International Journal of

Teaching & Learning

in Higher Education
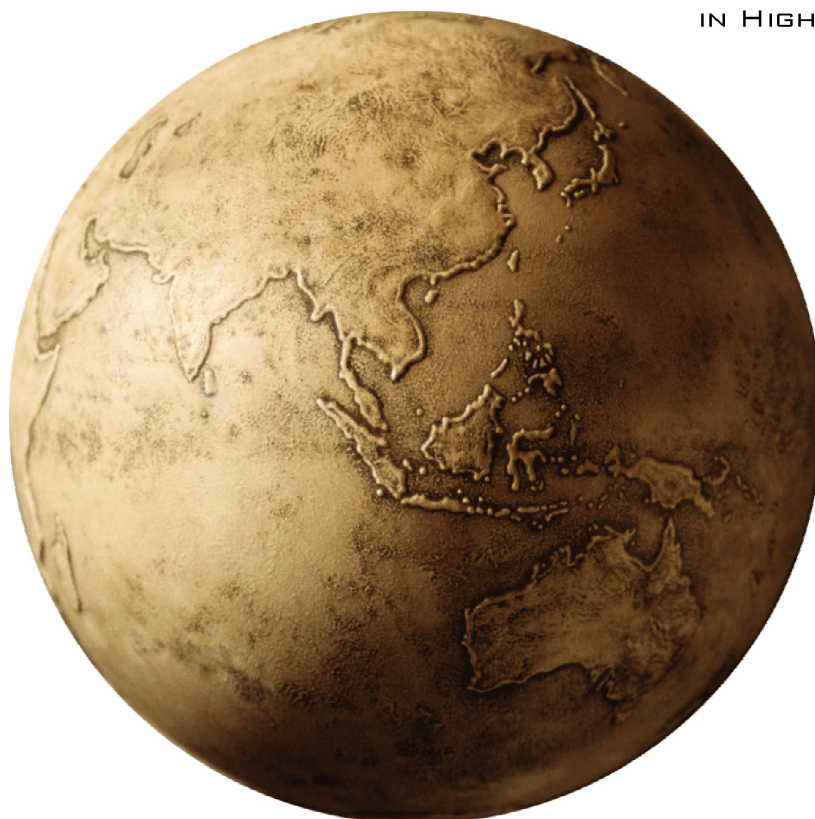
The University of Georgia

Center for Teaching and Learning

International Society for
Exploring Teaching and Learning

Carl Young, *North Carolina State University, USA*
Sarah Zenti, *University of Georgia, USA*
Anne Marie Zimeri, *University of Georgia, USA*

———————————————————————————————

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

Exploring the Relationship Between Student Engagement, Twitter, and a Learning Management System: A Study of Undergraduate Marketing Students

David Williams
Dalton State College

Anita Whiting
Clayton State University

Because student engagement is believed to be a predictor of academic achievement, there is significant interest in discovering methods that will improve and increase student engagement at all levels of education. This study investigated the relationship between digital and social media usage and student engagement. In particular, this study sought to investigate how adding (1) a learning management system (LMS) and (2) a dedicated marketing Twitter feed influenced the self-reported engagement levels of undergraduate marketing students. The results show that students were more engaged when the LMS and Twitter feed were used. Specifically, Twitter usage had a positive impact on engagement with a marketing course while LMS usage had a positive impact on engagement with the School of Business. Seniors significantly used the LMS more than underclassmen but there were no differences in Twitter usage between these groups. The results also showed that students were most engaged with their marketing course, followed by the College, and the School of Business respectively.

Introduction

Digital and social media are increasingly important topics for marketers. For example, more than three quarters of marketing practitioners report that they regularly use social media in their work (Gil-Or, 2010; Smith, 2011). Organizations are seeing solid return on investments from making contact with the customer via social media (Okazaki, Katsukura, & Nishiyama, 2007). Despite the widespread usage of digital and social media marketing among marketing practitioners, there is little usage of digital and social media within the marketing classroom (Finch, Nadeau, & O'Reilly, 2013).

This study sought to explore how educators might close this usage gap by exploring how digital and social media tools can be applied to the marketing classroom. In particular, this study incorporated a (1) Twitter feed and a (2) Learning Management System and assessed the possible relationship with self- reported student engagement levels. This study also sought to provide insights and information about adoption and usage of these tools, to assess student engagement on multiple levels, and to evaluate differences among different student populations.

We begin by describing student engagement, Twitter, and learning management systems. Next the article discusses the research method, followed by the data analysis and findings. Last, the article discusses the conclusions of the study and provides recommendations for using Twitter and a LMS to improve and increase student engagement.

Student Engagement

Alexander Astin wrote perhaps the seminal piece on student engagement which he originally termed "involvement." He defined the concept as "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p. 518).

Astin provides some specific forms of involvement that include where the student lives, the amount of time a student spends studying, student interaction with faculty, and athletic involvement. The conceptualization of student engagement has been researched and undergone modification and refinement since 1984. Engagement remains a somewhat ambiguous term, without a uniformly accepted definition within the literature. However, commonalities exist among the different conceptualizations. An engaged student has been described as one who makes a psychological investment in learning and strives to learn (Newmann, 1992). Additionally, Kuh (2009) states that engagement can be described as the time and effort students invest in educational activities that are empirically linked to desired college outcomes. Furthermore, McCormick, Kinzie and Gonyea (2013) posit that student engagement could be described as a student's exposure to, and participation in, effective educational practices in use throughout their college experience.

Research over the last 30 years has shown positive associations between engagement and desired college outcomes (Kuh, 2009). More specifically, research has discovered relationships between technology use and engagement (Junco, Heiberger, & Loken, 2011). Because researchers have shown that student engagement can be a predictor of academic achievement, there is significant interest in discovering methods that will improve and increase student engagement at all levels of education (Marks, 2000). Getting students more involved in a course has been reported as one method to improve the level of student engagement (Handelsman, Briggs, Sullivan, & Towler, 2005).

In recent years higher education has experienced a notable shift away from "teaching as instruction" towards "student centered learning" (Jonassen, 1994; Trowler, 2010). The explosion of web-based technology has created new platforms that have helped to fuel this shift away from the instructor as the sole knowledge delivery mechanism toward a more collaborative model that allows students to contribute, create, and distribute knowledge (Cole, 2009). These activities can take place both in class and while the students are away from the classroom, thus creating a learning community that is not completely dependent on the instructor. One platform that can facilitate this around the clock active learning is the popular microblogging platform Twitter.

Twitter

Twitter is a microblogging social media platform. It is similar to text messaging but each message is limited to 140 characters. Twitter users can follow other Twitter accounts and can also allow their accounts to be followed by other Twitter accounts, thus providing quick and easy interaction among message generators and their followers. Even with the limitation of 140 characters, tweets can contain URLs that link to articles, graphs, pictures, videos, etc. In a college-level class this substantially increases the usefulness of the Twitter platform. Within a short message, a professor can direct students to additional material that may enrich the course, remind students about upcoming projects, or invite students to share their opinions about a topic that is salient to the course(s).

Pew Internet Research indicated that in 2012, 26% of internet users aged 18-29 used Twitter, which was almost two times the rate for those age 30-49. Among younger internet users (age 18-24), 31% were Twitter users (http://www.pewinternet.org/2012/05/31/twitter-use-2012/). A 2013 Pew Internet Research survey found that Twitter still had a particular appeal to younger adults (http://www.pewinternet.org/2013/12/30/social-media-update-2013). These younger adults, also known as Millennials, have been immersed in technology since elementary school and are often referred to as "Digital Natives" (Palfrey & Gasser, 2013). They have a desire to form communities that are active with discussions and information, thus they gravitate to web based platforms where this occurs (Williams, Crittenden, Keo, & McCarty, 2012). Today's college students desire personalized technology, constant synchronized connection, immediate communication, and social interaction (Fructuoso, 2014; Veletsianos & Navarrete, 2012).

Undergraduate college students are commonly already engaged on the Twitter microblogging platform. Therefore, Twitter seemed a prime candidate to explore with respect to the relationship it might have with student engagement with the course, the school, and the college. Furthermore, Twitter is an emerging tool of businesses and marketers. Many firms maintain Twitter accounts and incorporate these accounts into their marketing efforts (e.g. @deltaairlines, @WholeFoods, @Target). Therefore, Twitter can be used to improve and enhance marketing education by demonstrating emerging marketing practices and how firms are using new technology to further their tactical and strategic marketing plans (Hannon & D'Netto, 2007). Thus, Twitter is frequently viewed as an emerging ICT (Information and Communication Technology) in higher education (Fructuoso, 2014; Junco et al., 2011).

Learning Management Systems

Learning Management System(s) (LMSs) have been adopted by many universities around the world (OBHE, 2002). Within the United States, over eighty percent of colleges and universities use a learning management system (Harrington, Gordon & Schibik, 2004). Usage of LMSs is expected to increase as universities try to accommodate today's students who expect a technologically rich learning environment (Lowry & Flohr, 2004). A LMS can be defined as an enterprise-wide and internet-based system that integrates a wide range of pedagogical and course administration tools (Coates, James, & Baldwin 2005). Some examples of LMSs are Blackboard, Moodle, Desire2Learn, Learning Space, and Next Ed.

LMSs are designed to provide a medium where faculty and students can communicate. Most LMSs include communication tools, course content tools, student assessment tools, and a gradebook tool (Costen, 2009; Morgan, 2003). The course content tool allows faculty to upload documents such as syllabi, assignments, and readings. The communication tool allows faculty to communicate with students and students to communicate with other students. The typical communication tools include email, discussion boards, and chat rooms. The student assessment tools allow faculty to administer quizzes and exams to students using any computer. The assessment tool also allows faculty to grade assignments and provide written feedback to students. The gradebook tool allows faculty to post grades for exams, assignments, and activities. With this tool, students are aware of their grades in real time.

Usage of a LMS and its tools can provide many benefits to both students and faculty. First, LMSs provide access to course materials and assist in creating a virtual learning environment for both online and traditional courses (Hershey & Wood, 2011). Second, LMSs make it easier to disseminate information and communicate with students (Harrington et al., 2004). Many college professors use their school's LMS to

distribute documents, issue assignments, and assign students to groups as well as other administrative tasks. Third, LMSs can facilitate asynchronous collaboration among students (Hershey & Wood, 2011). Via LMSs students can meet online and interact with other students. Fourth, LMSs can provide a permanent record of student grades and graded activities and/or assignments. Students can assess their overall performance in the course at any time. Last, LMSs can help students feel more satisfied with a course because their expectations about computers and technology are being met (Green & Gilbert, 1995). Because of an "information age mindset" many traditional students have an expectation that advanced technologies will be used in the classroom (Frand, 2000).

In addition to the capabilities and benefits of LMSs, research has shown that LMS directly impact student outcomes. Research studies on LMSs have shown that they increase student involvement (Stith, 2000) and deepen the learning experience (Carmean & Haefner, 2002). Research has also shown that LMSs improve teaching and learning (Coates et al., 2005). Other studies on LMSs have shown that LMSs enrich student learning (Gillani, 2000) and help students develop a sense of community with other learners (Al-Busaidi, 2012). Overall, the effects of LMS usage are very beneficial to the student.

Because of the many benefits discussed previously and because of the widespread adoption of LMSs among many universities around the world, we chose to explore the relationship between a LMS and Twitter with respect to the relationship they might have with student engagement with the course, the School, and the College. Research on the pedagogical effects of LMSs is somewhat limited, and this study seeks to fill this gap within the literature (Coates et al., 2005).

Purpose of the Study

Prior research has demonstrated a robust linkage between student engagement and student success (Kuh, 2009; Pascarella, Terenzini, & Feldman, 2005). Additionally, the proliferation of Web 2.0 social media platforms and mobile devices with internet connectivity have made today's college students more connected than ever before (Fructuoso, 2014). It seems prudent then that scholars and teachers who are interested in student success investigate, from the student's perspective, how these phenomena may interrelate. Furthermore, due to the rapid growth of business spending on the social media component of the marketing mix, it seems imperative that social media use and participation find their way into today's college classrooms (De Vries, Gensler, & Leeflang, 2012).

The intent of this research was to explore the following questions.

1. *Usage of Twitter*: What percentage of students followed the class Twitter feed? How many were frequent users of the dedicated Twitter feed? Are there differences in Twitter usage among different types of students?
2. *Usage of LMS*: What percentage of students used the class LMS? How many were frequent users of the class LMS? Are there differences in LMS usage among different types of students?
3. *Student Engagement*: How engaged were students with the marketing course, the School of Business, and the College? Are there differences in student engagement among different types of students?
4. *Relationship between Twitter and the LMS with student engagement*: Is there a relationship between Twitter and/or LMS usage and student engagement? Does Twitter usage have a stronger relationship with student engagement than LMS usage, or does LMS usage have a stronger relationship with student engagement than Twitter usage? Were students more engaged if they used both Twitter and the LMS?

Method

Three marketing courses at a small southeastern college were utilized for this study. No student was in more than one section, so there were no duplicate research instruments submitted. During the first class of the semester, after a course introduction and a review of the syllabus, the students were informed that the professor would be an active user of the LMS constructed for the course, including the gradebook module. Students were encouraged to visit and explore the LMS site before contacting the professor with any questions. The students were then informed that a Twitter feed had been created for all of the instructor's classes, and the Twitter handle was written on a dry erase board in front of the students. The students were told that participation and interaction with the Twitter feed was voluntary and that all official communication would also be communicated via the campus email system. The Twitter handle remained on the board for the rest of the class (approximately forty five minutes) and was erased at the end of the class session. This procedure was repeated in all three marketing classes on the first day.

During the semester, the instructor actively used Twitter and generated 587 tweets. The instructor tweeted about the following items: (1) marketing in general, such as tweets about the most popular ads of the week or a retailer's latest online marketing strategy; (2) student-related tweets such as congratulations to

students about awards or sports victories; (3) business such as the latest unemployment figures and closing stock market numbers; (4) college related tweets such as upcoming campus activities, campus photos, and weather announcements; (5) marketing tweets specifically related to current course content, such as pictures of store brands while branding was being discussed in class, as well as reminders about upcoming exams and grades posted; (6) and career information and advice such as job postings and resume tips.

During the semester, the instructor also actively used the LMS in each marketing class. The instructor actively updated the content, posted unannounced bonus opportunities, and shared job postings. The instructor also posted visuals and lecture materials in a timely manner. The LMS gradebook was used throughout the semester so students could see their current grades. The instructor also tried to direct students to the LMS via email and via the Twitter feed with announcements about upcoming readings, access to recent exam scores, and other course related items that were available on the LMS. The instructor tried to make the LMS as active, useful, and accessible as possible given the constraints of the college and the LMS platform.

On the last day of scheduled class, the research instrument (see Appendix) was distributed and collected by a student assistant. The survey consisted of demographic questions and questions about (1) usage of the course LMS and Twitter feed and (2) about what could be done to increase or improve their level of engagement in any course. The survey also asked students to read a description of engagement provided by the researchers (see Appendix) and then indicate their engagement with respect to (1) the College, (2) the School of Business, and (3) the marketing course that the student was about to complete. A total of 54 surveys were completed.

Data Analysis and Results

The Statistical Package for the Social Sciences (SPSS) was used to assess the research questions. Tables 1, 2, 3, 4, and 5 provide the results of the statistical analyses. Table 1 provides the means and standard deviations for variables in the study. Table 2 provides the results from the t-tests. Tables 3, 4, and 5 provide the results of the regression equations. See Tables 1-5 on the following pages.

Usage of Learning Management System and Twitter

We began our data analysis by examining the reported usage of the Learning Management System (LMS) and Twitter feed. One hundred percent of the students reported that they used the LMS. The mean usage of the LMS was reported to be 5.54 on a 7 point scale (never = 1 to very frequently = 7). Eighty-nine percent of the students reported being frequent users of the LMS where frequent users were categorized as those who rated their usage as a 5, 6, or 7 on the 7 point scale. Almost half of the student sample (46%) reported that they had used or interacted, on some level, with the course Twitter account. The mean participation level with the Twitter feed was 2.57 on a 7 point scale (never = 1 to very frequently = 7). Of those who said they were Twitter participants, 29.7 % indicated that they were high or frequent users of the Twitter feed.

Next we assessed differences among student groups and their reported usage of the LMS and interaction with the Twitter feed. The first variable investigated was student classification. A t-test was conducted among seniors and underclassmen (non-seniors) and their usage of the LMS. The mean usage of the LMS for seniors was 6.20 while the mean usage of the LMS for underclassmen was 5.30 (never = 1 to very frequently = 7). These means were significantly different at the .03 level. These results indicate that seniors used the LMS system more frequently than did the underclassmen. Another t-test was conducted among seniors and underclassmen and their interaction with the Twitter feed. The mean Twitter interaction for seniors was 2.53, and the mean usage of Twitter for underclassmen was 2.59 (never = 1 to very frequently = 7). These means were not significantly different at the .05 level and thus indicate no significant difference between seniors and underclassmen with respect to their reported level of Twitter interaction. Overall, these results show that there were differences between seniors and underclassmen and their usage of the LMS with seniors reporting that they used the LMS system more than underclassmen. However, there were no significant differences between seniors and underclassmen in their reported interaction with the Twitter feed.

We also assessed differences among student athletes and non-athletes and their usage of the LMS and Twitter. T-tests were conducted among athletes and non-athletes and their reported level of usage of the LMS and interaction with the Twitter feed. The results show that the mean LMS usage for athletes was 5.65, and the mean LMS usage for non-athletes was 5.09 (never = 1 to very frequently = 7). These means were not significantly different at the .05 level and thus there was no significant difference in the LMS usage among athletes and non-athletes. For Twitter usage, the mean reported level was 3.0 for athletes and 2.5 for non-athletes (never = 1 to very frequently = 7). However, these means were not significantly different. Overall, there were no significant differences in the student sample between athletes and non-athletes and their reported level of LMS usage and Twitter interaction.

Table 1
Means Table

Variable	Mean	SD	N
LMS Usage	5.54	1.41	54
Twitter Interaction	2.51	2.05	54
Engagement with Course	5.31	.93	54
Engagement with School of Business	4.37	1.55	54
Engagement with College	4.98	1.28	54

Table 2
T-Tests

Source	Dependent Variable	T Value	df	Sig.
Classification	LMS Usage	-2.20	52	.00
	Twitter Interaction	0.09	52	.93
	Engagement With Course	-1.08	52	.29
	Engagement with School of Business	-2.57	52	.01
	Engagement with College	-0.30	52	.77
Athlete	LMS Usage	1.18	52	.24
	Twitter Interaction	-0.77	52	.45
	Engagement with Course	-0.19	52	.85
	Engagement with School of Business	0.23	52	.82
	Engagement with College	0.23	52	.32

Table 3
Regression Analysis on Engagement with Course

Variable	Standardized Beta Coefficient	Sig.	Conclusion
LMS Usage	0.09	.48	No Relationship
Twitter Interaction	0.42	.00	Positive Relationship
Adusted R Square	0.135		
F Value	5.12	.00	

Note. Dependent variable: Engagement with Course

Student Engagement

Student engagement is a point of emphasis at many colleges and universities. Therefore, engagement was assessed in three different ways. Student engagement was assessed with (1) the marketing course, (2) the School of Business, and (3) the College. The first level of analysis was to examine the descriptive statistics for each of the three engagement categories. As seen in Table 1, the mean level of engagement was 5.31 for the marketing course, 4.37 for the School of Business, and 4.98 for the College (1 = not at all engaged to 7 = very engaged). These results indicate that students felt most engaged with their marketing course, then the College, and last with the School of Business.

The next level of analysis investigated whether the reported levels of engagement were significantly above 4 (the scale point indicating neutrality or indifference). We conducted one-sample t-tests to determine the significance of the reported levels of engagement with the course, the School of Business, and the College. The results showed that engagement with the course and engagement with the College were significantly different from 4 at the .05 level. Engagement with the

Table 4
Regression Analysis on Engagement with School of Business

Variable	Standardized Beta Coefficient	Sig.	Conclusion
LMS Usage	0.35	.00	Positive Relationship
Twitter Interaction	0.02	.90	No Relationship
Adjusted R Square	0.09		
F Value	3.53	.03	

Note. Dependent Variable: Engagement with School of Business

Table 5
Regression Analysis on Engagement with College

Variable	Standardized Beta Coefficient	Sig.	Conclusion
LMS Usage	0.18	.19	No Relationship
Twitter Interaction	0.17	.22	No Relationship
Adjusted R Square	0.04		
F Value	2.05	.14	

Note. Dependent Variable: Engagement with College

School of Business had a significance value of .08. Students reportedly felt significantly engaged with the College and their marketing course, but not with the School of Business.

