor the confidence to explore why the client wanted "everything" in the three-page summary. The students had focused exclusively on what the client had said. In the language of negotiations, they had tried to meet the client's "position" rather than understanding what the client really cared about or "interests" (Fisher, Ury, & Patton, 1992).

Teaching students about negotiations has become a major theme of my international development course. However, as we explored the role of negotiations in the client relationships, it became increasingly clear that focusing solely on the negotiation between client and student team is insufficient. There are at least five critical negotiated arenas in a client-based capstone project: 1) instructor with the client, 2) instructor with students, 3) students with the client, 4) students with others who are not the client, and 5) students with their teammates.

This essay tries to explicitly map these negotiated relationships and provide some recommendations for effective analysis and management of each. This multi-party negotiation framework has the potential to transform the conception of the capstone process and create additional value for students and clients alike.

Negotiations and the "Development Advisory Team"

As part of my class, groups of three to six students, called Development Advisory Teams (DAT), are paired with professional development organizations searching to address an organizational or programmatic challenge or opportunity. Student teams serve as consultants on a problem or opportunity defined by a development "client," working in countries across Asia, Africa, or Latin America. Over the past four years, 42 student teams have advised 17 different organizations across four continents.

Typically, clients have a challenge or opportunity and are interested in learning what other organizations have done elsewhere. Our clients' interests ranged from promoting opportunities for employees with disabilities in Bangladesh to building an ethical leadership institute for the next generation of political leaders in Argentina. While students have input into the DAT project they will be assigned, they have little control over the initial definition of the problem or opportunity, as this is determined by their client. Afterwards, however, students have great freedom to negotiate and influence how best to address the problem presented as they try to create something of value for the client.

The end product for the client might do a few things: share "best practices" or lessons from other organizations or countries, provide insights to the issue defined by the client, and recommend options and/or a concrete path forward. As a former student reflected after consulting a client for Catholic Relief Services on how to strengthen health systems in Zambia, the DAT served as a "creative additive for a nebulous concept." In some cases, the DAT gives the client a fresh perspective to confront a stale problem.

As part of the course I teach a number of units on negotiation theory and apply that theory to a series of simulation exercises, applying the language and tools of negotiation skills to the client project. A central text I use in teaching negotiations is Roger Fisher and William Ury's *Getting to Yes: Negotiating Agreement*

without Giving In (1992). More generally, negotiations are at the center of the international development process, whether involving a community advocating for what it cares about with a government or development organization, the tension and interface between "donor" and "beneficiary," or the successful (or flawed) implementation of any project. The process that resulted in the eight Millennium Development Goals (MDGs) in 2000 was a negotiated outcome, framing much of the global development discussion during the past 15 years. The process to develop the post-2015 Sustainable Development Goals (SDGs) involved complex negotiations that prioritized certain issues while excluding others. For example, climate change—not explicitly included in the earlier MDGs—was fiercely negotiated and became a pillar of the SDGs.

Negotiations play a central role to achieve the course objectives: as a process to bring about change, as a lever to expand opportunities, and as a skill one can practice and improve (Fisher, Ury & Patton, 1992; see also Raiffa, 1985; Ury, 1991). Overall, the class explores the centrality of negotiations in every aspect of international development, both as a meta-framework and also as a part of the skill-building process for students. Students are exposed to the diverse perceptions, needs, and constraints of those one encounters in a professional setting, such as community members, colleagues, and clients.

Exploring Other Client-Based Capstone Experiences and Evaluations

Two formal evaluations, from client-based capstone programs at New York University and Binghamton University, as well as an informal evaluation at Yale University, provide relevant insights. Yale University's Global Affairs major, an application-only major that admitted its first group of students in Spring 2011, offers perhaps the closest case study to the model used in my course ("Global Affairs Major," 2015). Seniors in the Global Affairs major must take a semester-long capstone course where they work with eight to ten classmates on a public policy project on behalf of a client ranging from a government agency in the U.S. to an NGO abroad ("Capstone Programs," 2015). The first class of Global Affairs seniors completed the capstone course in Fall 2012, and a review cited "mixed" experiences with the client-based project (Menton, 2013). Clients were largely enthusiastic; one stated, "They brought really fresh perspectives to things we see every day, which was really exciting for us." Yale's Director of Undergraduate Studies noted, "One of the comments we heard more than once from clients was how impressed they were with the depth of analysis that

translated into specific policy recommendations" (Menton, 2013).