We also assessed differences among groups and their reported levels of engagement with the marketing course, School of Business, and the College. The first variable investigated was student classification. A t-test was conducted among seniors and underclassmen (non-seniors) and their reported levels of engagement with the marketing course. The mean engagement level with the marketing course was 5.53 for seniors and 5.23 for underclassmen (1 = not at all engaged to 7 = very engaged). These means were not significantly different, indicating little difference in engagement with the marketing course among seniors and underclassmen at the .05 level. Next, engagement with the School of Business was analyzed. A t-test was conducted among seniors and underclassmen and their reported levels of engagement with the School of Business. The mean engagement level for the School of Business was 5.2 for seniors and 4.0 for underclassmen (1 = not at all engaged to 7 = very engaged). These two means were significantly different at the .01 level. Thus, seniors reported that they felt more engaged than did the underclassmen with respect to the School of Business. Last, engagement with the College was analyzed. A t-test was conducted among seniors and underclassmen and their reported levels of engagement with the College. The mean engagement level for the College was 5.07 for seniors and 4.95 for underclassmen (1 = not at all engaged to 7 = very engaged). However, these means were not significantly different at the .05

level. Therefore, we can report no significant differences in the reported level of engagement with the College among seniors and underclassmen.

We also assessed differences among student athletes and non-student athletes and their reported levels of engagement. T-tests were again conducted for engagement with the marketing course, the School of Business, and the College. We found no significant differences among athletes and non-athletes on any of these three levels of engagement.

Relationship of LMS and Twitter with Student Engagement

A primary focus of this study was to assess the relationship of LMS and Twitter usage with student engagement. It was speculated that both LMS and Twitter usage would have a positive relationship with student engagement. Because engagement was measured at three different levels, the following paragraphs will separately discuss the relationship of LMS and Twitter usage with these three levels of engagement.

The first set of analyses sought to assess the relationship between LMS and Twitter usage with the reported levels of engagement with the marketing courses. A regression analysis was conducted using the student's reported levels of LMS and Twitter usage as the independent variables and their reported level of engagement with the marketing course as the dependent variable. The adjusted R^2 was .135, indicating that LMS and Twitter usage explain 13.5 percent of the variance in reported engagement with the marketing

course.   The standardized beta coefficient for LMS usage was -0.093.   However, it was not statistically significant. The standardized beta coefficient for Twitter usage was .42, and it was significant at the .00 level.   The standardized beta coefficient of .42 illustrates that Twitter usage had a positive and significant impact on the reported level of engagement with the marketing course.   Therefore, Twitter usage related positively to students' reported levels of engagement with the marketing course.

The second set of analyses assessed the relationship between LMS and Twitter usage with reported levels of engagement with the School of Business. A regression analysis was conducted using LMS and Twitter usage as the independent variables and student reported engagement level with the School of Business as the dependent variable. The adjusted R^2 for this equation was .087.   The standardized beta coefficient for LMS usage was .35, and it was statistically significant at the .00 level. The significant beta coefficient of .35 demonstrated that usage of the LMS had a significant and positive relationship with the student engagement level as it related to the School of Business. The standardized beta coefficient for Twitter usage was .02.   This finding showed a positive relationship between Twitter usage and student engagement level with the School of Business; however, this coefficient was not significant at the .05 level. Interaction with the Twitter feed did not appear to   significantly   influence   students'   perceived engagement with the School of Business.   Overall, student reported usage of the LMS influenced engagement with the School of Business while Twitter usage did not.

The last set of analyses assessed the relationship between LMS and Twitter usage with engagement with the College. A regression analysis was conducted using LMS and Twitter usage as the independent variables and engagement with the College as the dependent variable. The adjusted R^2 for this equation was .038. The standardized beta coefficient for LMS usage and Twitter usage were .18 and .17 respectively. Both beta coefficients demonstrated a positive relationship with engagement level as it pertained to the College, but neither of these beta coefficients was statistically significant at the .05 level. Overall LMS and Twitter usage did not appear to significantly affect students' reported engagement with the College.

Conclusions

This study was conducted in order to gain further insights into how digital and social media might influence student's reported levels of engagement. In particular, this study sought to study how LMS usage and interaction with a dedicated Twitter feed might influence student engagement levels with a marketing course, with the School of Business, and with the College. The results of this study show that students reported that they felt more engaged when the LMS was used and when the Twitter feed was used. Specifically, Twitter usage had a positive relationship with student engagement perceptions at the marketing course level while LMS usage had a positive relationship with student engagement perceptions at the School of Business level. Usage of the LMS, at some level, was reported to be 100 percent. Nearly half (46%) of the student sample reported some interaction with the Twitter feed. Seniors reported that they used the LMS significantly more than underclassmen while there was no significant difference in Twitter usage between these groups.   The results also showed that students reported that they felt most engaged with their marketing course, followed by the College and the School of Business respectively.   There were no significant differences in engagement levels with the marketing course among seniors and underclassmen, but there were differences between these groups and their levels of engagement with the School of Business. Seniors felt more engaged with the School of Business than did underclassmen. There were no significant differences between athletes and non-athletes on any of the three types of engagement.

Extant research has shown that student engagement is a major predictor of student success, and thus colleges and universities are searching for new and innovative ways to get their students more involved, connected, and engaged. This study provides insights on how Twitter and LMS usage might be incorporated in a college setting in order to positively influence student engagement with a course, a school, and a college.

Suggestions for Using a LMS and Twitter feed in the Classroom

The major findings of the study provide additional insights on how to better use Twitter and a LMS and how these platforms may improve student engagement. Additionally, the research instrument included an open ended question asking the students to provide one thing that they felt would increase or improve their level of engagement. Using these student ideas and comments along with the quantitative analysis previously outlined, we would like to offer some suggestions for colleagues exploring the use—or expanded use—of social media and digital platforms in their college courses.

1. *Consider using or expanding the use of social media in courses*. Many of the students voluntarily followed and interacted with the Twitter feed. They were told at the outset that other forms of communication would be used

Table 6
Categorized Tweet Content – Instructor Generated

Subject	Percentage of Tweets
Marketing (General)	21
Student Related	18
Business (General)	15
College Related	12
News/Sports General	12
Marketing (Course Related)	11
Marketing (Course Admin)	4
Marketing (Research)	4
Career	3

for official communication. A major finding of this study was that Twitter usage did significantly influence engagement levels, so professors might consider at least trying some type of social media in their courses.

2. *Schools and colleges could consider using social media to promote engagement and possibly improve retention of students*. Social media is relatively inexpensive to use and can be an effective way to stay connected with students. Several of the students in this study wanted the School of Business to create a Twitter account that they could follow. Frequently, colleges will allow graduates to keep their school email accounts in the hopes that it will improve their connectivity with them once they leave campus. Social media may be a better option.

3. *Use the LMS more*. Several students stated that they wanted more widespread usage of the LMS across their classes with many of these students stating that they wanted all of their professors to use the LMS. Increased usage of the LMS was the most frequent suggestion mentioned by the student respondents.

4. *Provide variety when using social media platforms such as Twitter*. This study provided many different types of tweets such as tweets on marketing, business, news/sports, course info, and career. Individuals, being multifarious, like and respond to different things, so a variety of tweets and topics can provide opportunities for all students to engage, interact, and connect with the class. See Table 6 for the list of subjects that were tweeted about in this study.

5. *Use the grade book function of the LMS*. According to student responses, this was the most important function or aspect of the LMS. Students wanted to see their grades posted online, and they wanted the grades to be up to date. If faculty members are going to only use certain parts of the LMS, they should consider using the grade book function as it appeared to be important to many students in this sample.

6. *Analyze the LMS user statistics, if available, to see what modules students are frequently accessing*. For example, one might examine how often they are using the LMS, and how long they are staying on the LMS. Most LMSs will provide aggregate user statistics that can be used for creating a LMS strategy. While activity does not indicate engagement, it is a metric that can give an instructor a good starting point.

7. *Consider the audience when designing a social media and LMS strategy*. This student population was comprised of millennials. That may have been why Twitter seemed to have a positive influence on engagement levels. However, different audiences such as nontraditional or graduate students may prefer other types of social media and digital platforms. This is an idea that is worthy of further study.

8. *Consider using the LMS or social media to provide more practical applications or real world examples*. Many of the students suggested that they wanted more examples and applications. Social media and LMSs

are good platforms for providing this type of content.

This exploratory study provided important insights and several ideas on how to more effectively use social media and an LMS to influence student engagement. Professors, especially marketing professors, should at least try to incorporate more social media and LMS use in their classes. Marketing practitioners are using social media and digital marketing more and more to reach their customers. Professors should also start using these tools to more effectively reach their target market: the marketing student.

References

Al-Busaidi. K. A. (2012). Learners' perspective on critical factors to LMS success in blended learning: An empirical investigation. *Communications of the Association for Information Systems, 30*(2), 11-34.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel, 25*(4), 297-308.

Carmean, C., & Haefner, J. (2002). Mind over matter: Transforming course management systems into effective learning environments. *EDUCAUSE Review*, *37*(6), 27-34.

Coates, H., James, R., & Baldwin, G. (2005). A critical examination of the effects of learning management systems on university teaching and learning. *Tertiary Education and Management*, *11*, 19-36.

Cole, M. (2009). Using Wiki technology to support student engagement: Lessons from the trenches. *Computers & Education, 52*(1), 141-146.

Costen, W. M. (2009) The value of staying connected with technology: An analysis exploring the impact of using a course management system on student learning. *Journal of Hospitality, Leisure, Sport & Tourism Education, 8*(2), 47-59.

De Vries, L., Gensler, S., & Leeflang, P. S. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing*, *26*(2), 83-91.

Finch, D., Nadeau, J., & O'Reilly, N. (2013). The future of marketing education: A practitioner's perspective. *Journal of Marketing Education*, 0273475312465091.

Frand, J. L. (2000). The information age mindset; Changes in students and implications for higher education. *Educause Review*, *35*(5), 14-24.

Fructuoso, I. N. (2014). How Millennials are changing the way we learn: The state of the art of ICT integration in education. *RIED. Revista Iberoamericana de Educación a Distancia, 18*(1), 1138-2783.

Gillani, B. B. (2000). Using the web to create student centered curriculum. In R.A. Cole (Ed.), *Issues in web based pedagogy*. London, UK: Greenwood Press.

Gil-Or, O. (2010). Building consumer demand by using viral marketing tactics within an online social network. *Advances in Management*, *3*(7), 7-14.

Green, K. C., & Gilbert, S. W. (1995). Great expectations: Content, communications, productivity, and the role of information technology in higher education. *Change*, *27*(2), 8-18.

Handelsman, M. M., Briggs, W. L., Sullivan, N., & Towler, A. (2005). A measure of college student course engagement. *The Journal of Educational Research*, *98*(3), 184-191.

Hannon, J., & D'Netto, B. (2007). Cultural diversity online: Student engagement with learning technologies. *International Journal of Educational Management,* *21*(5), 418-432. doi: http://dx.doi.org/10.1108/09513540710760192

Harrington, C. F., Gordon, S. A., & Schibik, T. J. (2004). Course management systems utilization and implications for practice: A national survey of department chairpersons. *Online Journal of Distance Learning Administration*, *7*(4), 1-13.

Hershey, L., & Wood, P. (2011). Using the blackboard CMS to develop team work skills in undergraduate marketing principles class. *Academy of Educational Leadership Journal*, *15*(1), 57-64.

Jonassen, D. H. (1994). Thinking technology: Toward a constructivist design model. *Educational Technology, 34*(4), 34-37.

Junco, R., Heiberger, G., & Loken, E. (2011). The effect of Twitter on college student engagement and grades. *Journal of Computer Assisted Learning*, *27*(2), 119-132.

Kuh, G. D. (2009). What student affairs professionals need to know about student engagement. *Journal of College Student Development, 50*(6), 683-706.

Lowry, L. L., & Flohr, J. K. (2004). Technology and change: A longitudinal case study of students' perceptions of and receptiveness to technology enhanced teaching and learning. *Journal of Teaching in Travel & Tourism*, *4*(1), 15-39.

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *American Educational Research Journal*, *37*(1), 153-184.

McCormick, A. C., Kinzie, J., & Gonyea, R. M. (2013). Student engagement: Bridging research and practice to improve the quality of undergraduate education. *Higher Education: Handbook of Theory and Research*, *28*, 47-92.

Morgan, G. (2003). *Faculty use of course management systems*. Boulder, CO: EDUCAUSE Center for Applied Research.

Newmann, F. M. (1992). *Student engagement and achievement in American secondary schools.* New York, NY: Teachers College Press.

Observatory on Borderless Higher Education (OBHE). (2002). *Leading learning platforms: International market presence*. Retrieved from *http://www.obhe.ac.uk*

Okazaki, S., Katsukura, A., & Nishiyama, M. (2007). How mobile advertising works: The role of trust in improving attitudes and recall. *Journal of Advertising Research*, *47*(2), 165-178.

Palfrey, J., & Gasser, U. (2013). *Born digital: Understanding the first generation of digital natives.* New York, NY: Basic Books.

Pascarella, E. T., Terenzini, P. T., & Feldman, K. A. (2005). *How college affects students* (Vol. 2). San Francisco, CA: Jossey-Bass.

Smith, K. T. (2011). Digital marketing strategies that millennials find appealing, motivating, or just annoying. *Journal of Strategic Marketing*, *19*(6), 489-499.

Stith, B. (2000). Web-enhanced lecture course scores big with students and faculty. *THE Journal (Technological Horizons in Education)*, *27*(8), 20.

Trowler, V. (2010). *Student engagement literature review.* New York, NY: Higher Education Academy.

Veletsianos, G., & Navarrete, C. (2012). Online social networks as formal learning environments: Learner experiences and activities. *The International Review of Research in Open and Distance Learning, 13*(1), 144-166.

Williams, D. L., Crittenden, V. L., Keo, T., & McCarty, P. (2012). The use of social media: An exploratory study of usage among digital natives. *Journal of Public Affairs*, *12*(2), 127-136.

_____

DAVID WILLIAMS is an Assistant Professor of Marketing at Dalton State College. He has recently published in *The Journal of Public Affairs* and *Qualitative Market Research*: *An International Journal*. His primary research interests are uncontrolled marketing communications and social media marketing.

ANITA WHITING is a Professor of Marketing at Clayton State University. She has recently published in *The International Journal of Research in Marketing*, *Journal of Services Marketing*, and J*ournal of Service Research*. Her primary research interests are services marketing, call centers, service employees, and social media.

Appendix

Research Instrument

1. What is your current classification at xxxxx College? Circle your answer choice – <u>only one answer.</u>

Freshman/first year
Sophomore
Junior
Senior

2. Are you a student-athlete on a team sponsored by the xxxxx College athletic department? Circle your answer choice – <u>only one answer</u>
Yes   No

Please read and process the following description of "Engagement":

Engagement is defined by some as the frequency with which students participate in activities that represent effective educational practices, and conceive of it as a pattern of involvement in a variety of activities and interactions both in and out of the classroom and throughout a student's college career. Additionally the phrase "student engagement" has come to refer to how involved or interested students appear to be in learning and how connected they are to their classes, institutions, and each other.

<u>For questions 3, 4, & 5</u>
Thinking about the "engagement" description above, rate your level of "engagement" with the following by circling one number choice:

3. xxxxx College

1	2	3	4	5	6	7
Not at all						Very
Engaged						Engaged

4. The xxxxx School of Business

1	2	3	4	5	6	7
Not at all						Very
Engaged						Engaged

5. This course you are about to complete (MKT 301A, MKT 301B, or MKT 424A)

1	2	3	4	5	6	7
Not at all						Very
Engaged						Engaged

6. In which generational cohort do you consider yourself a member? <u>Choose and circle only one.</u>

Silent Generation	(born 1925 - 1945)
Baby Boomer 1	(born 1946 - 1955)
Baby Boomer 2	(born 1956 – 1964)
Gen X	(born 1965 – 1980)
Millennial	(born 1981 – 2000)

7. xxxxx College hosts its Learning Management System on xxxxx. This is where a student would go to look at their grades, download any handouts or PowerPoint slides, review the course syllabus etc. <u>Thinking only about this course</u> – rate **your** usage of the Learning Management System available on xxxxx. <u>Circle only one answer choice.</u>

1	2	3	4	5	6	7
Never						Very Frequently

8. This course had a Twitter feed available to any students that were interested in voluntarily following it throughout the semester. The Twitter handle was @xxxxx_MKT. Your level of interaction with this Twitter account could have ranged from none at all, to being a "Spectator" that read postings, a "Creator" who published Tweets on the account, a Re-Tweeter who shared tweets from the account etc. Thinking of **your** interaction only, **on any level**, with the @xxxxx_MKT Twitter account this semester please rate your participation level. <u>Circle only one answer choice.</u>

1	2	3	4	5	6	7
Never						Very Frequently

9. Thinking now about any xxxxx **School of Business** course. What <u>one</u> thing could be done to increase or improve your level of engagement with, in, or to a course in the xxxxx School of Business? You may use the back of this page if necessary. You may also choose not to provide any answer.

Percieved Culpability in Critical Multicultural Education: Understanding and Responding to Race Informed Guilt and Shame to Further Learning Outcomes Among White American College Students

Fernando Estrada and Geneva Matthews
Loyola Marymount University

In this investigation we explored among a U.S. sample of White college students the effect of perceived race-informed culpability—conceptualized as the self-conscious emotions known as White guilt and shame—on two critical multicultural education outcomes: modern prejudicial attitudes and demonstrated anti-racist knowledge. Interaction effects by participants' racial identity were also examined. Moderated hierarchical linear regression showed that the tendency to experience White guilt as well as White shame explained a significant portion of the variability in racist attitudes. For knowledge, only guilt had an effect. No interaction effects were observed. Limitations are discussed followed by implications for teaching and learning with an emphasis on affect-sensitive pedagogy.

Multicultural education is one of the most challenging topics to teach for postsecondary teachers because of the strong emotional reactions by students of racially privileged backgrounds (i.e., White/Caucasian; Kernahan & Davis, 2007; Sue et al., 2011). Of particular interest is the pervasive feeling of perceived culpability or blameworthiness that White racial students can experience and its ties to outcomes in multicultural education. Within the United States this inquiry is important because, on average, college courses there are comprised of predominantly White students (U.S. Department of Education, 2014), and also because perceived culpability induces an anxiety that can either enhance learning or distract from it (Schutz & Pekrun, 2007). Scholarship in this area can help deepen the understanding among educators related to student emotions, its effects on course outcomes, and the development and testing of empirically derived, affect-sensitive teaching practices.

In the current study, we adopted a social-emotional theoretical framework (Tangney & Dearing, 2002) that helped to conceptualize a complex phenomenon like race-informed culpability as comprised of White guilt and White shame[1], which facilitated an empirical test of direct and indirect effects on (a) modern racial prejudice and (b) demonstrated knowledge. First, a conceptual framework is articulated that helps to locate White guilt and shame more precisely within a postsecondary course setting framed by critical multicultural education principles. Then, three hypotheses are tested using moderated hierarchical linear regression and the results discussed in relation to teaching and learning. Limitations of the study as well as future scholarship are discussed.

Student Emotions and Critical Multicultural Education

A course curriculum focused on race, racism, and other multicultural topics can often trigger among White college students an emotional reaction undergirded with anxiety aimed at themselves. Helping to explain are factors such as the aim, design, and overall implementation—or pedagogy. Critical multicultural education pedagogy draws on paradigms like feminism and critical race theory, essentially elevating within the process of teaching and learning the importance of demographic variables like gender, race, and sexuality as well as more distal forces like institutional or systematic oppression that help maintain wide disparities in areas like education and healthcare (May & Sleeter, 2010). Accordingly, the classroom is seen as a space where the teacher, by engaging students with participatory forms of instruction like community service and group discussions, stimulates intellectual as well as emotional processes in order to help them acquire accurate cultural knowledge, confront prejudicial attitudes, and achieve a more resolute commitment to social justice (Kivel, 2011).

Anti-Racist Multicultural Pedagogy and Race-Informed Culpability

Anti-racist multicultural pedagogy, a strand of critical multicultural education, is an instructional paradigm that specifically targets the development of vocabulary and behavior for addressing *White* racism (May & Sleeter, 2010). Curricular emphasis is placed on examining the role that Whiteness and White identity politics play in maintaining social stratification (Cross & Naidoo, 2012). Consequently, the student is required to unpack provocative concepts like cultural dominance, imperialism, and White racial privilege. In

---

[1]To minimize redundancy, guilt and shame refer to the White racialized version unless otherwise noted.

brief, the White person is asked to centrally consider the notion that inequality is not so much a problem facing minorities, but rather a problem stemming from Whiteness (Kivel, 2011).

Anti-racist multicultural pedagogy sheds light on the normalcy of emotional reactions among White students in a multicultural education setting. Moreover, it illuminates the likely possibility that an instructor will have to address student feelings rooted in a pervasive sense of personal responsibility for existing racism and oppression. A deeper understanding of this perceived and racially charged blameworthiness and its effects on key outcomes can promote affect-sensitive multicultural teaching strategies (Zembylas, 2012).

White Guilt and Shame

Perceived race-informed culpability has been largely understood as White guilt (Spanierman, Poteat, Wang, & Oh, 2008; Tatum, 1994), or a blend of confusion, disbelief, and remorse stemming from a perception that one has personally engaged in an act of racism. It can also involve the perception of an ideological transgression of a race-based moral such as meritocracy or color-blindness (Spanierman et al., 2008)—ideals that are improbable within a racially stratified society like the U.S. (Bonilla-Silva, 2013).

Guilt, generally speaking, has a negative valence and is considered unpleasant. But in an academic setting, studies with samples of U.S. students have found largely positive links to educational outcomes. White guilt has been correlated with a greater belief in oppression against minorities, fewer prejudices against Blacks, and overall lower levels of racism (Powell, Branscombe, & Schmitt, 2005; Swim & Miller, 1999). Iyer, Leach, and Crosby (2003) found that higher levels of self-reported guilt was associated with greater support for affirmative action and other attitudes focused on ending racial inequality. Among graduate students, guilt has demonstrated a positive association with an enhanced ability to conceptualize client problems (Spanierman et al., 2008).

The extant literature suggests that the tendency to feel White guilt heightens the sense of personal responsibility for racism in a way that leads to multicultural gains. While prior research has looked at the effects of guilt on overt forms of prejudice (e.g., Swim & Miller, 1999), newer measures that reflect its subtle nature remain underutilized. In a time of rapid shifts in U.S. demography (Krogstad, 2014) and increasing racial tensions nation-wide (Drake, 2014), examining the association between White guilt and modern racist attitudes is important and timely.

The More Unpleasant Side of Culpability

The experience of generalized shame, which is similar to guilt but more unpleasant (Tracy, Robins, & Tangney, 2007), remains highly understudied in education. But an anti-racist paradigm urges postsecondary instructors to ask: is it possible for racially dominant students to experience a more acute reaction stemming from perceived culpability? If so, what impact might it have on multicultural outcomes? Answers to questions that explore the complexity and nuance of the affective experience of a student can shape intelligent teaching practices (Schutz & Pekrun, 2007).

Similar to general forms of guilt, general shame also stems from a perceived transgression, but judgment is cast throughout the *entire* self rather than on a single behavior or act. Stated differently, guilt involves a person feeling as though he or she did something wrong, whereas shame feels as though there is something wrong with him or her. Shame is associated with the urge to hide and withdraw from others and, left unattended, can manifest in irritability and expressions of anger and resentment (Tangney & Dearing, 2002). Such emotions have been identified as having the potential to adversely impact multicultural learning (Ancis & Szymanski, 2001; Garcia & Van Soest, 2000).

Theoretically, White shame might work similarly to White guilt in a critical multicultural education context and positively impact outcomes. However, because shame in general is believed to be more unpleasant, the anxiety associated with it might work against the beneficial properties of self-conscious emotions. Because the loosening of a modern racist ideology is a delicate undertaking even for the most seasoned instructor (Sue et al., 2011), college educators stand to benefit from examining the effects on racist attitudes from both White guilt and shame. In addition, examining the impact of both race-informed emotions on demonstrated forms of knowledge, as opposed to self-reported knowledge, can shed light on the relation between perceived race-informed culpability and more objective measures of academic performance, which currently lack. Spanierman and colleagues (2008) found a positive correlation between White guilt and self-reported multicultural knowledge among a sample of graduate students. Seeing if an association exists between performance on a test and feeling racially culpable, understood as both White guilt and shame, can promote affect-sensitive strategies to optimize multicultural learning (Boatright-Horowitz, Marraccini, & Harps-Logan, 2012).

The Current Study

The aim of this study was to empirically test the notion that perceived race-informed culpability

operationalized as both White guilt and shame are uniquely associated with critical multicultural outcomes like reduced racial prejudice and acquisition of anti-racist knowledge. A social theory of self-conscious emotions (Tracy et al., 2007) helped us generate the hypotheses. The theory maintains that general forms of guilt and shame involve a perceived moral transgression, with guilt implicating a behavior and shame the entire self. Yet, as a self-reported experience, generalized guilt and shame are often seen as more similar than different. For example, studies using a range of quantitative measures have shown guilt and shame to frequently co-vary (Tracy et al., 2007). In addition, the link between affect and outcome is not always straightforward. Self-conscious emotions involve intrapersonal processes (i.e., identity centrality), and social identity theory (Schwartz, Luyckx, & Vignoles, 2011) would contend that the extent to which a person identifies with their White identity could bolster or mitigate the effects of race-informed guilt and shame on the outcomes of interest. To summarize, the hypotheses tested in the current study are:

(1) White guilt and shame will be negatively and significantly associated with modern racist attitudes above and beyond other explanatory variables. In other words, as guilt and shame increase, racial prejudice will decrease.
(2) White guilt and shame will be positively and significantly associated with demonstrated knowledge. Specifically, as levels of guilt and shame increase the scores on a recall test focused on anti-racist content will also increase above and beyond any control variables.
(3) White racial centrality will moderate the relation between White guilt and shame and the dependent measures such that stronger levels of White centrality will bolster the effects of guilt and shame on the dependent variables.

Persons interested in topics related to multiculturalism and anti-racism will seek out information on their own, whether through personal reading or college coursework. Such behavior can influence race-based attitudes but also existing levels of multicultural knowledge (Banks & Banks, 2012). To minimize the number of variables in this exploratory study, we elected to use a degree of self-exposure to multiculturalism content as the only covariate.

The tests of the three aforementioned hypotheses will advance the literature in a few ways. First, perceived race-informed culpability is defined as consisting independently of both White guilt and shame, which offers a more complete understanding of emotions in the classroom. Second, the test of moderation increases the precision for intervention design by highlighting groups for whom the effects are largest.

Third, the dependent variables in this study respond to trends in the literature. Last, the inclusion of the control variable increases the statistical rigor of the study, thereby increasing confidence in the obtained results.

Method

Participants

Table 1 shows a demographic profile of the 153 participants in the study. All participants self-identified as being racially White and ages ranged from 18 to 29 ($M = 21.3$, $SD = 2.3$). In terms of gender, 63% ($n = 97$) were women while the remaining 37% ($n = 56$) were men. Regionally, 61% ($n = 93$) of participants were students at a large university on the West coast, 31% ($n = 48$) attended a university in the Midwest, and the remaining 8% ($n = 12$) were students from the Southwest. The majority of participants (65%) were juniors or seniors. A single item measure of a person's self-perceived social rank (1 = *lower class* to 10 = *upper class*) was used, with the average participant identifying as middle class ($M = 6.7$, $SD = 1.44$). On average, the political orientation of participants (1 = *extremely liberal* to 7 = *extremely* conservative) was moderately liberal ($M = 3.3$, $SD = 1.37$).

Measures

Demographic. Participants were asked several demographic-related questions concerning their age, race, current education level, socioeconomic status, and political orientation.

White guilt and shame. The Test of White Guilt and Shame (Grzanka, 2010) is comprised of seven scenarios designed to elicit a range of White racial anxiety, with each scenario accompanied by several response options that correspond to either White guilt or White shame. A third factor has been observed that taps into a cognitive process of denial and not an emotional experience, so this factor is less relevant than the guilt and shame subscores. Participants are instructed to rate each response item from 1 (*not likely*) to 5 (*very likely*) with the average of all response items for each factor indicating participants' level of proneness to that particular affect. As an example, one scenario states: "*you read a Civil War novel about American slavery that describes violent abuse of Black slaves by White slave-owners.*" Participants then rate response items like: (a) *you would feel depressed and sad about the history of racism in the United States*; and (b) *you would think: "I wish there was something I could do to make up for all the harm slavery caused Black people.*"

Exploratory and confirmatory factor analysis with a sample of White college students helped establish the psychometric properties (Grzanka, 2010). Convergent

Table 1
Sample Demographics (N=153)

	M	SD	n	%
Socioeconomic Status	5.7[†]	1.44		
Political Orientation	3.3[††]	1.37		
Exposure to Diversity	3.4[x]	.69		
Age				
18 to 99			28	18
20 to 22			93	61
Older than 22			32	21
Gender				
Men			56	37
Women			97	63
School Region				
West Coast			93	61
Southwest			12	8
Midwest			48	31
Education				
Freshman			15	10
Sophomore			30	20
Junior			39	25
Senior			60	39
Graduate			9	6

Note. [†] indicates a scale of 10, [††] indicates a scale of 7; [x] indicates a scale out of 5

validity was established with measures for general guilt and shame, as well as with existing measures for White guilt (Grzanka, 2010). Discriminant validity has yet to be reported. Temporal stability (two weeks) has been calculated from .87 to .90 (Grzanka & Estrada, 2011). Alpha coefficients for the scales have ranged from .80 to .86 (Grzanka, 2010). For the current sample, alpha coefficients for the guilt and shame scales were calculated at .81 and .84 respectively.

Racist attitudes. The Symbolic Racism 2000 Scale (Henry & Sears, 2002) was designed to assess contemporary racist attitudes across four themes: work ethic, excessive demands, denial of continuing discrimination, and undeserved advantage. In essence, the instrument is described as measuring a blend of racial antipathy and conservative values (Henry & Sears, 2002). One item asks*: Irish, Italian, Jewish, and many other minorities overcame prejudice and worked their way up. Blacks should do the same*. Item responses vary from 1 to 4 with options varying in description to prevent agreement bias. Responses are summed and averaged to obtain a single value, with higher values indicating a higher level of modern racist beliefs.

Exploratory and confirmatory factor analyses have shown a unitary construct (Henry & Sears, 2002). The instrument predicts conservative racial policy preference and tests of discriminant validity have established negative correlations with measures for traditional racism

(Henry & Sears, 2002). A two-week, test-retest reliability coefficient has been calculated at .68, and alpha coefficients with White college students has ranged from .77 to .79 (Henry & Sears, 2002). The alpha coefficient for the current sample was calculated at .78.

Demonstrated knowledge. Multiple-choice questions that test recall information on a specific area of content are frequently used to show the degree of knowledge retention among students. Given the exploratory nature of this study, eight multiple-choice items were created that assessed recall of content related to a lecture on structural racism (see next section). For example, participants were asked, *In a racialized environment, what determines the distribution of social privilege?* Each item was followed by five answer choices with only one correct response. In the aforementioned case the answer was: *racial group membership*. Correct answers for all eight items were summed, which provided a single value used to determine the degree of demonstrated multicultural knowledge (i.e., information recall). Reliability coefficient for the eight-item measure was calculated at .70.

Racial identity centrality. The four-item, identity subscale of the Collective Self-Esteem Measure (Luhtanen & Crocker, 1992) was used as the moderator variable. The scale was designed to assess the importance of one's social group membership to one's

self-concept with higher averages indicating higher collective self-esteem. All subscales for the collective self-esteem measure, including the identity subscale, underwent principal component factor analysis and have demonstrated sound convergent and discriminant validity. The identity subscale has been found to positively correlate with other measures for collective esteem (Luhtanen & Crocker, 1992). Two-week test-retest reliability coefficient for the identity subscale has been reported at .68 (Luhtanen & Crocker, 1992) whereas internal stability coefficient has been observed at ..83 (Swim & Miller, 1999).

A modified version of the scale focusing on racial identification was used. For example, one item asks: *Overall, being White has very little to do with how I feel about myself.* Each item was rated from 1 (*strongly disagree*) to 7 (*strongly agree*) with the average score indicating the level of identification with Whiteness for each participant. Alpha coefficient for the current sample was calculated at .77.

Exposure to multiculturalism. The control variable consisted of five items that assessed the level of exposure to multicultural and race-related issues as a result of coursework and other extra-curricular activities. For example, one item asked respondents: "*To what extent have you chosen coursework to further your understanding of racial issues?*" Response choices ranged from 1 (*not at all*) to 5 (*a great deal*). Alpha coefficient for this sample was calculated at .73.

Anti-Racist Presentation

A novel stimulus was created to be able to preliminarily explore the relation among racial affect and demonstrated knowledge. Prior to completing the dependent measures, every participant viewed a standardized, 2-minute audio-video presentation on the topic of a racialized social system, a concept focused on the institutional nature of racism (Bonilla-Silva, 1996; see Appendix for text). The presentation was designed in consultation with a professor in American Studies for accuracy and cohesion. A confederate instructor with a pseudonym delivered the audio-video lecture.

Procedures

Participants were recruited via student email listserves in three public universities spanning the West Coast, Southwest, and Midwest regions of the United States. Every participant received a $5 gift card to a local coffee shop for his/her involvement in the study. The study was conducted in an office on two laptop computers that were running *SuperLab 4.5*, a stimulus presentation and data collection software. Participants were asked to use headphones for audio clarity as well as instructed to follow additional prompts on the screen, which began with the

informed consent. Demographic information was collected first along with information for control and moderator variables. The brief lecture followed, and then the measures for White racial affect, racist attitudes, and demonstrated knowledge, in that order.

Analytic Approach

A power analyses for an F test of R^2 increase using G*Power 3.1 indicated that a sample size of 138 was needed to achieve a power of .80 when detecting a small to medium effect size at an alpha of .05. The total recruited sample was 159. After removing cases found to be univariate or multivariate outliers (Tabachnick & Fidell, 2007), a final sample of 153 respondents was reached. All subsequent calculations were done with this reduced sample size.

The screening methods of Tabachnick and Fidell (2007) revealed that less than 5%, or five data points, were missing. Little's missing completely at random test (MCAR) was performed and found to be non-significant ($p > .05$), suggesting that the missing cases were not significantly different from the non-missing cases in a systematic fashion. Multiple imputations procedure was used to estimate missing values (Schlomer, Bauman, & Card, 2010). No significant skews or deviation from normality was observed.

Using hierarchical moderated regression the three hypotheses were tested using two statistical models (i.e., one for each dependent variables) and each model was subjected to an inference test. Alpha levels were set at .05 to indicate significant individual regression weights as well as change in variance accounted for (i.e., ΔR^2). Generally speaking, parceling out the unique effects of guilt and shame is statistically important given their similarities (Tracy et al., 2007). Thus, White guilt and shame were entered into each model sequentially. Per Frazier, Tix, and Barron (2004), the covariate and moderator variable were entered in Step 1 followed by guilt in Step 2, shame in Step 3, and the interactions in Step 4. All variables were centered prior to analyses. Strength of effect was determined by observing the squared correlation (i.e., R^2). Later examination of regression output provided additional assurance that multicollinearity was not a problem: variance inflation factor range = 1.02 to 1.94 (Tabachnick & Fidell, 2007).

Results

Bivariate correlations and central tendencies are displayed in Table 2 and show guilt ($M = 3.4$, $SD = .86$) and shame ($M = 2.5$, $SD = .84$) as significantly related to each other ($r = .64$, $p < .01$). Guilt was also significantly and negatively correlated with racist attitudes ($r = -.52$, $p < .01$) and positively with

Table 2
Bivariate Correlations, Means, and Standard Deviations (N=153)

Variable	1	2	3	4	5	6
1. Guilt	---					
2. Shame	.64**	---				
3. Racism	-.52**	-.58**	---			
4. Knowledge	.24**	.13	-.24**	---		
5. Whiteness	.04	.05	-.09	.00	---	
6. Exposures	.34**	.29**	-.27**	.13	.17*	---
M	3.4†	2.5†	1.8††	5.7^{x}	3.4^{xx}	3.3†
SD	.86	.84	.52	1.96	1.30	.67

Note. *p<.05. **p<.01. † indicates out of a 5-point scale. †† indicates out of 4-point scale. ^{x} indicates out of an 8 point scale. ^{xx} indicates out of a 7-point scale

Table 3
Hierarchical Multiple Regression Analyses (N=153)

	B	*SE B*	β	*t*	R^2	Adj R^2	ΔR^2	ΔF	f^2	dfs
Racist Attitudes										
Step 1					.07	.06	.07	5.91*	.07	2, 150
Prior multicultural experience	-.20*	.06	-.26	-3.23						
White identity salience	-.02	.03	-.05	-.63						
Step 2					.29	.28	.22	46.58**	.28	1, 149
Guilt	-.31**	.39	.31	4.24						
Step 3					.38	.36	.09	21.171**	.09	1, 148
Guilt	-.16**	.05	-.25	-.29						
Shame	-.25**	.05	-.39	-6.82						
Step 4					.41	.38	.02	2.59	.02	2, 146
Guilt x Whiteness	-.07	.04	-.13	-1.53						
Shame x Whiteness	.00	.04	-.01	-.13						
Demonstrated Knowledge										
Step 1					.02	.00	.02	1.43	.01	2, 150
Prior Multicultural experience	.40	.24	.13	1.69						
White identity salience	-.03	.12	-.02	-.28						
Step 2					.06	.04	.04	6.88*	.04	1, 149
Guilt	.51*	.19	.22	2.62						
Step 3					.06	.03	.00	.20	.00	1, 148
Guilt	.58*	.24	.25	2.35						
Shame	-.11	.24	-.04	-.45						
Step 4					.08	.04	.02	1.77	.02	2, 146
Guilt x Whiteness	.40	.21	.20	1.85						
Shame x Whiteness	-.30	-.30	.19	-.17	-1.53					

Note. Adj = adjusted. *p<.05, two-tailed. **p<.01, two-tailed

knowledge (*r* = .24, *p* < .01). Shame also was negatively and significantly associated with racism (*r* = -.58, *p* < .01) but not with knowledge (*r* = .13, *p* > .05). As expected, participants who indicated having had greater amounts of exposure to multicultural material also tended to report lower levels of racist attitudes (*r* = -.27, *p* < .01), but no significant correlation existed with demonstrated knowledge (*r* = .13, *p* > .05).

The results of the regression analyses (Table 3) partially supported the hypotheses. Overall, the statistical models showed White racial culpability as uniquely associated with multicultural outcomes better than chance alone and above and beyond the variability accounted for by prior exposure to multiculturalism. For the model predicting racist attitudes, Step 3 showed significant main effects, $\Delta F(4, 148) = 21.71$, $\Delta R^2 = .09$, *p* < .01 for both guilt, $t(148) = -2.93$, *p* < .01 and shame,

$t(148) = -4.66$, $p < .01$. Together, guilt and shame accounted for 31% of the variability in the dependent variable. The inclusion of shame in Step 3 contributed an additional 9% explanatory power to the model, markedly lower than that for guilt (22%). For the model predicting demonstrated knowledge, Step 2 showed main effects $\Delta F(3, 149) = 6.88$, $\Delta R^2 = .04$, $p < .05$ that were attributed to guilt, $t(149) = 2.62$, $p < .05$; however, the addition of shame in Step 3 did not explain any significant variability in the dependent measure, $\Delta F(4, 148) = .21$, $p > .05$. The tendency for participants to feel guilty accounted for 4% of the variability in the outcome measure.

According to Cohen's (1988) strength effect values, the effect (i.e., f^2) of White racial culpability was greater for racist attitudes than for demonstrated knowledge, with guilt showing stronger effects compared to shame. Last, the addition of the interaction terms in Step 4 in both statistical models did not yield significant results, $\Delta F(2, 146) = 2.59$, $p > .05$ for racist attitudes and $\Delta F(2, 146) = 1.77$, $p > .05$ for demonstrated learning. This means that the interaction between White culpability and racial identity salience did not explain any significant portion of variability in the dependent measures above and beyond main effects.

Discussion

The findings here align with existing scholarship on self-conscious emotions by suggesting that perceived race-informed culpability, operationalized as White guilt and shame, is a potentially facilitative force in critical multicultural education at the postsecondary level. Despite not seeing an interaction effect, results showed that race-informed guilt and shame were uniquely associated with lower levels of modern racial prejudice after parceling out the effects from prior exposure to multicultural content. Preliminary evidence also showed White guilt, but not shame, predicting better performance on a brief, multiple-choice quiz on structural racism. Emotions work in tandem with other mechanisms to direct student attention and sustain motivation and engagement in class (Linnenbrink-Garcia & Pekrun, 2011). Exploring such possibilities within multicultural education frames the next section, followed by a review of limitations and considerations for future scholarship.