Some students, however, expressed frustration with the process, encountering problems of scope, clarity, and drift. "I think we learned a lot in the end, but I think some people were disappointed," one student remarked (Menton, 2013). It was clear that the capstone exposed students to the excitement and frustration that accompany working with a real-world client.

The experience with Yale's Global Affairs major reveals four tendencies of client-based capstone courses. First, students' experiences vary significantly depending on the client. Second, students without a constant stream of communication felt "aimless" while working on the project. Third, some felt the instructions were too vague and the scope of the project too large for unspecialized undergraduate students. Finally, as one student stated, "We wanted the project to be helpful to [our client], but I don't think we felt that at the end" (Menton, 2013).

An analysis of the capstone experience at New York University's Robert F. Wagner Graduate School of Public Service (NYU Wagner) provided additional lessons for the course design. Schachter and Schwartz (2009) surveyed 42 previous client agencies to determine whether NYU Wagner's Capstone program was helpful not only to the students, but also to participating clients (p. 448). NYU Wagner's Capstone program was more than a decade old when evaluated for impact, in total serving over 2,600 students and 400 organizations. Schachter and Schwartz discuss four ways to improve capstone outcomes. The first is to encourage concrete deliverables: "Projects for which teams developed or acquired specific tools and resources had significantly higher ratings compared to those that did not," they write (p. 454). The faculty manager should signal this in the client selection process, and it is beneficial to stress this to students throughout the project. Second, recommendations should be scaled to the agency's reality. Schachter and Schwartz note, "Any recommendations made to clients need to take into account the unique realities of the participating agencies" (p. 454). The third is a focus on administrative communication with the client; as most client organizations have little to no experience with students, it is important to "increase the level of communication between administration and clients throughout the year" (p. 455). Finally, unexpected things transpire, and simply, life happens:

> Data may not be readily available, the scope of a project may become unworkable, hidden agendas may arise that shift the nature and tone of the project, a key stakeholder may interrupt the progress of the work, or deeply considered recommendations may not be well-received.

Dilemmas like these are to be expected. What the students choose to do with these challenges can influence not only their learning, but also their ability to deliver a viable end product to their client. We want to encourage our students to face these challenges among themselves and with the client, rather than avoid them (p. 455).

As the development economist Albert Hirschman (1967) wrote nearly 50 years earlier, "All projects are problem ridden; the only valid distinction appears to be between those that are more or less successful in overcoming their troubles and those that are not" (p. 27).

Campbell and Lambright (2011) take these reflections a step further and analyze the specific factors that "influence the extent to which [clients] benefit from their capstone experience" during an MPA Capstone program at Binghamton University (p. 62). While designed for the local community rather than international organizations, the project nonetheless provides an informative quantitative analysis of what leads to positive capstone outcomes. The most successful projects focused primarily on the client, involved supervisors in both project design and the final product, and were prioritized by a client organization that clearly understood the course expectations and regularly communicated with the students.

Supervisor engagement and faculty contact were a bellwether of successful, and unsuccessful, projects. Common problems that led supervisors to become less engaged in the project included unclear expectations and definitions of their own roles, and disconnect between faculty members and supervisors (Campbell & Lambright, 2011, p. 19). Interestingly, Campbell and Lambright conclude that the "caliber of the process," not the students, is the best indicator of project success. They state, "[T]he value of capstone projects…depends more on the project process…than on the attributes of the students" (p. 79). Careful analysis of these capstone experiences provides an opportunity to explore ways to improve the "caliber of the process."

Negotiations Analysis Can Improve the "Caliber of the Process"

Enhancing the "caliber of the process" requires effective communications and negotiations at multiple levels. Faculty and students attentive to these multiple levels and effective at negotiating them will more likely produce a successful project. For example, students working to understand a client's interests, to shape possible paths that respond to those interests, and to elicit feedback on the best path forward can all influence a client's expectations and further engage a client in the process.