Understanding and Responding to Perceived Race-Informed Culpability

The evidence suggests that the tendency to feel guilt and shame among the current sample of White U.S. college students was associated with lower levels of racist attitudes. The feeling of personal responsibility for existing racism, despite the discomfort it produces, might signal an emerging awareness of the self in relation to the environment, which Brotherton (1996) considered key for a shift to truly occur in one's racist attitudes. Endorsement of a racist ideology in the current study was operationalized as a blend of factors related not just to conservative values (e.g., endorsement of meritocracy) but also the sense of racial apathy and antipathy (e.g., denial of existing discrimination), which can characterize the experiences of many Whites towards racism and oppression (Bonilla-Silva, 2013; Neville, Lilly, Duran, Lee, & Browne, 2000). Therefore, as an instructor, stimulating cognitive as well as emotional processes among students might bolster efforts to help dislodge a deeply rooted ideology.

For example, a didactic activity (e.g., lecture on structural racism) could be followed with a participatory task (e.g., journaling) in order to draw out of students personal experiences related to race and racism that could potentially unveil race-based contradictions (e.g., belief in meritocracy), which can be used to prompt further reflection. If feelings of guilt and shame emerge for a student, an instructor could facilitate a process-oriented discussion with the aim of helping the student see the potential relevance between the course content and personal life experiences, as such a strategy can result in learning that is more meaningful (e.g., Mio & Barker-Hackett, 2003).

Importantly, while both guilt and shame constructs stem from a perceived moral transgression—thus behaving in similar ways (see Table 2)—guilt, in theory, draws attention to a specific behavior, whereas shame casts blame over the entire person. This has pedagogical implications for bringing about positive shifts in racist attitudes. For example, a student might express guilt after realizing a tendency not to speak out against jokes that are racist. This level awareness could assist an instructor to direct the student's attention to other similar incidents that, in turn, might lead to new goals for the student to pursue. Shame, however, is generally more self-deprecating and associated with the urge to withdraw (Tangney & Dearing, 2002). For example, a student's sudden realization of having condoned racist jokes might bring to focus a perceived deficiency in assertiveness and other dispositional traits. Repeated episodes of anxiety of this type can have counterproductive effects on student engagement and motivation (Schutz & Pekrun, 2007). Seeing an opportunity to temper a student's self-blame, an instructor might highlight the larger structural forces at play that ultimately orchestrate *everyone's* participation in a racist society (Bonilla-Silva, 1996). This strategy, also referred to as normalizing, can be an effective way to contain a learner's anxiety and reduce the potential for defensiveness (Hill, 2014).

White shame did not predict the second dependent variable (i.e., demonstrated knowledge), but White guilt showed a significant and positive main effect such that

higher levels of guilt were associated with more correct responses on a multiple-choice quiz focused on structural racism. The finding is preliminary given the study-specific stimulus and measure but incrementally important given the dearth of research. Emotions can direct attention (Linnenbrink-Garcia & Pekrun, 2011) and are intertwined with memory making (Zembylas, Charalambous, & Charalambous, 2014). Also, general forms of guilt can inhibit anger and aggression and brings to one's awareness past behavior (Tracy et al., 2007). In this way, perhaps, White guilt can make an ambiguous and emotionally laden topic like institutional racism more palatable and personally meaningful, possibly explaining the higher quiz scores observed here. While our finding aligns with the extant literature on general guilt, the lack of sufficient student-level covariates in the statistical model makes alternative explanations plausible and highlights the need for more empirical studies to fully understand the emotional-cognitive link within a critical multicultural education setting.

Study Limitations and the Need for More Scholarship

While the findings here are encouraging of pedagogical practices that attend to the fuller student experience, it is important to first consider some of the limitations of our study, beginning with the use of a non-representative sample of White college students and the limitation it places on the generalizability of our results. Also, the use of information recall as a measure for demonstrated knowledge, arguably a more surface-level outcome, prevents generalizability to deeper forms of learning such as critical thinking skills. Additionally, the lack of student-level variables that could control for alternative explanations (e.g., GPA) signals a need to see the finding related to demonstrated knowledge as preliminary.

Another limitation concerns the measure for White guilt and shame, which is a relatively new measure in need of additional validity studies. Also, while no moderator effect from White identity salience was observed, the idea of a racial self-concept is truly multidimensional, and the current conceptualization might have influenced the null results observed here.

A more nuanced understanding of student emotions in higher education is a worthwhile line of inquiry, particularly as it relates to emotionally laden coursework. Researchers in the future will want to test the effects of White guilt and shame on deeper-level outcomes like critical thinking skills. Within a professional training setting, White guilt has been associated with enhanced counselor case conceptualization (Spanierman et al., 2008). It is unknown at this time how White shame would impact

these and other related outcomes. Additional, theory-driven studies are needed to explore other moderating variables that can bring greater sophistication to intervention design.

Racism is a dynamic construct, and so researchers will want to investigate in the future whether the findings observed here extend to other ideas of modern racism such as micro-aggressions. Earlier in the paper we also identified social stratification as a key factor in making it possible for White Americans to have a racially driven emotional reaction like White guilt. However, social stratification is a global phenomenon and not restricted only to race. Thus, future scholarship rooted in varying socio-political realities and ideologies will want to explore self-conscious feelings shaped by gender- or religious-based stratification and the influence (i.e., strength effect) that those emotional states have on education outcomes. Researchers in the U.S. might want to consider exploring differences in effect stemming from regional differences, like comparing scoring patterns based on whether the participant is in the Western versus the Southern part of the nation.

Affect-Sensitive Pedagogy in Critical Multicultural Education

The findings of the current study, at minimum, invites multicultural educators seeking to enhance the learning environment for their students to consider working pedagogically with race-informed feelings such as White guilt and shame. This can be facilitated by a deeper knowledge on how emotions intersect with teaching and learning (see Schutz & Pekrun, 2007), as well as on concepts like self-conscious emotions (see Tracy et al., 2007). Before closing, we direct the reader to Goodman's (2011) book, *Promoting Diversity and Social Justice: Educating People from Privileged Groups*. Highlighted below are three of Goodman's recommendations that we believe can assist instructors pursuing to enhance their pedagogical response to White guilt and shame, and other race-related emotions, in critical multicultural and anti-racist education.

Affirm, validate, and convey respect. The experience of perceived culpability within multicultural education is normal. Therefore, normalizing White guilt and shame and conveying compassion for the discomfort that students might feel are ways to affirm and validate their experience. This can be challenging when, for example, students' prejudices manifest in class, sometimes unabashedly (e.g., Garcia & Van Soest, 1999). But concepts like strategic empathy (Zembylas, 2012) can help instructors maintain an appreciation of a range of affective experiences within multicultural education.

Help identify feelings and discuss reactions. It is not easy to openly acknowledge feelings of guilt and

shame, of any kind. Storrs (2012) observed that for course curricula laden with reactive material, private journaling, as compared to group discussions, resulted in a higher number of students opening up about sensitive topics. Mio and Barker-Hackett (2003) also discussed ways to combine journaling with other course activities to offer students a more comprehensive learning experience.   The concept of emotional intelligence (Goleman, 2005) might be another useful tool, as it can help students acquire skills to be aware of and manage their feelings, build empathy, and ultimately learn how to relate to one-self and others.

Build the relationship.   As an instructor, cultivating a positive relational milieu in class is essential for a student to feel safe enough to verbalize uncomfortable thoughts and feelings. Higher education scholars (e.g., Estrada, 2015; Myers, 2008) recommend the use of the pedagogical concept known as the teaching alliance to strengthen the quality of the dyadic student-instructor relationship.   In addition, Estrada (2015) offers a summary of interventions proposed by other multicultural education pedagogues aimed at bolstering the sense of interpersonal trust with students, which can facilitate their expression of White guilt and shame should they experience it..

Conclusion

It is important to have an empirical body of knowledge on the interdependence between student emotions and learning outcomes in critical multicultural education, as this can further the development of more sophisticated teaching interventions.   In fact, those teaching blueprints call for instructors to work with a range of student emotions or, in other words, to be able to teach using the whole student experience.

References

Ancis, J. R., & Szymanski, D. M. (2001). Awareness of White privilege among White counseling trainees. *The Counseling Psychologist, 29*(4), 548-569. doi: 10.1177/0011000001294005

Banks, J. A., & Banks, C. A. M. (2012). *Handbook of research on multicultural education*. New York, NY: Macmillan.

Boatright-Horowitz, S. L., Marraccini, M. E., & Harps-Logan, Y. (2012). Teaching antiracism: College students' emotional and cognitive reactions to learning about White privilege. *Journal of Black Studies, 43*(8), 893-911. doi: 10.1177/0021934712463235

Bonilla-Silva, E. (1996). Rethinking racism: Toward a structural interpretation. *American Sociological Review, 62*, 465-480. doi: 10.2307/2657316

Bonilla-Silva, E. (2013). *Racism without racists: Color-blind racism and the persistence of racial inequality in America*. Lanham, MD: Rowman & Littlefield.

Brotherton, S. J. (1996). *Counselor education for the twenty-first century*. Westport: Bergin & Garvey.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence.

Cross, M., & Naidoo, D. (2012). Race, diversity pedagogy: Mediated learning experience for transforming racist habitus and predispositions. *The Review of Education, Pedagogy, and Cultural Studies, 34*, 227-244. doi: 10.1080/10714413.2012.73558

Drake, B. (2014). *Ferguson highlights deep divisions between Blacks and Whites in America*. Pew Research Center. Retrieved from http://pewrsr.ch/1rlR88X

Estrada, F. (2015). The teaching alliance in multicultural counseling course education: A framework for examining and strengthening the student-instructor relationship. *International Journal for the Advancement in Counseling, 37*(3), 233-247. doi: 10.1007/s10447-015-9240-9

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology, 51*, 115-134. doi: 10.1037/0022-0167.51.1.115

Garcia, B., & Van Soest, D. (1999). Teaching about diversity and oppression. *Journal of Teaching in Social Work, 18*(1), 149-167. doi: 10.1177/0002764207307740

Garcia, B., & Van Soest, D. (2000). Facilitating learning on diversity: Challenges to the professor. *Journal of Ethnic & Cultural Diversity in Social Work, 9*(1-2), 21-39. Retrieved from http://ejournals.ebsco.com.ezproxy1.lib.asu.edu/direct.asp?ArticleID=45768FBE5C86DBD52B8B

Goleman, D. (2005). *Emotional intelligence: Why it can matter more than IQ*. New York, NY: Bantam Books.

Goodman, D. (2011). *Promoting diversity and social justice: Educating people from privileged groups* (2nd ed.) Florence, KY: Routledge.

Grzanka, P. R. (2010). *White guilt: Race, gender, sexuality and emergent racisms in the contemporary United States* (Doctoral dissertation). Retrieved from http://hdl.handle.net/1903/10333

Grzanka, P. R., & Estrada, F. (2011, August). *Construct validation for the Test of White Guilt and Shame Measure*. Poster presented at the annual American Psychological Association conference, Washington, D.C.

Henry, P. J., & Sears, D. O. (2002). The Symbolic Racism 2000 Scale. *Political Psychology, 23*(2), 253-283. doi: 10.1111/0162-895X.00281

Hill, C. E. (2014). *Helping skills: Facilitating exploration, insight, and action* (4th ed.). Washington, DC: American Psychological Association.

Iyer, A., Leach, C. W., & Crosby, F. J. (2003). White guilt and racial compensation: The benefits and limits of self-focus. *Personality & Social Psychology Bulletin, 29*(1), 117-129. doi: 10.1177/0146167202238377

Kernahan, C., & Davis, T. (2007). Changing perspective: How learning about racism influences student awareness and emotion. *Teaching of Psychology, 34*(1), 49-52. doi: 10.1207/s15328023top3401_12

Kivel, P. (2011). *Uprooting racism: How White people can work for racial justice*. Gabriola Island, BC: New Society Publishers.

Krogstad, J. M. (2014). *A view of the future through kindergarten demographics*. Pew Research Center. Retrieved from http://pewrsr.ch/TQQAaK

Linnenbrink-Garcia, L., & Pekrun, R. (2011). Student emotions and academic engagement. *Contemporary Educational Psychology, 36*(1), 1-3.

Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality & Social Psychology Bulletin, 18*(3), 302-318. doi: 10.1177/0146167292183006

May, S., & Sleeter, C. E. (2010). *Critical multiculturalism: Theory and praxis*. New York, NY: Routledge.

Mio, J. S., & Barker-Hackett, L. (2003). Reaction papers and journal writing as techniques for assessing resistance in multicultural courses. *Journal of Multicultural Counseling and Development, 31*, 12-19. doi: 10.1002/j.2161-1912.2003.tb00526.x

Myers, S. A. (2008). Working alliances in college classrooms. *Teaching of Psychology, 35*, 29- 32. doi: 10.1080/00986280701818490

Neville, H. A., Lilly, R. L., Duran, G., Lee, R. M., & Browne, L. (2000). Construction and initial validation of the Color-Blind Racial Attitudes scale. *Journal of Counseling Psychology, 47*(1), 59-70. doi: 10.1037//0022-0167.47.1.59

Powell, A. A., Branscombe, N. R., & Schmitt, M. T. (2005). Inequality as ingroup privilege or outgroup disadvantage: The impact of group focus on collective guilt and interracial attitudes. *Personality and Social Psychology Bulletin, 31*(4), 508-521. doi: 10.1177/0146167204271713

Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling Psychology*, *57*(1), 1-10. Retrieved from http://0-dx.doi.org.linus.lmu.edu/10.1037/a0018082

Schutz, P. A., & Pekrun, R. (Eds.). (2007). *Emotion in education*. San Diego, CA: Elsevier Academic Press.

Schwartz, S. J., Luyckx, K., & Vignoles, V. L. (2011). *Handbook of Identity Theory and research: Structures and processes*. New York, NY: Springer.

Spanierman, L. B., Poteat, V. P., Wang, Y., & Oh, E. (2008). Psychosocial costs of racism to White counselors: Predicting various dimensions of multicultural counseling competence. *Journal of Counseling Psychology, 55*(1), 75-88. doi: 10.1037/0022-0167.55.1.75

Storrs, D. (2012). 'Keeping it real' with an emotional curriculum. *Teaching in Higher Education, 17*(1), 1-12. Retrieved from http://dx.doi.org/10.1080/13562517.2011.590976

Sue, D. W., Rivera, D. P., Watkins, N. L., Kim, R. H., Kim, S., & Williams, C. D. (2011). Racial dialogues: Challenges faculty of color face in the classroom. *Cultural Diversity and Ethnic Minority Psychology, 17*(3), 331-340. doi: 0.1037/a0024190

Swim, J. K., & Miller, D. L. (1999). White guilt: Its antecedents and consequences for attitudes toward affirmative action. *Personality & Social Psychology Bulletin, 25*(4), 500-514. doi: 10.1177/0146167299025004008

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston, MA: Allyn and Bacon.

Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. New York, NY: The Guilford Press.

Tatum, B. D. (1994). Teaching White students about racism: The search for White allies and the restoration of hope. *Teachers College Record, 95*(4), 462-476. Retrieved from http://www.tcrecord.org.ezproxy1.lib.asu.edu/Content.asp?ContentId=107

Tracy, J. L., Robins, R. W., & Tangney, J. P. (2007). *Self-conscious emotions: Theory and research*. New York, NY: Guilford Press.

U.S. Department of Education (2014). *Profile of undergraduate students 2011-2012*. National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubs2015/2015167.pdf

Zembylas, M. (2012). Pedagogies of strategic empathy: Navigating through the emotional complexities of anti-racism in higher education. *Teaching in Higher Education, 17*(2), 113-125.

Zembylas, M., Charalambous, C., & Charalambous, P. (2014). The schooling of emotion and memory: Analyzing emotional styles in the context of a teacher's pedagogical practices. *Teaching and Teacher Education, 44*, 69-80.

_____

FERNANDO ESTRADA is an assistant professor of counseling in the School of Education at Loyola Marymount University. His work focuses on understanding how cultural factors like gender, race, and sexual orientation intersect with psychological and pedagogical interventions.

He received his BS in psychology from the University of California, San Diego and both an MA and EdM in counseling psychology from Teachers College, Columbia University. He received his PhD in counseling psychology from Arizona State University.

GENEVA MATTHEWS is an Assistant Principal at Environmental Charter Middle School in Inglewood, California. She graduated with a MA in counseling from the School of Education at Loyola Marymount University and a BA in sociology from the University of California, Riverside. She is currently a doctoral student in Educational Leadership at Loyola Marymount University.

Appendix

PRESENTATION

"Hello. I teach at a university and would like you to learn a new concept called racialized social systems. There are 2 parts to this presentation, each about 1 minute long, followed by some questions. Ok, let's get started.

The concept of race, as when I refer to myself as a White man, is in fact socially constructed. But why? The answer lies in the idea that modern social systems, such as the United States and Spain, are governed by hierarchical social patterns. These are essentially types of social relations between people based on uneven power and resources. They exist to establish social order.

So, the concept of race was created to help distribute power and resources among people based on physical features and to maintain social order. Today, a racialized social system reproduces these relational patterns.

Racialized social system are highly influenced by powerful institutions like the educational system. Through them, a racialized system orders human relations by promoting a real difference in social status. In other words, a real difference in living with social privilege or social oppression based on race.

On a final note, because a racialized social system operates on an institutional level, it is racial group membership and not individual choice that dictates whether a person receives privileges or experiences oppression. That's the end of the presentation. Before you go, there are some final questions for you to answer."

Navigating the Use of Cogenerative Dialogues: Practical Considerations for Graduate Faculty

Ginny Jones Boss
Michigan State University

Chris Linder
University of Georgia

In this study, we explored cogenerative dialogue (cogen) as a tool for learner-centered teaching in graduate education. Cogen consists of small group dialogues among instructors and students for the purposes of improving course processes. We engaged cogen during a semester-long, graduate-level campus environments course. Using the theoretical framework of cultural-historical activity theory (CHAT) and case study methodology, we explored cogen's use in highlighting ways in which our course processes were enhanced or impeded. Our analysis resulted in the prominent themes of the role of physical space, power dynamics, and internal and external influences on the potential for learning in our classroom. We conclude by offering considerations for educators interested in using cogen in a graduate education course as a result of our study.

We, the authors and instructors of the course discussed in this study, strive to create classroom environments that foster student agency in learning and challenge power structures inherently built into traditional classroom structures. Using cogenerative dialogue (cogen) in our class provided both students and instructors an opportunity to engage in a learning partnership in which we all had responsibility in guiding course processes and challenging power structures inherent in our learning environment. We found cogen to be a powerful tool in transforming not only how students thought about learning in our class, but also how students thought about learning beyond it (Linder & Jones, 2015). In this paper, we discuss cogen, a learner-centered pedagogy; cultural-historical activity theory, the theoretical framework guiding our course and research design; and our reflections on using cogen in a graduate education course.

Learner-centered teaching can have tremendous positive impacts on student learning, engagement, and retention of content (Blumberg & Everett, 2004). Learner-centered teachers create classroom environments in which responsibility is shared with students by providing them opportunities to guide the learning process. These opportunities encourage "collaboration, acknowledging the classroom (be it virtual or real) as a community where everyone shares the learning agenda" (Weimer, 2013, p. 15). Learner-centered teaching shifts the role of the instructor from lecturer to facilitator. In the role of facilitator, instructors must be equipped with multiple pedagogical tools and work with learners to negotiate how those tools will be best used to facilitate learning. With ever-increasing approaches to learner-centered teaching (Weimer, 2013), educators interested in this pedagogical approach may have difficulty identifying effective practices. In this paper, we highlight the pedagogical practice of cogen.

Cogen provides students and faculty opportunities to work together to create learning environments that support a variety of learning styles and practices (Murphy & Carlisle, 2008; Tobin & Roth, 2006). It involves small group discussions in which students and instructors in the learning environment reflect on the course processes and make appropriate modifications throughout the semester. In this way, cogen becomes an intentional space for focusing on the classroom learning environment as its object of study (Roth, Tobin, & Zimmerman, 2002). The instructors maintain responsibility for introducing content in the course, but students move from "participation to contribution" (Murphy & Carlisle, 2008, p. 497) in the class process.

Cogen also provides opportunities to address social power dynamics in learning environments (Bondi, 2013; Scantlebury & LaVan, 2006). One intention of cogen is to interrupt formal power dynamics in classrooms. Therefore, it is crucial instructors use cogen to create a space in which power, privilege, and oppression are named and addressed. For example, women and girls may be socialized to avoid conflict and may choose not to share perspectives counter to those with more formal and informal authority (Scantlebury & LaVan, 2006). Since cogen involves making explicit all observed dynamics in the learning environment, it becomes a space in which students and instructors can attempt to mitigate inequities through explicit discussion and behavior (Bondi, 2013).

We designed and facilitated a course on campus environments in which we used cogen as a means to guide students into taking ownership of their learning. Simultaneously, we conducted research around the use of cogen in our learning environment. While there is a growing body of literature around the use of cogen in primary and secondary teacher education (Murphy & Carlisle, 2008; Stith & Roth, 2010; Tobin & Roth, 2006), very little is written about it related to teaching and learning in collegiate or graduate contexts. As such, we struggled to make sense of what cogen may look like within our own graduate classroom. One other researcher, Dr. Stephanie Bondi, has used and

written about cogen in her work with graduate students (Bondi, 2011). We connected with Dr. Bondi prior to starting the course to strategize how we might go about using cogen in our classroom. While we still had to do the work of figuring out the aspects of cogen that fit within our learning context, our conversation with Dr. Bondi helped to demystify the process. This paper is an attempt to pay forward that benefit.

Theoretical Framework

Cultural-historical activity theory (CHAT) examines human thought and action within the larger cultural and historical contexts in which they occur (Roth & Lee, 2007). When used in education inquiry, CHAT explores how learning opportunities are transformed by the collaborative efforts of instructors and students to improve the learning environment (Murphy & Carlisle, 2008). The learning environment, through the lens of CHAT, is considered an activity system. As the primary unit of analysis, the activity system's interrelated parts are explored in order to make them explicit as well as address contradictions within the system (Foot, 2014; Murphy & Carlisle, 2008).

Activity systems comprise six interrelated components: subject(s), object(s), tools/artifacts, community, rules, and division of labor (Foot, 2014). Our activity system for this study was our classroom learning environment, in which both students and instructors were subjects. Collectively, we worked toward the objects of shared power and agency in order to achieve the outcome of deeper learning. Several tools and artifacts mediated our efforts toward our object. At a macro level, our learning was mediated through the engagement of a body of content knowledge connected to campus environments. As instructors, we brought a multitude of tools to use in facilitation of learning, including small and large group discussion, engagement with social media, creative representations of content, and theory-to-practice reflections. However, the primary tool introduced to our activity system to mediate deeper learning was the use of cogen. In terms of community, we had a number of community influences on our activity system both within and outside of our classroom context: students and instructors in the class, assistantship providers, other students and faculty in the program, and a multitude of personally significant relationships connected to each subject beyond the student affairs program. The structure of cogen included a set of rules which governed how we used it within our activity system. Additionally, there were external rules such as the amount of time allotted for class, university-mandated structures for the course, and programmatic structures, in particular the comprehensive exams

engaged in by students. Finally, in terms of divisions of labor, cogen provided an opportunity wherein the division of labor was shared among the students and instructors. For example, at the conclusion of each cogen session, each member would make a personal commitment to improve future class sessions based on the feedback we shared with one another.

CHAT also gives focus to the exploration of contradictions within the activity system (Foot, 2014). Contradictions in an activity system can happen both internally and externally. Contradictions are explained as things impeding progress toward the desired outcome (Roth & Tobin, 2004) or influential factors presenting opportunities for growth within the activity system (Foot, 2014). In either definition, discovery of contradictions presents subjects with an opportunity to address them and continue progress toward the desired goal (Foot, 2014; Roth & Lee, 2007). Contradictions serve to highlight the possibilities for expansion and growth. When subjects address contradictions, they are better able to expand their activity system beyond its current state.

Methodology

We employed a case study methodology to research the use of cogenerative dialogues in our course. Case study is an effective methodology in studying phenomena when boundaries between the content and process are not always clear (Yin, 2009). Such was the case in exploring the use of cogen in our classroom context. As instructors we maintained responsibility for introducing the content, but our approach was dictated by changing course processes in accordance to cogen discussions. The case study approach allowed us to highlight the interplay of content and process in our class. Specifically, we employed an exploratory case study design (Yin, 2009) to better understand cogen as a pedagogical practice with students in a graduate-level campus environments course.

Case Description

Our class was a semester-long course in a cohort-based college student affairs administration program at a four-year research university in the United States. The student affairs program is structured such that students take a series of courses in a prescribed sequence over two years. During the last semester of their second year, students take comprehensive exams which require them to incorporate their learning from classes across the curriculum. The focus of our class was to examine the impacts campus environments have on their community members. This involved theoretical examinations of physical and human aggregate characteristics, organizational structures, and the constructed environment—implicit assumptions held by

campus stakeholders (Strange & Banning, 2001). First-year master's students in their second semester of study enrolled in this course. The students in the class, with the exception of one student, were part of a 19 student graduate cohort. Two instructors led the class: a tenure-track assistant professor in her first year and a doctoral candidate.

Course Design

Keeping previous research results from cogen in mind (Bondi, 2013) and given the subject matter of our course, we were intentional about what classroom spaces we chose. We believed traditional classroom spaces may impede our efforts at challenging power dynamics and providing comfortable and safe spaces for critical discourse. Additionally, the course's focus on campus environments encouraged us to seek a variety of locations around campus to explore various environments.. We secured different spaces across campus in which to meet, including multipurpose rooms with movable sofas and cushioned chairs and traditional classrooms in non-traditional spaces (residence halls).

We were intentional in introducing and structuring the cogen experiences. To introduce students to cogen, we provided an article describing its use in graduate education (Bondi, 2013). Additionally, we explained the focus of cogen was on evaluating the learning process more than content of the course. Students were required to participate in two sessions of cogen and write a reflection paper about their experiences with cogen at the end of the semester. At the start of the semester, students were randomly assigned to groups of four and were given the option to switch with other classmates if they had schedule conflicts. On their assigned days, students would meet with the two instructors for one hour to participate in cogen. In this research, and in past research (Bondi, 2011), cogen sessions were held after the class had concluded with a small group of students and the instructors. We typically began cogen sessions with an open-ended question such as, "What did you notice in class this week?," and the dialogue would proceed from there. Sessions would conclude with a prompt, such as: "As a result of our conversation here, what will we take responsibility for in improving future class sessions?" As instructors, we made use of the content of cogen sessions to determine what learning tools we would employ for future class sessions. Additionally, students typically spoke of using what they learned from cogen to improve their personal interactions with the larger class.

Data Collection and Analysis

Although student participation in the dialogues was required, students were not required to participate in the research project. We collected data from the two instructors and 19 of the 20 students enrolled in the class in three different ways: (a) two researcher

reflection journals written in connection with the dialogues, (b) eight audio taped and transcribed cogen sessions, and (c) 19 student reflection papers on their experiences of the cogen process.

To analyze the data, we developed a codebook based on individual and collaborative review of the transcripts and reflections (MacQueen, McLellan, Kay, & Milstein, 1998). We began the process by dividing half (4) of the cogen transcripts and individually coding them. We then met together to discuss similarities and differences to establish preliminary categories and codes. Based off of the initial categories and codes, we begin creating the codebook. Throughout the process of making the codebook, we defined and refined codes connected to practical considerations of using cogen as a pedagogical tool (Yin, 2009). Our codebook included broad categories, individual codes associated with each category, and a definition of each code. Individually, both researchers used the codebook to analyze all data, including the instructor/researcher reflection journals, cogen transcripts, and student reflection papers. When necessary, we added and defined emergent categories and codes if we came across information that did not fit our initial codebook. After all data were coded, we looked across the data and identified several themes related to practical aspects of cogen.

We attended to matters of authenticity and trustworthiness (Lincoln & Guba, 1985) in our findings in a number of ways. The nature of cogen provided us an opportunity to engage catalytic authenticity by using information to make changes throughout the course (Guba & Lincoln, 2008). During post-data collection analysis, we employed member-checking by providing student participants our research findings and soliciting their feedback. Student's participant feedback indicated our findings resonated with their experience of the course and cogen. We have also partnered with the student-participants to present our findings at regional and national conferences. This provided us an opportunity to engage in peer debriefing (Lincoln, 2001).

Findings

In the next section of this paper, we use student and instructor reflections as well as excerpts of cogen discussions to highlight practical considerations for using cogen in graduate education. The themes of the role of physical space, the difficulty of separating power and meaning making, and internal and external contextual influences on classroom spaces frequently recurred in the data

Space Matters

One area of focus students highlighted during cogen was the role physical classroom spaces played in

facilitating dialogue. We held classes in various spaces on campus; some of these spaces closely resembled traditional classrooms with chairs and tables/desks while others were multipurpose rooms with different combinations of tables, sofas, and chairs. Similar to previous research (Bondi, 2013), our study indicated space was particularly salient when conducting cogen. As instructors, we were acutely attuned to energy levels both during formal class time and in our cogen sessions. In both instances we recognized that students seemed to respond more positively to the non-traditional spaces, which included movable sofas, lounge chairs, open space, and much more light than traditional academic classroom settings. Students appreciated spaces that provided opportunities for "informal" conversations.

Though using alternative spaces provided much benefit, we experienced challenges navigating the bureaucracy of space on campus. We were part of a campus in which there was no centralized method of reserving spaces across campus, and the demand on non-traditional spaces made it difficult at times to obtain what we desired. On the weeks we could not find availability in multipurpose rooms, we opted for traditional classrooms in non-traditional spaces. Despite the fact we used traditional classroom spaces in non-traditional locations, such as residence halls or the student union, there was a noticeable change in student interaction in those spaces. Students shared both during their cogen and their end-of-semester reflections about the impact of the space on the climate of the classroom and the dialogues. Atticus shared the following:

> In the beginning we read that article [about cogen], and then we were meeting in the residence hall, and it made sense to me because it was related. Then, as we started moving across campus, moving into nicer classrooms but still in a square formation table it made less sense to me as to why we were meeting in those spaces. I felt like it was nice to see campus, but then we were still like in a classroom setting. Whereas, in the beginning, it was like everyone gets to sit in a nice couch. I felt like that changed the environment, kind of, or the way we discussed things.

Courtney, also referring to one of the traditional classroom spaces used, commented, "I understand not one place is going to be great for everyone, but it felt heavier the times we had to meet [in that space]." One of the ways we attempted to alleviate the impact of the space on the learning process was by identifying closely situated alternative spaces for the dialogue portions of that class session or cogen. For example, one of the more traditional classroom spaces had a lounge not too far off from it and to which we would move for the purposes of engaging dialogue. There was a noticeable change in energy levels when students interacted in those spaces.

Attending to Power

Issues of power came up frequently in our cogenerative dialogues. As instructors, we noticed students frequently looked to us for the right answer, and, in cogen, students revealed they had also become aware of this trend. We would also sense hesitancy on the part of the students: they seemed to be feeling out the "right" way to go about the cogen process. Despite our attempts to minimize our power in the learning situation, some students still felt hesitant to trust their own processes of meaning making. During a cogen session Skyler noted the following:

> …every time y'all come by a conversation, I'll be talking, and you get there and I'm like, "oh my gosh, what do I say? Is this right? She could tell me this is wrong right now." So, I always get worried in class, even though I shouldn't get worried anymore, but when you come and listen, [I think] maybe [I] should stop talking…

Having space to discuss this phenomenon through cogen helped us to address it throughout the semester, but we wrestled with trying to empower students to trust their own knowledge. This points to the importance of on-going discussions related to power in the classroom, as well as the importance of intentionally taking steps to reduce instructor power. We did this by sitting with the students around tables in the classroom rather than standing at the front of the room and by encouraging the students to call us by our first names. Another way we did this was by engaging students in power dynamics during cogen. During a few cogen sessions, we mentioned our own struggles with breaking the habit of "giving students permission to share" by calling on people. This helped continue the conversation around how we could make our learning community more democratic, with the students taking more of the lead in making meaning. Students eventually began to dialogue about how they could shape the learning environment in a way that privileged their knowledge rather than looking for our approval. Houston was one of the students who brought this idea to cogen saying, "…I think it would be so awesome if we could, as a group, get away from this idea of discussing with the professor. We can discuss with one another; that'd be great." Throughout the semester we also began to notice a shift in behaviors. In her instructor/researcher reflection journal, Chris wrote the following:

> I am certainly seeing changes in class behaviors based on cogen discussions and it is so cool! I

noticed this week Olivia did a great job of talking to her classmates rather than directing her attention to me and/or Ginny. Additionally, James spoke up in the beginning of class and Spencer beautifully challenged his peers to think differently about gender versus sex.

We both reflected on specific times when we noticed students adapting their classroom behavior to address issues that arose during cogen discussions.

One power-related struggle we both reflected on in our journals was how to mitigate oppressive structures inherent in where we were situated. We were in an institution of higher education where instructors have real power over students by providing grades in the course, serving as references for jobs, and grading comprehensive exams which determine whether students will graduate. Both of us reflected in our journals on times when we struggled to make sense of how vulnerable to be and how much to try to connect with students as a colleague in addition to as an instructor. For example, Ginny recorded this in her journal:

> How do I converse as colleagues with all cogen members? Will it get easier to not be the "(co)instructor" in that space? How much of what students share do we challenge them to take control over changing in subsequent classes and how much do we take responsibility for changing?

Similarly, Chris reflected the following after the second cogen:

> The conversation seemed to stay surface level and students seemed to be nervous about being critical. Unfortunately, the power dynamic in the space was obvious and I wasn't sure how to address it. It made me skeptical of sharing too much since I knew my voice was carrying a lot of weight, yet part of breaking down the power differential is to participate as an equal in the conversation, so finding that balance was tough.

We continued to reflect on this challenge in our journals and with each other. Eventually, the power dynamic in cogen lessened some, yet institutional barriers never allowed for the power to dissipate completely.

Internal and External Influences on the Classroom

External factors, including program structure and cohort dynamics, also influenced classroom experiences. As mentioned before, students in our class were part of a student affairs master's program that culminated in the experience of taking comprehensive exams (comps). The program was also cohort-based in which students started in a group and took all classes throughout the program with the same group. These particular elements of program structure emerged as areas of focus during cogen.

Program structure. Students described having anxiety around comprehensive exams. They talked about how they felt pressure to make sure they were learning the "right" information in classes to be successful on their comps. They shared that some of this pressure was compounded by concern over being compared to the cohort ahead of them or by other faculty. Although they were appreciative of the attention we were giving in our class to learning processes, they expressed concern over whether or not it was adequately preparing them for their exams. One student expressed, "I think that a lot of our anxiety is due to comparison to the second years. Cuz I think we learned it in a very different way." Other students would say they believed instructors in other classes were teaching them the content in more traditional ways, and that made them feel more confident they had the "right" information for comps. They also spoke of wrestling with the tension of enjoying the constructive nature of our course versus the more prescriptive nature of other courses, but feeling uncertain about its effectiveness. Julio's account highlights this tension:

> I don't want to say I want you to teach to test, because I don't want to teach to the test. But I'm always worried that I'm not going to do as well on comps. … I love the fact that we write papers and get to approach it from our own thinking and learn through our own construction, but not necessarily being exposed to [the right knowledge]. …I don't like tests, but I'm also worried because that's a reality for this program.

Marilyn shared her experience in a conversation with a student in the cohort ahead of her. In a discussion on class experiences and comprehensive exams, the other student said to her "You're going to fail." Marilyn then shared, "I might have to brush up on my [knowledge], because [the other student] can articulate it very rigidly, very academically. You know, this is what [a particular theorist] says, this is what the stage is…"

Students were not the only ones who shared this concern. In both our instructor/ researcher journals, we wrote about feeling pressure to "teach to the test." Both of us questioned whether or not we needed to readjust course processes to focus more on imparting knowledge to the students lest we be held responsible for their poor performance on comps if they did indeed perform poorly.

Ginny reflected in her instructor journal about this:

All-in-all, I leave today's class and cogen experience wondering, *How do you model for a class there is no right answer but prepare them for being evaluated in a way that says this answer isn't right enough?* This is especially salient to me because I have no influence over how students are evaluated in their cumulative experiences and this class is an important part of that.

We discussed this challenge at length in our meetings and continually wrestled with ways to engage students related to both content and process. Eventually students seemed to recognize making meaning of the material for themselves resulted in them having a strong understanding of it. They became increasingly aware they did not need the instructors to tell them what they needed to know for comps. However, it presented a challenge for us in choosing to incorporate cogen into their classroom. We had to ask ourselves, does cogen fit with the overall philosophy of the program? How do we help students navigate the multiple, and sometimes contradicting, messages about what "knowing" means to different faculty?

Cohort dynamics. In addition to comparison issues that existed between the two master's cohorts, we experienced issues associated with intragroup cohort dynamics as well. Students expressed difficulty in navigating cohort relationships in and out of the classroom and often struggled to negotiate the difference between friendship and collegiality. Students expressed fear of negative consequences in their relationships with cohort mates based on their classroom participation. For example, Elizabeth shared the following:

> When we were talking about orientation, I had an unpopular opinion. I felt like because I had an unpopular opinion and chose to share it, I was then a bad person for having that unpopular opinion….[I] was hurt. Some of the things people were countering my argument with were not nice.

More than we anticipated going into this research, cogen often centered on cohort dynamics as they influenced our learning environment. Students expressed concern about their peers "talking about" them if they said something "wrong" in the classroom. One student succinctly articulated the importance of addressing this: "It's good to not ignore what's going on outside the classroom. Because of the cohort model, there's so much going on outside the classroom that definitely affects what's going on inside it, so it's hard to ignore, just pretend it's not happening." Furthermore, students spoke about how intragroup dynamics influenced how uncomfortable they were in sharing around certain topics. Julio highlighted this:

> Maybe it's our cohort, but there are certain groups of friends within our cohort. …sometimes the groups become like "oh, those people hang out most of the time." Clearly the [cogen] groups that happen are small and maybe that's why people are being more honest, but it also somewhat feels intimidating and frustrating.

In our own reflection journals, we also noted our surprise at how often we focused on cohort dynamics in cogen, as Chris highlighted in her journal:

> The heavy focus from some students on being friends with everyone in the cohort is still surprising to me. I would think by this point students would be clear they can have multiple and complex relationships with people and they don't need to be "friends" with everyone in order to have a successful graduate school experience.

We also struggled with whose responsibility it was—ours, the students, or some combination thereof—to address these dynamics. Ginny elaborated on this in her journal:

> The focus of the conversation was frustrating, because, again I was feeling as if they should be in a better place of giving each other the benefit of the doubt and not letting the life stuff suffocate out the learning opportunities. Students talked about not wanting to share in class because of the repercussions of it or not wanting to offend others. There is a real avoidance of negative feelings and emotions among the larger group of students that was voiced in this cogen group. That both saddens and frustrates me. How are they going to affect change, if they are afraid to make waves in this more insulated environment?

Cohort relationships were so much a focus of cogen that Courtney wrote in her reflection paper at the end of the semester, "I noticed that in a lot of our cogen reflections we spend a lot of time talking about our relationships with our peers rather than our feelings about class. They are, of course, intertwined, but I think that we were focusing too much on our cohort relations."

Discussion

Our experience with cogen revealed it to be an effective tool in creating space for more balanced student participation in the learning process. The use of cogen allows students to provide real-time feedback to course processes impeding or enhancing their learning, taking ownership over their own learning, and gaining a

clearer understanding of their role in the learning environment (Linder & Jones, 2015). In our classroom context, three major areas of consideration were salient: the role of physical space in mediating dialogues around course processes, the importance of dialogue in addressing issues of power within the classroom, and the impact of external influences on the learning environment and dialogic processes. In conjunction with CHAT, these considerations offer pertinent information for understanding the usefulness of cogen in graduate classrooms.

CHAT gives focus to the contradictions within the activity system, and within our activity system we had a number of contradictions. As mentioned before, contradictions "provide an understanding of [the activity system's] developmental trajectory" (Foot, 2014 p. 337). In our class, we were better able to maximize the potential for learning when we addressed contradictions around space, power, and internal and external influences. Cogen provided the students and us the means to name and address those contradictions.

When it came to concerns of space, students vocalized their concerns and appreciation for the role space played in facilitating our dialogues. It revealed to us the salience of place around fostering open dialogue. While we had gone into the semester with these considerations in mind, neither of us anticipated the strength of their impact. The contradiction here existed at the nexus of our own and students' cultural and historical understandings of what learning spaces were supposed to be and the potential to maximize learning by utilizing different kinds of environments. We discovered that it was difficult to navigate locating and finding spaces with availability during the semester. Had we known how impactful this element would be for our class and dialogues, we could have planned sooner for using different spaces and had greater success in securing them. Meeting in spaces with more comfortable and movable furniture served as an additional tool for fostering an environment in which all members of cogen could feel comfortable contributing.

The most complex system of contradictions we encountered were connected to attending to power dynamics. The complexity of this effort stemmed from the variation of individual and collective understandings of each of the subjects, in this instance the instructors and students, around issues of learning and identity. As displayed in our findings, years of socialization on the parts of the instructors and students made it difficult to break out of traditional classroom power structures, namely the instructors as authority. Even when we (the instructors and students) would address this power dynamic in cogen, we still struggled collectively to disrupt our behaviors associated with it. At one point, we all agreed students would no longer raise their hands or otherwise wait for the instructors to give them permission to share during class. Yet students would still looked to us for permission, and we would find ourselves nonverbally granting it. It took several cogen discussions to figure out what worked best for our environment to disrupt those practices. Some of those solutions included creating large group class discussion circles of which the instructors were not a part, providing more opportunities for dyad and small group discussion among students, and having students structure and present class content.