A number of client-based graduate courses cite the importance of the negotiation between student and client. Georgetown University's Human Development Program notes the "student's responsibility…to work with the client…and negotiate the terms of reference" are essential ("Global Human Development," 2014). The University of Illinois at Chicago's Urban and Public Affairs Program asks all teams "to develop and negotiate a scope of work agreement with the capstone client organization" ("University of Illinois," 2015). The Master's in Public Policy Capstone at George Washington University's Trachtenberg School requires students to work with "professors/advisors to negotiate appropriate client expectations" (Adams & Brooks, 2014). Finally, the client-based capstone at New York University's Wagner School of Public Service states, "All teams will develop and negotiate a scope-of-work agreement with their client once their proposal has been selected" (NYU Wagner Capstone Proposal Guidelines, 2016, p. 5).

Although negotiations are often referred to as an important part of the capstone, rarely is there an explicit focus on the multiple negotiated relationships, nor explicit suggestions for how effective negotiations might contribute to a successful outcome. What follows are strategies and tactics to make more effective the five domains of negotiations one will encounter during the capstone experience: instructor with the client, instructor with students, students with the client, students with others who are not the clients, and students with their teammates.

1)   Negotiations – Instructor with Client

The instructor (or a university administrator) typically has the first contact with the potential client, establishing a relationship, framing the opportunity, and eliciting from the client an outline of a proposal. The proposal includes some background on the problem or opportunity and first steps for getting more information.

This interaction between instructor and client is a critical first negotiation that sets the tone, expectations, and timing of the project. This negotiation helps clients understand what the capstone project is (an opportunity for systematic research and new thinking on a problem or opportunity with a concrete deliverable) and what it is not (an internship where students respond to whatever needs to be done at any particular moment). In my class, the fact that in a couple of cases the clients were former students who had experienced the capstone project themselves made this negotiation significantly easier.

Asking the client to answer three questions is particularly helpful to establish guidelines for what a successful project looks like:

a) Is there an important problem or opportunity that, in the day-to-day operations, there is not the necessary time and/or bandwidth to research and examine systematically?

A good potential client recognizes that there is more experience out there than they have accessed, and that a careful, systematic analysis of that information could helpfully inform some future decision.

b) Is there at least one person in the organization sufficiently interested in the problem to spend the time and energy to assist students to produce a good product?

While getting buy-in from senior leadership in the organization is important, the likelihood of success diminishes significantly unless there is a point person committed to interact with the students. (Over the semester there may well be multiple levels of negotiations within the client organization, including between the leadership level and the point person interacting with the student team.)

c) Is there a clear deliverable that the client hopes to see at the end of the semester?

Clients that have a clearly defined deliverable, acknowledging that it may well evolve over the semester, will more likely have a successful experience. Ideally, the client is able to define "what success looks like at the end of the project."

It is important to establish a timeline and a mutually agreed upon framework to guide the process. To avoid the natural tendency to only communicate at the beginning and end of the project, the client point person should commit to a regular communication schedule with the student team. (In the case of my class this is every few weeks—or a minimum of four times during the semester.)

Further, when negotiating a set of realistic expectations, clients need to recognize that it is difficult for undergraduate students halfway around the world to tell an international development organization what to do. The gap in relevant experience, expertise, and local knowledge is enormous. That said, it is quite reasonable to expect a group of motivated student researchers to explore the relevant literature, determine best practices, interview other organizations, provide insights, and explore potential pathways to a solution.

BRAC, one of the largest and most sophisticated development organizations in the world, brings together the poorest people in the poorest countries to learn how to read, think for themselves, pool their resources, and start their own businesses. Originally founded in Bangladesh, BRAC has an entire program devoted to empowering people with disabilities. However, the organization lacked its own internal policy for hiring or accommodating people with disabilities. BRAC has been a client since 2012, and it sought input to create new internal employment policies for hiring people with disabilities. It was not realistic to expect a student team to develop these polices for BRAC, but the client and instructor encouraged students to identify organizations that responded to similar challenges in creative and effective ways. Drawing lessons from "best practices" ranging from an international organization to a center for disabilities in Bangladesh to a technology firm in India proved useful to BRAC. As the BRAC representative wrote in the final evaluation, "They were able to accurately assess the nature and state of BRAC's current work and focus on both analyzing and helping us learn about other organizations (both Bangladeshi and international) whom BRAC can learn from, partner with, and hire/ask for expert assistance."