The external influence of program structure both presented its own contradictions and impacted how we could address other contradictions. Our efforts in disrupting traditional power dynamics were sometimes thwarted by the looming pressure of comprehensive exams. Though students desired the space to navigate their own learning, they also worried about their ability to do so and learn what they needed to in order perform well on comps. As instructors we also struggled. Our own educational philosophies fall in line with learner-centered approaches, but fear of job security, student evaluations, and perceptions from our colleagues impacted our interactions in class.

The complexity of cohort dynamics also proved challenging to address in the classroom space and illustrated the importance of considering power dynamics among the students and the instructors of the course. Cohort dynamics created conditions in which students did not always feel safe to engage in critical discourse with one another in the large group setting but became a major focus of discussion in the cogen setting. However, none of the students wanted to challenge each other for fear of repercussion. Students' hesitancy to confront each other presented a conundrum for us as instructors who recognized our stepping in and doing the work of challenging for them went against the democratic learning community that we, the instructors and students, were attempting to create.

Implications for Practice

Our findings present implications for practice for educators interested in using cogen in their own courses that transcend our specific course and program contexts. Given cogen's focus on examining learning processes over content, it has the potential to be an effective practice across disciplines. Several studies have documented the use of cogen in teacher education and in pre-collegiate STEM classes (Stith & Roth, 2010; Tobin & Roth, 2006), and a few have been documented in graduate education (Bondi, 2011; Linder & Jones, 2015). Future research on the use of cogen in at the undergraduate level could provide further insight to its usefulness in that context. In this section, we offer suggestions for educators interested in using cogen in their own classrooms.

First, the space in which cogen is conducted has the potential to promote or constrain dialogue. It was a focus of our class to use various spaces for our class sessions. Through this process, we discovered the spaces we used also impacted student participation in cogen. This finding is consistent with another study that used cogen and was not situated in a campus environments course (Bondi, 2011). We recognize it may not be a logistical possibility for many courses to use alternative spaces for the entire class session. However, because cogen dialogues usually occur outside of scheduled class time and with a small subsection of the class, instructors may inquire after alternative spaces to meet for the purposes of cogen, including a lounge space in the building the class session was held or nearby.

Second, cogen can be a powerful companion tool for educators interested in creating learner-centered classrooms. As long as current institutional structures exist, instructors will wrestle with tensions around power in the classroom (Weimer, 2013). In our classroom, there were a few gatekeeping structures, including students' anxiety related to comprehensive exams. However, for other courses there may be a different set of external pressures and structures impacting how students experience class. Our class was structured to be learner-centered, not just through the use of cogen, but also through challenging students to rely on their own ways of making meaning without us giving them the "right" answer, granting students choice over how to engage some assignments, and in one case having them design the assignment activity altogether. These are all pedagogical tools many educators might use across disciplines, and they are also potential areas for students' resistance if they are accustomed to classes that are more teacher-centered (Weimer, 2013). As was highlighted in our findings, students spoke of their discomfort in taking agency over their own learning. Cogen becomes an effective tool in naming this resistance and addressing it collectively (Bondi, 2013; Scantlebury & LaVan, 2006). We found when students named their discomfort and we, as instructors, provided more clarity and transparency about our approaches, students more readily and positively responded to learner-centered techniques. In fact, they begin to suggest ways in which our class could promote learner-centered activities.

Cogen takes more time and planning than traditional teacher-centered methods. Educators interested in using this tool will need to examine the fitness for using cogen given their own contexts. In our course, we held cogen for an hour outside of class. However, the literature does not present a "one size fits all" format for cogen sessions. Varied institutional constraints about how and when to use cogen will warrant investigation and decision making on the part of the instructor. For instance, it may make sense to use the last 30 minutes of a class session to conduct cogen to ensure students are available for participation. Instructors also have to be prepared to restructure course plans throughout the semester or operate with a loosely structured course plan going into the semester. One of the most powerful elements of cogen is the action associated with what comes up in the dialogues on the part of the instructors and students (Linder & Jones, 2015). When students realize their feedback was considered and impacted course processes, this increases their investment in the course and learning process.

Conclusion

Because so little is written about the use of cogen in graduate education, our research and reflection provides insight for those interested in using this pedagogical tool in their own class contexts. Our findings revealed a few practical considerations for those interested in using cogen in graduate education. Cogen served as a great place for students to express their struggles in trusting their own voices, and it gave us as instructors an opportunity to encourage them to do so and examine how to create more space for that in the classroom. Our findings also called attention to internal and external influences that may impact the learning process and focus of cogen. It is a great reminder of the power of context in learning and how programmatic structures can influence the learning process. Considering these aspects of cogen can be helpful when designing classroom environments that maximize student learning and development.

References

Blumberg, P., & Everett, J. (2004). Achieving a campus consensus on learning-centered teaching: Process and outcomes. *To Improve the Academy*, *23,* 191-210.

Bondi, S. (2011). *Complicity with the neocolonial project in education: A deconstruction of student affairs preparation practices* (Unpublished doctoral dissertation). Retrieved from http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article= 1513&context=etd.

Bondi, S. (2013). Using cogenerative dialogues to improve teaching and learning. *About Campus, 18*(3), 2-8. doi: 10.1002/abc.21117

Foot, K. A. (2014). Cultural-Historical Activity Theory: Exploring a theory to inform practice and research. *Journal of Human Behavior in the Social Environment, 24*(3), 329-347, doi: 10.1080/10911359.2013.831011

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

Linder, C., & Jones, G. M. (2015, March). Exploring cohort dynamics through cogenerative dialogue. Research presented at the annual meeting of the American College Personnel Association. Tampa, FL.

MacQueen, K., McLellan, E., Kay, K., & Milstein, B. (1998). Codebook development for team-based qualitative analysis. *Cultural Anthropology Methods, 10*(2), 31–36.

Murphy, C., & Carlisle, K. (2008). Situating relational ontology and transformative activist stance within the 'everyday' practice of coteaching and cogenerative dialogue. *Cultural Studies of Science Education, 3*, 493-506. doi: 0.1007/s11422-008-9124-y

Roth, W., & Lee, Y. (2007). "Vygotsky's neglected legacy": Cultural-historical activity theory. *Review of Educational Research, 77*(2), 186-232.

Roth, W., Tobin, K., & Zimmerman, A. (2002). Coteaching/cogenerative dialoguing: Learning environments research as classroom praxis. *Learning Environments Research, 5*, 1-29.

Scantlebury, K., & LaVan, S. (2006). Re-visioning cogenerative dialogues as feminist pedagogy/research. *Forum: Qualitative Social Research, 7*(2), 1-10. Retrieved http://www.qualitativeresearch.net/index.php/fqs/article/view/126/266.

Stith, I., & Roth, W. (2010). Teaching as mediation: The co-generative dialogue and ethical understandings. *Teaching and Teacher Education, 26*, 363-370.

Strange, C. C., & Banning, J. H. (2001). *Education by design: Creating campus learning environments that work*. San Francisco, CA: Jossey-Bass.

Tobin, K., & Roth, W. (2006). *Teaching to learn: A view from the field.* Rotterdam, The Netherlands: Sense Publishers.

Weimer, M. (2013). *Learner-centered teaching: Five key changes to practice.* San Francisco, CA: Jossey-Bass.

Yin, R. K. (2009). *Case study research: Design and methods* (4th Ed.). Thousand Oaks, CA: Sage.

_____

GINNY JONES BOSS is an assistant professor in the Higher, Adult, Lifelong Education program at Michigan State University. Her teaching and research interests include: the scholarship of teaching and learning, scholarship engagement among higher ed/student affairs practitioners, partnership and critical discourse among higher ed/student affairs faculty and administrators, and graduate student learning and development.

CHRIS LINDER is a social justice educator and Assistant Professor in the College Student Affairs Administration program at the University of Georgia. She has taught undergraduate and graduate courses on equity and inclusion for over 10 years, including courses in women's studies and ethnic studies. Her research interests include campus environments, student activism, and the scholarship of teaching and learning.

Finding Relevance, Competence, and Enjoyment: The Development of Domain Identification and Interest in First-Year Science Majors

Chloe Ruff
Gettysburg College

The purpose of this qualitative study was to examine how first-year college students perceive their development of domain identification with, and interest in, their prospective science major during their initial year of college. Four themes emerged from the coding and analysis of interviews with eight first-year science students: Self-Definition in Flux, Feeling Competent, Expressing Interest through Enjoyment, and Relevant to Me. These themes were mainly consistent with the current model of domain identification (Osborne & Jones, 2011) but differ from the current model of interest development (Hidi & Renninger, 2006). Theoretical and practical implications are included for faculty and advisors working with first-year science students.

First-year college students arrive with educational backgrounds that inform their initial choices in college and influence their perceptions of the academic experiences they will encounter (Astin, 1993; Thompson, 2007). Students entering college with pre-selected majors choose their majors based on a variety of academic and social experiences outside of the college context and already have developed knowledge and interest related to their major. These students may self-identify with their majors before attending their first college course. As colleges and universities explore methods to support and retain students, particularly students with a strong interest in science, technology, engineering, and mathematic (STEM) fields, motivation constructs such as domain identification and student interest are useful for examining how these first-year students perceive their initial experiences within their prospective major.

The constructs of domain identification and interest develop from an individual's educational and social experiences and influence later academic outcomes (Osborne & Jones, 2011; Renninger, 2010). Domain identification describes "the extent to which an individual defines the self through a role or performance in a particular domain" (Osborne & Jones, 2011, p. 132), whereas interest encompasses both an individual's engagement with a domain and predisposition to re-engage with the domain (Renninger, 2010). Both of these constructs focus attention on the impact of the value that an individual holds for a domain on later academic, social, and emotional outcomes (Renninger, 2010; Walker, Greene, & Mansell, 2006).

The initial courses that students take in their prospective major provide them with an opportunity to increase knowledge of, and value for, the domain. Ideally, these courses provide students with an opportunity to envision themselves within the domain of their major. Academic and social experiences students have in this first year may reinforce, negate, or cause them to re-evaluate their prior experiences and perceptions (Harackiewicz, Durik, Barron, Linnenbrink-Garcia, & Tauer, 2008). In each of these cases, students' identification and interest in the major may further develop or weaken. Prior studies in interest and domain identification have examined this period of transition in first-year college students through quantitative methodologies (Harackiewicz et al., 2008; Osborne, 1997). The present study was designed to qualitatively examine how students reflect on, and describe in their own words, their identification with, and interest in, their prospective science major.

Theoretical Background

Domain Identification

Domain identification (DI) is the *selective valuing* of a domain as important to the self-concept or self-esteem of an individual (Osborne & Jones, 2011). This definition is based in the symbolic interactionist conception of self-esteem, in which the feedback an individual receives from the environment (in terms of academic performance, among other things) filters through the individual's perceptions of the outcomes and evaluation of the importance of the domain to their self-esteem. Thus, performance in a domain that an individual highly values has a greater impact on an individual than performance in a domain the individual does not value (Osborne & Jones, 2011).

Academic DI upon entering high school is positively related to learning and performance goals, as well as to the intrinsic valuing of academics, perceived ability, self-regulation, and both deep and shallow cognitive processing, and it is negatively correlated with absenteeism and behavioral referrals (Osborne & Walker, 2006). At a college level, academic DI predicted GPA after one semester and again after two years, even when controlling for sex, race, and self-esteem (Osborne, 1997). Additionally, students at different levels of academic standing exhibited

Figure 1
. Model of a student's physics identification (adapted from Osborne & Jones, 2011)
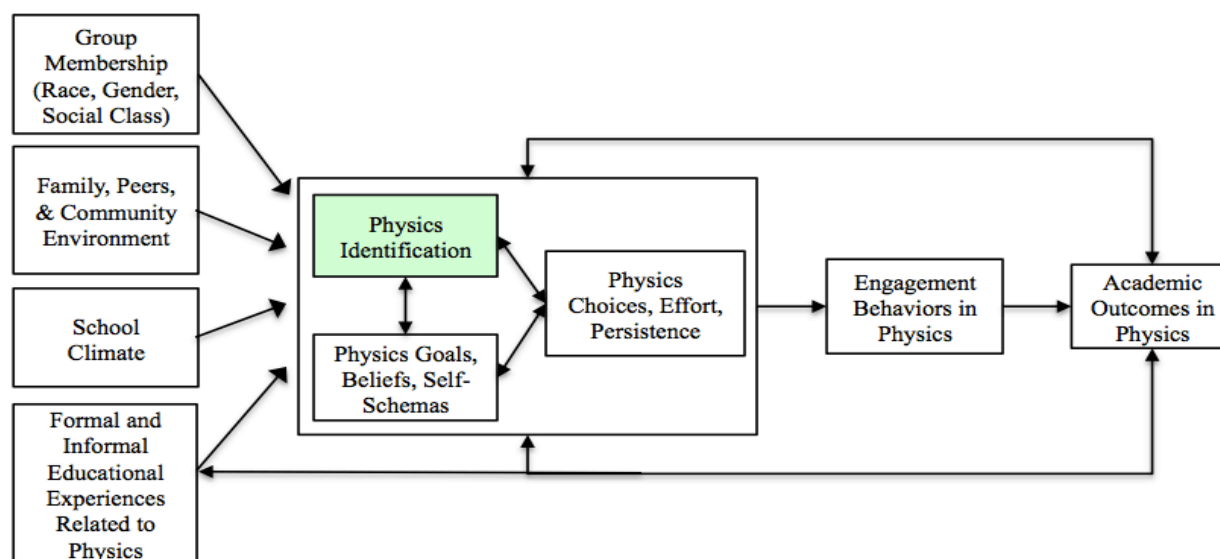
significantly different levels of identification with academics. A high level of identification with academics measured upon entering community college was related to positive academic outcomes such as achieving the Dean's List, whereas a low level of academic identification was related to withdrawal or academic probation (Osborne, 1997).

Social and academic factors that influence the development of DI include: group membership (e.g., gender, race, class); family, peer, and community environment; school climate; and educational experiences (see Osborne & Jones, 2011 for more information). Through these background factors, DI is related to other motivation constructs (see Figure 1 for an example of a student's physics identification).

DI is likely cyclical, both influencing and influenced by academic engagement and performance. As such, identification with academics may be a stable concept, but it is not static and could be affected by frequent positive or negative academic outcomes. An individual's identification with a domain may decrease if he or she begins to receive performance outcomes that do not reflect his or her perception of ability or if the climate of the domain begins to emphasize negative stereotypes. Alternatively, this model shows how shifts in school climate or other precursors may also increase students' identification with the academic domain (Osborne & Jones, 2011).

Existing research examines DI writ large in the form of academic identification (Osborne, 1997; Osborne & Walker, 2006) and more focused forms of DI such as math identification or engineering identification (Jones, Paretti,

Hein, Knott, 2010; Jones, Ruff, & Paretti, 2013). Although theoretical models provide a description of how the development of DI should occur, further research is needed to understand how students develop different DIs (Osborne & Jones, 2011; Voelkl, 1997).

Researchers examining students' persistence in science also use the framework of *science identity*. Science identity is based in a situated learning framework in which students' beliefs, goals, and sense of themselves as a "science person" develops from their participation in various communities of practice (e.g., classroom, extracurricular; Aschbacher, Li, & Roth, 2010; Gee, 2000). Research on science identity is focused on the development of identity through the interplay between the individual and social support from teachers, parents, counselors, and peers. This research overlaps with the "group membership" background factor in Osborne and Jones' (2011) model of DI; however, DI focuses on the internal interplay between students' performance and perceptions of value for science. Science identity explores the influence of participation in a community on an individual's identity, whereas science DI explores how an individual internally evaluates this participation. The two frameworks likely work in concert; however, the present study focuses on students' internal perceptions and evaluation of their experiences.

Interest

Interest is used as a broad term both colloquially and theoretically to include a range of related concepts. The present study examines the development of individual

interest. Thus, Hidi and Renninger's (2006) description of interest is more appropriate than definitions limited to activity-based, situational interest. They defined interest as a psychological state of engaging both cognitively and affectively with "particular classes of objects, events, or ideas" (Hidi & Renninger, 2006, p. 112); a predisposition to re-engage with this content over time; and a construct that is comprised of the knowledge, stored value, and feelings related to the content which result from the individual's engagement with the content over time. Hidi and Renninger (2006) suggested that growth in affect or positive feelings, stored knowledge, and stored value are the key components propelling the development of interest from an externally supported situational interest to an internally supported individual interest. In describing the components of interest, Renninger (2010) defined *affect* as the feelings that an individual connects with engagement with a subject matter. *Stored knowledge* is considered as changes in cognitive structure related to engagement with the content and *stored value* as the combination of feelings of competence and the emotions related to engagement with the content (Renninger, 2010).

Hidi and Renninger (2006) proposed that situational interest is initially triggered by an affective response to an engagement with an activity or piece of content material. This affective response leads individuals to re-engage with the material and in the process develop knowledge related to the specific material and the larger content topic. As this happens, individuals also begin to develop stored value for the content area and may come to have a well-developed individual interest (Hidi & Renninger, 2006).

The first year of college is a transition point for many students and provides a context for examining how interests develop or change within the student. Harackiewicz and colleagues (2008) reported that interest development in introductory courses was related to both academic performance and later course selection. They used self-report measures and quantitative analysis of situational and individual interest in their study (Harackiewicz et al., 2008).

Research Question

This study examined how first-year college students perceive and experience the development of DI with, and interest in, their prospective science major during their initial year of college. This study focused on students who are entering college with a pre-selected major and participating in an introductory course related to their major, as these students have potentially begun to develop some level of identification with their major. By exploring the nuances of how first-year college students experience, reflect on, and describe their identification with, and interest in, their prospective major, this study provides an alternative

exploration of students' perceptions of DI and interest to complement the existing quantitative studies of these concepts in first-year students (e.g., Harackiewicz et al., 2008; Osborne, 1997). The research question is: How do first-year college students perceive their interest in and identification with their prospective science major?

Method

Research Design

This study was an exploratory qualitative examination of identification with, and interest in, a prospective major through the lived experiences of first-year college students. Students involved in the study participated in a set of two interviews during their first two semesters at the university, with one interview near the beginning of their first semester and a second interview at the beginning of their second semester.

Participants

Participants in this study were enrolled in "first year experience" (FYE) courses associated with their prospective major (biochemistry or physics). These courses were designed to help first-year students in the major to develop a more complex understanding of the role of scientists in their discipline. Participants were recruited through a brief in-class presentation and a recruitment email sent to the students by the course professor. Eight students volunteered to participate, including five women and three men. The students were traditional first-year college students and entered the university directly after graduating from high school. Three students did not participate in the second round of interviews due to scheduling conflicts.

Data Collection

A set of in-depth individual interviews were used as a method for gaining information about the students' lived experiences related to identification with, and interest in, their major. The interviews were designed to elucidate the students' perspectives related to the constructs under study and generate rich descriptive data (Seidman, 2006). Each student was asked to participate in a sequence of two 60-minute interviews during their first year at the university. I used a semi-structured interview guide to keep the interviews focused on the constructs while also providing space to develop follow-up questions based on the student's responses to earlier questions. The interview protocol was pilot-tested on three undergraduate student volunteers, after which interview questions and the directions to the selective valuing activity were revised for clarity. The first set of interviews was scheduled

during the first five weeks of the students' first semester and occurred before students had taken their first set of exams in order to have students reflect on their prospective major prior to receiving feedback on their college performance. The second set of interviews was scheduled during the first six weeks of the second semester and occurred after students had completed and received grades for their first semester courses.

The first interview was focused on the experiences that led the student to have an interest in their major, including questions about past experiences related to their major, social support for choosing their major, and the value that they and their social network (e.g., parents, teachers, peers, mentors) held for their major (i.e. "Tell me about how you came to choose biochemistry/physics as your major. What classes or activities did you participate in during high school or middle school related to your major?"). During this interview, the students also completed a selective valuing activity. Students were asked to list the personal aspects that they considered most important on small pieces of paper. "Aspects" were defined as roles they played (e.g., physics student, son, drummer) rather than characteristics (e.g., driven, hard-working). The students were asked to include their major as one aspect on the list. After listing their most important aspects, the students were asked to rank them from most to least important. They were then asked to create a pie graph with sections for each aspect showing the relative amount of space for each aspect and to label the piece with a percentage. Following the activity, the students were asked to explain the relative importance of their major to other aspects on the pie graph.