In the negotiation with instructor and client, there needs to be an ability to define a concrete product desired: "what success looks like." If the client cannot define what value he or she hopes to achieve at the end of the process, it is best not to engage that client. In my experience, the least successful projects have been those in which the project was considered a favor to the instructor or an attempt to "help" a group of students. The more clearly the client defines something they really want done, the more likely the capstone will be successful.

2) Negotiations – Instructor with Students

A second domain is when the instructor and students negotiate expectations. I explicitly try to build my courses around the idea of having students think like creative and effective international development professionals. We explore ideas from disciplines such as economics, political science, sociology, law, global health, and anthropology, as well as the means by which rigorous studies from those disciplines contribute to what real-world professionals do to confront complex development problems.

"Just as if you were a professional at a job, I expect you to come to every class prepared and ready to work," the syllabus states. I reinforce these expectations the first day of class, especially in relation to the capstone. I tell students:

> Most of these DAT clients are professional relationships I have developed over many years and that I value deeply. You need to be prepared to work for these clients as part of a high functioning team and demonstrate how you can contribute to an important problem. Your very first

communication with your client is a negotiation. At the end of that conversation, does your client think 'OK, I'm going to try to help this group of students,' or, 'Wow, these students may really create something of value for me?' The foundation for success of your project is built on that first negotiation – and there are important ways you can prepare for that first negotiation by being well informed about the organization and the issues it faces before your first discussion.

Students learn a fundamental aspect of the negotiation dynamic: their instructor's interest to maintain a good working relationship with the client for personal and institutional reasons.

At the beginning of the semester, students receive information on all the projects (typically 7–10 each semester for a class of 40 students). These one-page documents on each project provide a brief background on the organizations, definition of the problem, first steps, and "what success looks like."

Students then "bid" on at least three projects, explaining in writing their interests and what skills they might bring to the project. I tell students they are negotiating with me; the more effective they make the case for their first choice, the more likely they will be successful. Given the range of interests and projects, I can almost always place students in one of their three top choices. Teams are generally three to five students each—large enough to have some diversity of skills and backgrounds, but small enough to be manageable.

I am clear that the DAT is a major part of the grade for the class, with students' grades primarily based on three factors: the client's evaluation of how well students have met the clients' interests, a peer evaluation from their team members, and a self-evaluation. I conduct peer and self-evaluations at a mid-point in the semester and again at the end of the semester. Students score each other's contributions on a 1–10 scale, as well as provide a brief narrative, based on how effectively their peers contributed to their project. They then score themselves on the same scale. The only requirement is that they cannot give everyone on the team the same score.

Once students are assigned a team, they need to learn quickly as much as they can about the organization and issue before their first communication with their client. Typically, there is a ten-day period between group formation and initial client contact. Learning from previous years, I now recommend that students get together over a meal or other informal setting to discover each other's interests, strengths, and motivations before launching into the project. Preparation is key to a successful project, and I encourage students not to contact the client until their Development Advisory Team is well prepared.

Throughout the semester I remain engaged with the student teams, serving as a resource and sounding board as they engage with their key negotiation partner: their client.

3) Negotiations – Students with Client

Students understand that the client relationship is their primary focus and central negotiation. Students need to do their homework on the organization and on issues before the first client interaction: What is the context? What does academic literature say? Who else is working in the field? How is the client likely to see these issues? Why did the client likely frame the issue statement the way they did?

Prior to their first interaction with the client, students also produce a "Development Advisory Team Consulting Brochure" for the client. The brochure includes relevant information and a photo of each student on the team, highlighting any relevant background or skills, such as language and quantitative skills, or experience in the field.

What follows is my co-author's experience with, frustrations about, and insights from the capstone experience as a student in the class, especially related to the negotiations with his client:

> Our three-member Development Advisory Team worked with the Education Division of a large development organization in Latin America that sought help in developing a new communication strategy. The most difficult aspect was determining what problem to tackle. Although the client had defined a specific opportunity—"how to most effectively communicate to audiences in Latin America about our work"—there were dozens of different paths one could take. In nearly all previous college projects, the professor defined a question for the student to answer. However, this project required one to first articulate the question before answering it. If the project's scope was too narrow, one might not be able to meet the client's overarching interests. Meanwhile, a project too broad and ambitious would be unmanageable.