The second interview was focused on the students' current experiences broadly within their major and more specifically within the FYE course. This interview occurred after students had completed and received grades for one semester of coursework. This interview included questions directing students to reflect on their interest in, and value for, their major as well as to reflect on how their interest in, and value for, their major had changed over the semester (i.e. "Now that you have finished one semester of coursework, how do you feel about your decision to major in biochemistry/physics"). Students completed a second selective valuing activity and were asked to explain the relative importance of their major to other aspects of the graph.

Data Analysis

I analyzed data from the interview transcripts and the selective valuing activity through a constant comparison method (Charmaz, 2006) by first using line-by-line coding of transcripts to develop a set of descriptive, open codes then consolidating the open codes into a set of focused codes that provided an initial description of the categories and subcategories emerging from the data. I used these focused codes to code the second round of interviews. All interviews were merged into one dataset during data analysis. Throughout this process, I used code mapping and analytical memos to develop the focused codes into themes and connect the themes to the participants' voices (Charmaz, 2006). Figure 2 provides an example of the process by which open codes were categorized into focused codes and then into themes.

Findings

The purpose of this study was to explore the nuances of students' perceptions of their interest in and identification with their prospective science major. Four main themes emerged from the coding and analysis of interviews: Theme 1: *Self-definition in flux*, Theme 2: *Feeling competent*, Theme 3: *Expressing interest through enjoyment*, and Theme 4: *Relevant to me* describe how the students expressed the connection they felt with their prospective major during their first year at college. The themes are described in detail in the following sections.

Theme 1: Self-Definition in Flux

Even though this group of students entered college with a declared major, their self-definition in relation to their major remained in flux. Seven of the eight students initially applied to the university with a different major but changed to physics or biochemistry during the period of time between their acceptance to the university and the first interview (Table 1). The mutability in the students' self-definitions also showed in the language that students used to talk about their major. The descriptions of their major were hedged in terms related to desire (e.g., "I want to be," "I wanted to be") and internal processing (e.g., "I think that," "I think I am"). Only two students made declarations of identification (i.e., "I am a physicist" and "as a physics major") during the interviews and, in both cases, the declarative statement was connected with a future goal (e.g., "as a Physics major, I want to make a difference in the world" [Kelley]).

Although students rarely identified directly with their major, they often described their interest in relation to the characteristics or values they felt defined themselves presently or those they wanted to define themselves with in the future. In part, by highlighting the values that they considered important, the students were also focusing on aspects of their major that were most important to them. For example, Max explained his connection with physics: "I guess just natural curiosity. That's why it's the most important. It's just a

Figure 2
Map of the Coding Process (to be read from the bottom up)

Code Mapping for Research Question: How do first –year college students perceive their interest in and identification with their prospective science major?

First Iteration: Initial open coding (sample of descriptive codes from interview transcripts)

1: Not a physicist	2: Math & science easier	3: Liked biology	4: Personal relevance
1: Being a Student	2: Think better in math &	3: Fell in love with physics	4: Connections
1: Want to help people	science	3: Self-enriching	4: Best fit for career
1: Primary Interest	2: More challenging	3: Personal interest	4: Reasonable choice
1: As a Physics major	2: Desire to do well	3: Favorite subject	4: Many options
1: Going to be a scientist	2: Had to study	3: Most fun I had	4: Researched majors
1: Being a team-member	2: Studying really hard	3: Good use of time	4: Comparison with prior
1: Defines my personality	2: Doing well at	3: Readings are enjoyable	majors
	2: Likes challenge	3: Physics problems for fun	

Second Iteration of Analysis: Focused coding

1: Self-definition	2: Competence	3: Enjoyment	4: Usefulness
	2: Effort	3: Affective Response	4: Future Options
		3: Cognitive Response	4: Cost

Third Iteration of Analysis: Overarching Themes

Theme 1:	Theme 2:	Theme 3:	Theme 4:
Self-definition in flux	Feeling competent	Expressing interest through enjoyment	Relevant to me

Final Iteration of Analysis: Study Conclusions
First-year college students in biochemistry and physics perceive interest and identification with their prospective major in terms of Competence, Enjoyment, and Relevance; however, their self-definition with their major continues to be in flux.

Table 1
Changes in Student's Science Major Prior to First Interview

Participant	Major listed at time of application to college	Major at time of 1st Interview
Kelley	Music/Theater	Physics
Max	Engineering	Physics
Emilia	Engineering	Physics
Rosalyn	Undeclared	Physics
Cody	Biochemistry	Biochemistry
Josh	Physics	Biochemistry
Melissa	Engineering	Biochemistry

natural curiosity for learning how things work and that is what physics is. So that's why I find it important just to know certain things" (Interview 1). In students' future-oriented self-definitions, they described who they wanted to be and what they wanted to do in the field in relation to the characteristics they hoped to find there. These characteristics were broad: "to help people" (Josh, Emilia, Rosalyn, Interview 1) and "to make an impact" (Kelley,

Interview 1). They also described having changed their academic or career interests to better align their prospective major or career with personal values and goals. Max described changing to physics because it was more "self-enriching" though less "lucrative" than engineering (Interview 1).

The mutability of students' self-definitions is logical considering their positions as incoming college students. The students were taking their first college-level courses in their fields. In fact, for the biochemistry students, the FYE course was the first classroom exposure the students had to biochemistry. Experiences in college were already impacting how they viewed their major: Melissa began college as a chemical engineering major but changed to biochemistry after the first two days of engineering courses. She described feeling capable of completing an engineering degree but was not "excited" by the classes and concepts (Interview 1).

Theme 2: Feeling Competent

Each of the students in this sample spent time describing their competence in the area of their prospective major. "Competence," in these descriptions, encompassed both self-confidence in their abilities (e.g., "math and science were always easy for me" Melissa, Interview 1) and perception of their current and developing abilities in the subject areas related to their major. Competence was one way that the students assessed their interest in the content of their major. If they felt that they had, or were developing, an understanding of the knowledge needed to be successful in the subject, then their confidence in their own ability to do well in their courses and, by extension, the major increased. Students frequently used perceptions of their competence in high school courses or other related experiences to explain how they came to select and maintain interest in their prospective major. Feelings of lower competence were important also in how students described both their interest in and identification with a prospective major. Sometimes lack of competence spurred students to follow a new interest and change majors. At other times, students acknowledged feeling that their abilities were not represented by course grades, but attributed the discrepancy to other internal or external aspects of the experience.

As the students described their earlier educational experiences, five participants described long-term feelings of competence in areas related to their current major. Students distinguished their competence in math and/or science from how they felt about other academic areas either by specifying the subject (e.g., biology) that was easy or by contrasting subjects (e.g., "I always excelled in science and had to work really hard at everything else," Kelley).

Although math and science may have always been easier for some of the students to understand, they all described experiences in high school and college in which they felt that their understanding and self-confidence in their major was improving. For example, Kelley enrolled in Advanced Placement (AP) Physics even though she had a weaker math background than her classmates. She described initial confusion and lack of competence with the course, but she chose to remain in the class and developed a sense of competence through the support of her teacher and father: "[My father] helped me a lot and I needed his help less and less as I started doing really well" (Interview 1).

A number of students described an increased sense of competence associated with their college math and science courses. These initial college-level courses provided students with the opportunity to increase their understanding of the knowledge base and their confidence in their ability to successfully apply this knowledge. Some students' feelings of competence were enhanced by the perception that the courses were less difficult than expected. Other students developed a greater sense of competence through the successful completion of their first courses.

Developing competence in a content area at times led students into the role of tutor. Cody described helping to prepare his high school classmates for tests by "re-teaching" material (Interview 1). In a college setting, tutoring came in several forms. Emilia explained that being a physics major had made her "the person that people go to" for help with physics concepts when many of her friends who were engineering majors were taking their first physics course (Interview 2). Kelley was training to be a paid mentor in her science-themed residence hall and viewed tutoring in broader terms. She described helping other students with both study strategies and advice about how to approach and talk to professors (Interview 2).

Developing competence in a field or content area is not always a linear process. Many of the students described times during college or high school when they did not feel as competent or successful. Sometimes students used this as a contrast to help explain their current interest/major. For example, Josh explained "[Math] wasn't something I could afford to really be doing all the time, so that's what made me shy away from physics," as part of his explanation for choosing to major in biochemistry (Interview 1).

Not all students who felt a lower level of competence in their course work changed their major. Cody detailed his struggles with his biochemistry course but associated his frustration with a lack of connection between the course activities and his expectations for an introductory course. He defined his difficulties as more of a mismatch between the course description and the reality of the assignments

than a difference between his ability and the level of course work (Interview 1).

The end of semester grades also caused some students to examine their level of competence. Several students did not feel that they received grades representative of their competence, although they attributed the disparity in different ways. Similar to Cody, some students attributed their grades to a mismatch between their expectations and the course assignments and assessments, and others to initial attitudes and study habits.

Competence is a main element of how these students perceived their interest in, and identification with, their major; however, students did not develop or maintain interests solely in subjects where they felt successful. For example, Cody described his high school biology class as easy, but then he explained how he finished his work quickly and slept or read for the remainder of class (Interview 1). Often competence was a springboard encouraging students' connection with a discipline, particularly for students reporting long-term competence in a field. Although Cody slept through general biology, he described an ongoing interest in biology throughout high school, chose to take Anatomy and Marine Biology in addition to his required high school science courses, and entered college with a biochemistry major.

Theme 3: Expressing Interest Through Enjoyment

"Anatomy was my favorite subject" (Cody, Interview 1), and "I am enjoying all of my classes" (Melissa, Interview 1) are all descriptions that students related to the field of their major. As a reoccurring theme throughout the interviews, enjoyment highlighted the students' positive emotional and cognitive response to the activities, courses, and subjects that comprise the field of their prospective major. Broadly, the students' enjoyment focused on positive feelings for a course or subject. Narrowly, the students described specific content (e.g., the study of light in physics) or activities within their high school and college courses that they enjoyed.

Students frequently phrased their broad descriptions of enjoyment in comparative or superlative terms. As they described courses and subjects related to their major, the students used this language to compare the field of their major to other courses or subjects. In these general comparisons, the students were defining their area of interest: "I always liked the maths and sciences better since I was younger" (Melissa, Interview 1) or "[anatomy and marine biology were] the most fun classes I ever had in high school" (Cody, Interview 1). Students also expressed focused comparisons of enjoyment related to specific courses or

majors. Emilia described her enjoyment in physics by comparing it to prior science courses:

> I was good at math and I enjoyed my math classes and I had enjoyed chemistry a little bit, but I hadn't really enjoyed any of my science *classes* as much as I did until I took physics, which was my junior year. (Interview 1)

Several students described how their enjoyment of a subject impacted their selection of a major: either choosing or changing a major due to their excitement or lack of excitement for the major.

The students also used enjoyment to describe their affective and cognitive responses to specific content or experiences related to their major. In these more focused descriptions, students provided examples of highly positive experiences that led them to view the subject or themselves in a different way, connected them more deeply to the field, or fine-tuned their broad enjoyment and interest in the subject.

Positive emotional and cognitive connections emerged when students were able to make a connection between their current courses and prior interests. For example, Kate (biochemistry) contrasted her enjoyment of chemistry to other science courses. In biology, she enjoyed being able to understand the relationship between her work with horses (a personal interest) and course content, which encouraged Kate to look at her horses in a different way and begin to consider the role of chemical and biological interactions in her animals' behaviors (Interview 1).

The positive emotional response associated with a growing understanding of the field also occurred within college courses. Emilia's feelings for astronomy and physics became more nuanced as she developed a greater understanding of the field: "I sort of discovered that I really love learning about light and that it's very deeply related to astronomy because everything we know about space comes from information we get from light" (Interview 2).

At times, the positive emotions that students felt came through their immersion in the subject. For Kelley, one pivotal moment that helped shape how she viewed physics occurred while completing homework:

> I remember one night I was working on physics homework and I thought it was fun and I ended up doing a bunch of physics problems just for fun and loving it. I looked up at the clock, and it was like three in the morning, and I was like "What?!" (Interview 1)

Although these experiences often occurred when the student was engaging individually with content, several students also described experiences in which

engaging in the activity or content with like-minded peers increased their enjoyment. Sometimes enjoyable experiences happened within a class structure as students interacted with peers. Social experiences also occurred outside of the class structure through extra-curricular science and math activities (e.g., regional Physics Olympiad, summer science academies). These outside experiences allowed the students to engage with other high school or entering college students who shared their excitement for the subject.

Enjoyment did not appear spontaneously for all of the students in this sample. The courses and subjects that they described as fun, interesting, and enjoyable were ones in which they also felt competent and often described having put forth effort to develop competence. The courses and subjects that students described (e.g., Chemistry, Foundations of Physics) were courses that involved knowledge and skills considered foundational to the disciplines in which the students were majoring. Students used their enjoyment with courses and academic subjects to narrate the development of their interests and, by reflecting on particularly enjoyable activities and content areas, they emphasized the pivotal experiences in their developing interest and identification with their major.

Theme 4: Relevant to Me

In addition to feeling competent and enjoying the academic subject, students described in detail the relevance of their major to their current and future plans. Students focused on majors that they felt were connected to their current interests and also described how they viewed their major as useful preparation for a future career. The students described activities, courses, and majors that they perceived to be relevant as important and helpful. When the students talked about the relevance of a course or major, they evaluated the course in relation to their personal or career aspirations. The students' views of relevance can be divided into an evaluation of how a concept, course, or major was useful to them in the present, how it might be useful to them in later courses related to their major, or how it was relevant to their future plans.

When reflecting on high school science courses, several students explained their developing connection with an academic subject in terms of course relevance to their outside interests. For example, Kate described a general disconnection with her high school courses: "I just didn't really like high school. I just kind of felt trapped" (Interview 1). In contrast, she described liking her biology and chemistry courses because her teacher was willing to engage in conversations and answer questions relevant to her interest in horses and zebras, which helped to engage Kate with the courses.

Alternatively, Max did not find his high school physics courses relevant to his developing interest in physics. He described his physics learning as being "self-directed" because his interest in the field was focused on the "advanced physics" that he was reading in books and online outside of class, whereas his high school courses were focused on foundational understandings (Interview 1). He viewed his high school courses as providing basic learning, but less relevant to his growing interest in physics and choice of physics as a major than his self-directed learning. In each of these cases, the students' perceptions of relevance were focused on the connection between their coursework and current interests.

Even at the beginning of their college career, all of these students examined potential courses for relevance to their major. For students coming into the university with AP course credits, this evaluation included how they could use their credits to reduce the number of courses that were not directly applicable to their major. For other students, planning out their courses over the next several years helped them to hone in on the areas of the major, or supplement with a double major or minor, to develop a course of studies that they perceived to be most relevant to their goals. They described choosing to take courses that they felt were most relevant to their future careers and using AP credits to exempt humanities courses that they perceived as less relevant to their major or future careers.

The focus on relevance also occurred when the students reflected on choosing their majors. All of the students expressed how the selection was relevant to their plans and goals. They described researching potential career opportunities associated with different fields and at times changing or modifying their academic interests to better fit future plans. They also evaluated the college courses that they were taking or planned to take in terms of relevance to their majors or future careers. In addition, all of the students described talking with their parents and teachers about potential majors and careers related to their high school academic interests.

Many of these students understood that multiple paths were available but changed their major to a path perceived as more direct and relevant to future plans. For example, both Josh and Max described having early and strong interests in history, and they explained that they chose not to pursue a history major because they did not want to teach and viewed teaching as the only career option available to history majors (Interview 2). Similarly, although Kate referred to the time and effort she spent training horses throughout her interview, her career goals were related to biochemistry and medicine because "training horses would be a waste of college" (Interview 1).

During the interviews, the students described participating in courses and majors that aligned with their

academic interests and long-term goals. However, students also described times when they perceived concepts and activities within courses as being relevant but not interesting. Participating in these activities and learning these concepts did not appear to reduce their identification in their major even though they explained that they would rather be learning something more personally engaging.

All of the students were participating in FYE courses within their major. These courses were developed with the intention of helping students to learn skills that the faculty felt were necessary to the students' success within the field but did not fit easily within the introductory courses. When describing the FYE courses, the students spoke of course topics and assignments as helpful or important. Each of the students also evaluated some course activities as important but not "interesting." Physics students discussed the professor's focus on developing their problem solving skills as important in helping to increase their competence in solving a variety of problems, but all acknowledged that they did not enjoy the continued focus on problem solving: "That part I don't find that interesting. I mean, I know it will help me. I don't find it that enjoyable" (Max, Interview 2). Similarly, students in the biochemistry course focused on activities related to reading scientific literature, explaining that they understood the importance but would rather be "learning about the medicine and everything" (Josh, Interview 2).

These activities were part of the course and were perceived by the students as important and relevant to their major. They did not find the activities interesting; however, no one expressed feeling their interest in, or identification with, the field was diminished by having to participate in the less personally engaging activities.

Discussion

The present study provides an opportunity to examine how well the Osborne and Jones (2011) and Hidi and Renninger (2006) models of DI and interest development align with the lived experiences of students. Osborne and Jones' (2011) model of DI is generally consistent with the findings of this study. The students did selectively value their major in comparison to other disciplines and related their current identification to prior educational experiences.

Hidi and Renninger (2006) created a comprehensive model of interest development designed to incorporate all of the components that explain the development of interest. Nonetheless, this model is difficult to examine through the context of students' lived experience. Two of the three components of this model of interest development were not consistent with the findings that emerged from this study. The students spent more time describing their perception of competence than they did

describing how they developed domain knowledge. Simply building domain knowledge should not be viewed as synonymous with developing interest; these students perceived their interest more in relation to how confident they felt about their knowledge, how relevant they felt the knowledge was to their future goals, and how much they enjoyed their experiences in the discipline rather than the amount of knowledge they had. In addition, Hidi and Renninger's definition of stored value was more closely aligned with the students' perception of competence rather than relevance. By framing the definition of value as students' affective feelings and feelings of competence, Hidi and Renninger (2006) minimized the relevance of a developing interest to an individual's long-term goals and developing sense of self.

The findings of this study suggest several potential revisions to Hidi and Renninger's Four-Phase model that could be explored to develop a model to examine how academic interests develop into academic or professional DI. The stored knowledge component could be adapted to include the learners' feelings of competence, and the stored value component could be re-focused on students' perception of the importance or usefulness of the content or domain. Alternatively, other models of interest development, such as the Person-Object (POI) theory of interest development (Krapp, 2002), may provide a more applicable model for researchers examining the relationships between interest development and DI by removing the component of stored knowledge and framing value as the personal significance (e.g., relevance) of the content of interest.

Differentiating between Relevance, Selective Valuing, and Stored Value

All of the students interviewed expressed the practical nature of their choice of major by describing potential careers. These students had a perception of value that was based as much on their goals as it was on their past or current academic experiences within the field. The findings are likely impacted by the current culture within the United States in which high school and college students are encouraged to begin planning for their first career as early as possible. Thus, these students may be articulating personal value for, and identification with, their major by explaining how their major fits into long-term career plans.

Theme 4: *Relevant to me* aligns with the definition of selective valuing in domain identification insomuch as students' perceptions of relevance connect their value for their major to personally significant future goals. Thus, in this case, Relevance aligns with the definition of selective valuing for the students in this sample majoring in physics, but does not align with the definition for students majoring in biochemistry who perceived their major as preparation for future goals in medicine (a different domain).

Hidi and Renninger's (2006) definition of stored value aligns minimally with the theme of Relevance through descriptions of instructors connecting a concept to students' personal interests. This aspect of relevance aligns with previous findings indicating that teachers can support students' situational, activity-based interest by making content and activities personally relevant to students (e.g. Hulleman, Durik, Schweigert, & Harackiewicz, 2008; Mitchell, 1993).

However, students frequently described the relevance of activities, courses, and their major in relation to their future goals, distinguishing Relevance from Hidi and Renninger's (2006) stored value component. Krapp (2002) described a more encompassing conceptualization of value within the POI model of interest development through which value is described as the personal significance of an object of interest. Thus, value for a major would be related to how relevant the major is to a student's sense of self. This conceptualization of value integrates more of the students' perceptions of Relevance within this sample and potentially provides a more fluid link between the development of interest and the development of DI.

Separating Individual Interest from Majors

Through the interviews and the selective valuing activity, students described a variety of interests in activities and content areas other than their academic major. These interests ranged from playing video games and reading about European history to training horses and teaching ballet. Often, students had participated in these activities for years. They felt competent and enjoyed the activities; however, they did not connect these interests with their future academic or career goals. Many of the students described actively choosing *not* to pursue a major related to the activity. These students displayed the components of a developing individual interest (i.e., stored knowledge, value, and positive affect) but did not display high DI. They considered their interests to be personally relevant, but they had chosen to integrate the areas of interest into their lives in ways that put less emphasis on their ability to perform for others or build a career and more emphasis on their sense of competence and enjoyment. They included these interests in their selective valuing graphs but explained that these activities were "for fun" and unrelated to career goals. This separation between level of interest and level of DI appears fundamentally different from descriptions of dis-identification, de-valuing, or disengaging (Aronson & Steele, 2005; Schmader, Major, & Gramzow, 2001). The students had not devalued their area of interest as they continued to engage with it. However, they did not perceive the interest to be a viable career option, or they worried that pressure to perform

would reduce their feelings of competence and enjoyment. Rather than dis-identify with the domain, the students chose to re-contextualize their identification as a "hobby" rather than potential career.