It proved deceptively difficult to negotiate the project's scope. In opening negotiations with the client, the team was pleased to narrow the problem scope to communication with just one audience: policymakers. Thinking the scope was sufficiently narrow, the team soon realized how many questions remained: Would the team evaluate communication strategies for policymakers in all of the client's twenty-six countries, which ranged from Haiti to Chile? Should the team focus on low, medium or high budget interventions? Finally, and since the audience "policymakers" is in itself a broadly defined group that includes Ministry of

Education officials, lawmakers and many others, which policymakers did the team want to target? After the second Skype meeting, the team thought it had identified an appropriate scope: evaluating a low, medium, and high-budget communication strategy to reach policymakers. Unfortunately, due in part to both naiveté and the client's perception of the time the team could devote to the project, the project "question" still proved too large to fully answer.

A central insight for students is to understand that they can, in fact, influence the "caliber of the process." They are not merely passive actors, receiving a fixed script that defines a problem at the beginning of the semester with the hope to present an acceptable answer to their client at the end of the semester.

Student teams need to view the clients' initial definition of the problem and proposed outcome as something evolving rather than fixed. Even with a clearly defined problem statement, students must nonetheless probe the client for additional information from an early stage that will shape the most useful product for the client.

In the student-client negotiation, students must learn when to listen and when to direct the conversation. I encourage them to probe the client to get a better sense of why the client has proposed a particular project and scope, and as time goes on, seek guidance on potential paths forward. Students typically specialize as they delve deeper into the project, becoming "experts" in a given area of the project. Students simultaneously negotiate with team members what information to emphasize and share with the client, as well as define possible paths forward. As students wade deeper into the project, they should recognize that they will likely know more about specific areas (particularly of comparative case studies in other countries) than their client. Students need to frame conversations not simply to share information with the client, but to explicitly propose helpful ways to narrow the scope, pull out the most salient information, explore different paths, and identify the most helpful recommendations and paths forward.

Questions emerge as students better understand the clients' interests: is the purpose primarily to find evidence to support and justify an already considered path, to refine an existing process, or to explore entirely new areas? Effective communication here is key. Recognizing that students cannot do everything, they need to identify specific areas of greatest interest to the client and focus on those.

A further issue for students is to understand the interests behind the stated position of their client. Enseña Chile, the Chilean version of Teach for America, is a DAT client that has had a consistently positive interaction working with the student team, in good part because both the client and student teams are effective in defining clear objectives. The client originally asked the student team to explore tools for more effective teaching; the student team usefully narrowed the scope to identify best practices for giving constructive feedback to new teachers.

The client ultimately implemented the recommendations for a number of reasons: "The project addressed a concrete need we had at the time," said the Enseña Chile representative. "The student team focused on quality information about what had worked at other organizations and what empirical research suggested in ways that were very practical and applicable to our situation in Chile."

"I think a huge lesson for us was in negotiating the scope of the work and clarifying objectives," wrote one DAT member who later worked for his client Enseña Chile for six months before accepting a position with the Bridgespan Group, the non-profit arm of Bain Consulting. "Those early negotiations were tremendously important for us in ultimately creating something of value for the client." Furthermore, he concluded, "My DAT experience and the lessons from negotiating with Enseña Chile played essential roles in my application and interview with Bridgespan."

It is useful to have a formal expectation that students and clients will negotiate and refine the problem scope. Client and student teams commit to communicate on a regular schedule, including a mid-semester presentation of key ideas and feedback on possible paths, providing a safety net to ensure students do not stray from the client's primary interests. For a client, with project timelines extending, for example in the fall semester, from September to December, having students present an initial draft in mid-October leads to fewer surprises in December. The best teams are proactive, clear, and explicit when communicating their assumptions and plans.

4) Negotiations – Students with Others Who Are Not the Client

To be of real service to the client, students typically need to uncover information from actors who are not the client. In the case of BRAC, the student team found general information about other organizations but needed to dig deeper into how these policies were conceptualized and implemented. To get this information, they needed to identify and contact specific individuals who had worked on similar initiatives on disabilities in India and around the globe. To their delight, once they identified the right individuals, those people were only too happy to share their experiences, both good and bad. It takes work to get to the right people, but finding someone who knows the topic first-hand within another organization can be a game-changer.

However, very often the first person that students reach within a comparative organization is not the "game-changer." Students therefore need to persuade others to help them get to the right person. Engaging actors who have no existing relationship with the client or project can be challenging, which makes it is useful to frame this challenge as a negotiation.

There are different ways a student team might frame their request in reaching out for more information. One framing is, "I am a student at the University of Notre Dame and I am hoping you can help me on my student project." A second framing is something like, "We are doing consulting work through the University of Notre Dame for organization X and were fascinated to learn of your work on Y that we believe will be of real relevance because…." The latter is a more promising approach to craft their inquiries. Making a personal link to someone in the organization can also go a long way. As a student in the middle of northern Indiana, how does one even begin to get personal contacts in a foreign country?

Students have access to wide networks of university alumni, professors, and graduate students from their countries of interest, as well as past students from the class who can often be quite helpful in identifying appropriate contacts. Again, the more effective and clear the student team is in framing what they are looking for, the more successful they are likely to be.

5) Negotiations – Students with Students

Among all the different negotiation domains, students often overlook the complexities of communication and negotiation within their own team. Some students hold explicit discussions around a process to prioritize, determine and negotiate roles, and better understand interests (their own and others). Others do this much less successfully.

I try to address the free rider problem, in which some team members coast on the contributions of others, in an explicit manner. The first essay in the course requires students to examine one dimension of their project that will likely move their collective efforts forward. For example, a team may identify four different organizations in different parts of the world dealing with a similar challenge, and each team member prepares a case study on one organization. They share and read their teammates' papers and are then asked to evaluate their own paper and those of their teammates. What was the contribution of others? How did they rate their own contribution?

As the instructor I try to create structured time for feedback loops and reflection. Workshop-type environments in which student teams share thorny problems and obstacles create an opportunity for collective problem solving and continuous learning. The self-evaluations allow students to reflect on how the project changed the ways they learn, as well as how to approach ill-defined problems and respond to setbacks. Group evaluations help to determine what makes for an effective group: Did the team choose explicit roles? Was there a culture of collaboration and clarity of responsibilities? My co-author reflects on his team's group dynamics and negotiations:

On the final day, the class reflected on lessons learned and what each group wished it had known from the beginning. Most striking, one student commented that his teammates spoke freely about the client—including what they liked and what frustrated them—but struggled to give feedback to one another. "It's much easier to talk about the client, but it's difficult to address internal behaviors to make the group more effective," another reflected.

We learned the most about our teammates toward the end of the project, when it was too late. Each member brought a completely different style and skillset to the table, with family backgrounds from three different countries. By establishing greater clarity from the outset on each other's skills and preferences, the team could have adjusted individual roles and group dynamics to help each member best contribute to the whole.

One student remarked that his group members organized a team dinner at the dining hall before starting the project. It was a small act to get to know one another as individuals rather than as co-workers, establishing a personal relationship before a professional relationship. The dinner, he said, had long-lasting effects, making everyone more open to express differences and less afraid to provide constructive feedback. In our case, asking questions such as "Why did you want to be a member of this team?" or "What particular skills do you think you bring to the team?" could have improved delegation of roles and responsibilities, and even the group's direction. Instead, the group became too swept up in the project and forgot to consider the process.

The more students are aware of the role that communication and negotiations play within their team, the more successful they are likely to be.

Conclusions

Client-based capstone projects provide students an opportunity to engage with peers in experiential learning while attempting to help define and contribute to a client's real-world problem. However, students

express that working with a team of students to address the needs of a real client with a complex problem raises a series of challenges. These include a mismatch of expectations between students and clients, gaps in information, misunderstandings, and frustrations in the process of working together. Helping students understand that they can thoughtfully shape and negotiate the "caliber of the process" is a critical shift in the ways they might typically approach both the problem and the process. Reframing the capstone project as a "negotiation in multiple domains" rather than a "fixed problem to be solved" can provide significant benefits for the student, the client, and the learning process.

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