Conclusion

Theoretical Considerations

The descriptions of students' interest in, and identification with, their major in this study provides researchers and practitioners with a more nuanced view of the development of interest and identification in science majors. This study highlights the connections students make in their lived experience between concepts that are often studied separately. Each student incorporated the themes of *Self-Definition in Flux, Feeling Competent, Expressing Interest through Enjoyment,* and *Relevant to Me* when describing their interest in, and identification with, their academic major. They enjoyed (for the most part), and were excited by, what they were learning, felt they were growing more competent, and viewed their academic major as relevant to their future personal and career goals. This study also illuminates potential differences between first-year college students' perceptions of the relevance of their major and how concepts related to relevance (i.e., usefulness, value, importance) are defined in current literature. Students may be evaluating the usefulness, value, or personal importance of their major through their perception of how relevant the activity or discipline will be to their future academic and career goals. This perception of value for the major is *future*-directed, whereas the value-related concepts in the current models of DI and interest (e.g., selective valuing, stored value, value-related valences) focus on individuals' value for the discipline or domain in the *present*. Students' perceptions of the value of their major may be linked to their present perception of the inherent value of the discipline, but these perceptions are also likely related to their understanding of the relationship between their major and future goals. Researchers need to be aware of the potential differences in the understanding of *value* when developing interview and survey questions so as to clearly place value for the major in either a present (e.g., "How useful is what your are learning in the first-year physics seminar to you right now?") or future (e.g., "How valuable is what you are learning in your first-year physics seminar to your future goals?") context.

Practical Implications

This study provides faculty who work with first-year students several key areas in which they could support their students' development of interest and

identification with their major. First-year students are still integrating their interest in their major into how they view themselves now and into who they hope to be in the future. Based on these findings, it seems reasonable to infer that faculty and advisors can support students by explaining how a given course and activities within the course are relevant and useful to their future within the major (especially at the introductory level). Students in this study described understanding that some activities were useful and important for their future success even if the activities were not immediately interesting. Alternatively, some students felt frustrated with activities and their level of competence when they did not perceive an activity or concept to be necessary for their future success in the major. Faculty and advisors should be aware that students' perceptions of their future options within their major arise from their prior educational experiences. Faculty and advisors can help to broaden students' perceptions of their future options by highlighting potential research opportunities and careers related to the academic major.

Future Studies and Limitations

A broader study is needed to examine the themes that emerged from this study in first-year students in other majors and in students who are entering into college without a declared major. Also, a longitudinal study is needed to follow students through college to examine how identification and interest in major(s) changes over the course of their college career.

This study was an exploratory, qualitative study and thus the themes may not be generalizable to the general population of first-year science students. The students in this study had declared a major before entering college; therefore, they may have been more focused on the relevance of their major to future goals than students entering college without a declared major.

<div align="center">

References

</div>

Aronson, J., & Steele, C. M. (2005). Stereotypes and the fragility of academic competence, motivation, and self-concept. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 436-456). New York, NY: Guilford Press.

Aschbacher, P. R., Li, E., & Roth, E. J. (2010). Is science me? High school students' identities, participation and aspirations in science, engineering, and medicine. *Journal of Research in Science Teaching*, *47*(5), 564-582. doi:10.1002/tea.20353

Astin, A. (1993). *What matters in college?* San Francisco, CA: Jossey-Bass.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage..

Gee, J. P. (2000). Identity as an analytic lens for research in education. *Review of Research in Education*, *25*, 99-125. doi:10.2307/1167322

Harackiewicz, J. M., Durik, A. M., Barron, K. E., Linnenbrink-Garcia, L., & Tauer, J. M. (2008). The role of achievement goals in the development of interest: Reciprocal relations between achievement goals, interest, and performance. *Journal of Educational Psychology*, *100*(1), 105-122. doi:10.1037/0022-0663.100.1.105

Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist*, *41*(2), 111-127. doi:10.1207/s15326985ep4102_4

Hulleman, C. S., Durik, A. M., Schweigert, S. B., & Harackiewicz, J. M. (2008). Task values, achievement goals, and interest: An integrative analysis. *Journal of Educational Psychology*, *100*(2), 398-416. doi:10.1037/0022-0663.100.2.398

Jones, B. D., Paretti, M. C., Hein, S. F., & Knott, T. W. (2010). An analysis of motivation constructs with first-year engineering students: Relationships among expectancies, values, achievement, and career plans. *Journal of Engineering Education*, *99*(4), 319-336.

Jones, B. D., Ruff, C., & Paretti, M. C. (2013*)*. The impact of engineering identification and stereotypes on undergraduate women's achievement and persistence in engineering. *Social Psychology of Education: An International Journal, 16*(3), 471–493. doi:10.1007/s11218-013-9222-x

Krapp, A. (2002). Structural and dynamic aspects of interest development: Theoretical considerations from an ontogenetic perspective. *Learning and Instruction*, *12*(4), 383-409. doi:10.1016/S0959-4752(01)00011-1

Mitchell, M. (1993). Situational interest: Its multifaceted structure in the secondary school mathematics classroom. *Journal of Educational Psychology*, *85*(3), 424-436. doi:10.1037/0022-0663.85.3.424

Osborne, J. W. (1997). Race and academic disidentification. *Journal of Educational Psychology, 89*(4), 728-735.

Osborne, J. W., & Jones, B. D. (2011). Identification with academics and motivation to achieve in school: How the structure of the self influences academic outcomes. *Educational Psychology Review*, *23*(1), 131-158. doi:10.1007/s10648-011-9151-1

Osborne, J. W., & Walker, C. (2006). Stereotype threat, identification with academics, and withdrawal from school: Why the most successful students of colour might be most likely to withdraw. *Educational Psychology*, *26*(4), 563-577. doi:10.1080/01443410500342518

Renninger, K. A. (2010). Working with and cultivating the development of interest, self-

efficacy, and self-regulation. *Innovations in educational psychology: Perspectives on learning, teaching and human development* (pp. 158-195). New York, NY: Springer.

Schmader, T., Major, B., & Gramzow, R. H. (2001). Coping with ethnic stereotypes in the academic domain: Perceived injustice and psychological disengagement. *Journal of Social Issues*, *57*(1), 93-111. doi:10.1111/0022-4537.00203

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (3rd ed.). New York, NY: Teachers College Press.

Thompson, D. E. O. (2007). Examining students' perceptions of their first-semester experience at a major land-grant institutions. *College Student Journal*, *41*(3), 640-648.

Voelkl, K. E. (1997). Identification with school. *American Journal of Education*, *105*(3), 294.

Walker, C. O., Greene, B. A., & Mansell, R. A. (2006). Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and Individual Differences*, *16*(1), 1-12. doi:10.1016/j.lindif.2005.06.004

_____

CHLOE RUFF, PhD is an assistant professor of education at Gettysburg College. Her research interests include the development of interest and domain identification within the areas of STEM education and classroom teaching and the motivation strategies that can support and maintain domain identification in these areas.

What Happens When the Apprentice is the Master in a Cognitive Apprenticeship? The Experiences of Graduate Students Participating in Coursework and Fieldwork

Bridget Kiger Lee
The Ohio State University

Kathryn Dawson and
Stephanie Cawthon
The University of Texas at Austin

The University of Texas at Austin Master of Fine Arts (MFA) program offers a cognitive apprenticeship for graduate students in drama-based pedagogy (DBP) through Drama for Schools (DFS), a professional development program for K-12 educators. This article presents findings from an exploratory case study investigation of graduate students' experiences in the cognitive apprenticeship in the practice of drama-based pedagogy in K-12 public school classrooms. Findings indicate that when graduate students simultaneously participated in fieldwork (as "masters") and related coursework (as "apprentices"), they developed a personal understanding of how theory was realized and confounded within real world contexts. Implications for university faculty members and teaching artist educators are included.

In his keynote address to the Association for Theatre in Higher Education (ATHE), Richard Schechner asserted that MFA programs need to be restructured "by combining practical experience with research and fieldwork" in order to provide a well-rounded graduate education in theatre (1992, p. 3). Additionally, graduate teacher education programs have cited similar needs. Linda Darling-Hammond, an expert in teacher education reform, includes in her key features of successful education programs, "extended clinical experiences (at least 30 weeks) which are carefully chosen to support the ideas and practices presented in simultaneous, closely interwoven course work" (Darling-Hammond, et al, 2000). However, for graduate students, making connections between practical and theoretical work can feel daunting and liminal at best (Austin, 2002; Pallas, 2001; Zeichner, 2010).

In preparing graduate student teaching artists, the University of Texas at Austin Master of Fine Arts (MFA) in Drama and Theatre for Youth and Communities (DTYC) attempts to respond to this by focusing on the theoretical foundations and contemporary critical issues in drama and education for youth and communities in both classroom and fieldwork experiences. Each MFA graduate student cohort comes with diverse experiences and aspirations. Due to the nature of the MFA as a practice-oriented degree, most students identify themselves as practitioners who teach or "do" theatre and have less experience in the underlying theories of education and drama. Upon graduation, faculty members hope graduate students will also identify as reflective scholars and practitioners (Dawson & Kellin, 2014; Schön, 1983) within the context of drama and education. But how might faculty respond to and support this type of development?

In their first year of study, DTYC graduate students often struggle with understanding the theoretical underpinnings of drama-based pedagogy (DBP). Relatively dense readings in critical pedagogy (Freire, 2002) and socio-cultural learning theory (Vygotsky, 1978) in first year graduate courses are used to interrupt and challenge preconceived ideas about education. Austere experiences of these texts typically result in two perspectives on theory and its application to classroom practice: 1) for those students with experience in the classroom, theory is far removed from practical understanding or 2) for those students with little experience in the classroom, theory easily applies to all situations. This categorization oversimplifies the students' responses; however, these are common findings in graduate education (Austin, 2002; Pallas, 2001; Zeichner, 2010). In order to provide an *in situ* experience of the theoretical readings, it seems that students may need extended time in an authentic context to appropriately consider and reflect on the diverse theoretical entry points offered in their reading assignments.

With this article, we consider how a practice-based MFA program can better prepare graduate students to be critical, reflective artists and scholars through fieldwork experiences. Research questions that guide this study include the following: What does the cognitive apprenticeship process look like for the graduate student teaching artists in Drama for Schools? How do the theories from university coursework and their practice in the school classroom support or contradict one another? To address these questions, we use a content analysis of communication, lesson plans, and transcribed interviews to explore the development of five graduate students pursuing an MFA learning drama-based pedagogy and practice through coursework at the University and their *in situ* experiences using drama-based pedagogy in the public school setting.

Drama for Schools as a Cognitive Apprenticeship

Within a traditional apprenticeship, the master models the desired behaviors while apprentices observe the behavior, for example, as in carpentry. During this process, however, apprentices may misinterpret the observed behavior, for example, misunderstanding the intention motivating the behavior. For graduate students, the desired behavior may be an implicit process; therefore, a cognitive apprenticeship that focuses more on the thinking skills and heuristics is useful for apprentices (Belcher, 1994; Collins, Brown & Hollum, 1991; Loving & Foster, 2000; Stewart & Lagowski, 2003). In a cognitive apprenticeship, the master uses modeling, coaching, and fading to train the apprentice for expert problem solving within a specific context (Austin, 2009; Collins et al., 1991; Hockly, 2000).

Although none of these phases is exclusive or isolated from the other, the cognitive apprenticeship framework suggests that the master guides an apprentice through each of these phases. In the modeling phase, the master demonstrates the targeted behavior while deliberately discussing the metacognitive processes and cultural practices for the apprentice. This allows the apprentice to build a conceptual model of the task. In the coaching phase, the apprentice attempts the targeted behavior or task and the master provides specific, diagnostic feedback for improvement. As the apprentice gains confidence and understanding of the task, the master is able to direct the apprentice to attend to previously overlooked or more implicit aspects of the task. Finally, in the fading phase, the apprentice gains more autonomy, and the master slowly removes support for the apprentice (Collins et al., 1991).

Drama for Schools (DFS) is a professional development program that uses drama-based pedagogical strategies to shift the learning culture in the K-12 school classroom (Cawthon & Dawson, 2009; Lee, Cawthon & Dawson, 2013). Broadly, DBP uses active and dramatic approaches to engage students in aesthetic, affective, and academic learning through dialogic meaning-making in all areas of the curriculum (Lee, Patall, Cawthon, Steingut, 2015). As a socio-cultural practice, DBP invites learners to co-construct knowledge with a focus on the process of meaning-making, provides authentic and meaningful learning contexts for the students to deepen their understanding of a curricular topic, and provides ways for teachers to scaffold the learning through careful consideration of each student's development (Cawthon & Dawson, 2009; Lee et al., 2013). Using a critical pedagogical framework (Freire, 2002), DBP intends to shift the learning environment to better support student complex cultural identities and experiences. In sum, a DBP pedagogical approach offers a way for teachers and learners to learn side-by-side while incorporating multiple perspectives and experiences.

In particular, multiple meta-analytic research studies have shown that DBP has a significant positive impact on a constellation of academic-related outcomes (Conrad, 1992; Conrad & Asher, 2000; Kardash & Wright 1986; Lee et al., 2015; Podlozny, 2000). This is further supported through qualitative studies that have suggested that DBP practices support students in making their knowledge and perspectives visible and available as they learn to comprehend and write about complex texts (Cushman, 2011; Edmiston, 2003; Heath & Wolf, 2005 Wagner, 1998). Recent research suggests that using DBP with literary and informational texts both challenge and support students as they examine details in their own and others' texts (Gallas & Smagorinsky, 2002; Kidd, 2011), infer and evaluate possible meanings (Edmiston & McKibben, 2011; Smagorinsky & Coppock, 1995), and synthesize perspectives (Crumpler, 2006; O'Neill, 1995).

Given this research, DBP is a viable pedagogical approach for teaching artists and classroom teachers to use in the K-12 curriculum (Cawthon & Dawson, 2009; Lee et al., 2013; Lee et al., 2015). Many graduate students in this program want to deepen their understanding of DBP in the classroom for future practice as teaching artists. As part of their MFA course of study, the graduate students have the simultaneous opportunity to learn about DBP in coursework and to practice DBP in the DFS program. A faculty member takes on the role of a "master" trainer within coursework and supports graduate students as "apprentice" trainers. Then, in turn, graduate students take on the role of a "master" trainer to K-12 teachers in the DFS program. In this way, graduate students start as apprentices but are given increasing training responsibilities over the arc of a year. Eventually, K-12 teachers are practicing DBP in their classrooms beyond the professional development sequence. For further explanation, see Table 1.

As evidenced in interactions with graduate students, this cognitive apprenticeship seems to challenge students to take on the complicated dual role of an "apprentice" graduate student in a college classroom and quickly asks them to take on the role of a 'master' teaching artist trainer in a public school classroom. In the college classroom, faculty members intentionally make explicit their thought processes to facilitate the graduate student learning that they will need and use in the K-12 classroom with the teachers. When trying out DBP as a "master" in the K-12 school classroom, graduate students confirm, create, reject, or revise learning theories from coursework.

Drama for Schools as Praxis

Theory informs practice and practice, in turn, points out blank spots in theory (Bernstein, 1983). Praxis puts theory and practice in dialogic conversation

Table 1
Timeline for Faculty, Graduate Students & K-12 Teachers as Apprentice and Master

Timeline Academic Year	Faculty Responsibility	Graduate Student Responsibility	K-12 Teacher Responsibility
August	Modeling in coursework	Observing in coursework	
September	Modeling in coursework	Observing in coursework	
October	Modeling in training/Coaching in coursework	Observing in training/Practice DBP in coursework	Observing in training
November	Coaching in coursework/training	Modeling DBP in Training/coursework/ K-12 classrooms	Practice DBP in training
December	Fading in coursework/training	Modeling DBP in coursework/training Coaching in K-12 classrooms	Practice DBP in training/ K-12 classrooms
January-March		Coaching in training/K-12 classrooms	Practice in training/ K-12 classrooms
April-May		Fading in training/K-12 classrooms	Practice in K-12 classrooms
Following academic year			Practice in K-12 classrooms

(Gadotti, 1996; Lindeman, 1944) to support critical consciousness (Kincheloe, 2008). At first graduate students allow theory to direct their behavior in the classroom in an almost rudimentary way. For example, they invite multiple student perspectives when asking a question rather than taking one "right" answer; however, novice teachers may not sense how to guide the dialogue in a classroom of 30 or more students. This experience shapes the way graduate students read and respond to the theory as well as how they practice in the future (Elliot, 2007). Through the reiterative cycle of action-reflection-action students develop a more complex conceptual understanding of the multiple systems of power shaping the educational process in US schools (Kincheloe, 2008) and their own multi-faceted identity construction within it (Grady, 2000).

This ongoing cycle of discovery and becoming is a potentially discomforting process (Freire, 2002). When we learn anything new, this process can be exhausting and feel unstable (Moreno & Mayer, 1999; Paas, Renkel & Sweller, 2004; Sweller, 1988). Therefore, the cognitive apprenticeship attempts to scaffold the learning through coursework and just-in-time learning in the classroom as well as extensive university faculty support. With this intention, the university faculty members hope that the graduate students do not feel paralyzed by the process but rather engaged in the process.

When graduate student teaching artists collaborate with teachers, the graduate students try out their new knowledge of educational learning theory and practice while the school teachers try out their new knowledge of DBP theory and practice (Lee, 2013). Consequently, graduate students no longer have a list of "what works" strategies to use in the classroom, but rather they have a situated learning context for when a specific strategy was (un)successful with a specific group of students in a specific school environment. Thus, this type of fieldwork experience embodies the idea of praxis to the extent that both theory and practice are put into conversation with one another.

This study describes an exploratory investigation of graduate students' experiences in a cognitive apprenticeship. Research questions that guide this analysis include: What does the cognitive apprenticeship process look like for the graduate student teaching artists in DFS? How do the theories from coursework and their practice in the school classroom support or contradict one another?

Methods

Study Context

This exploratory qualitative content analysis (Creswell, 1998) was conducted during the 2008-09 academic year within the context of Drama for Schools (DFS) developed from research and practice conducted by multiple faculty members at the University and K-12

Table 2
Monthly Cycle of Teaching Artist/Teacher Residency

Timeline Academic Year	Activity in K-12 partnering district
Before the residency	Teachers identified curriculum for drama-based strategy. Teaching artists encouraged teachers to choose a topic from an upcoming unit or lesson.
Day one of the residency	Teaching artists and faculty facilitated an after-school training (2-3 hours). During the last 45 minutes of training, Teaching artists and teachers co-created a lesson plan.
Day two of the residency	In the teacher's classroom, teaching artists facilitated the lesson plan by modeling, coaching, and eventually observing teachers using strategies in the classroom.
After residency	Teachers provided feedback on strengths and weaknesses of lesson. Lessons were rewritten and modified for future use.

teachers. The IRB 2007-09-0146 at the University of Texas approved this research as it is described here. The DFS team included five graduate students and two faculty members from the Department of Theatre and Dance and one faculty member from the College of Education. The team facilitated eight in-school residencies at one high school in a medium-sized southern town over the course of the school year. The in-school residency consisted of afterschool training sessions led by university faculty members and graduate student teaching artists for the high school teachers. Then the teaching artist remained in residence at the school the following day with the high school teachers (see Table 2).

During the training, faculty members helped facilitate DBP strategies as well as checked in with teaching artists to offer support and/or guidance. After the residency, teachers and teaching artists made every attempt to do an initial evaluation immediately following the lesson. However, many times this evaluation occurred through email over the following week. This entire cycle (training, lesson planning, classroom teaching, evaluation) repeated eight times throughout the course of the academic year on a monthly basis. This structure intended to provide an embedded, reiterative process for teachers to learn and use new DBP strategies across multiple lessons and contexts. At the same time, this structure provided an opportunity for graduate students to model DBP lessons and move through coaching and finally fading by the end of the eighth residency.

Sample Population. All graduate students participating in DFS consented to be involved with this research, thus providing a nuanced understanding of the graduate students' experiences, albeit from a small sample of participants (Bunce & Johnson, 2006; Crouch & McKenzie, 2006). Four of the graduate students were enrolled in the MFA in Drama and Theatre for Youth, and one graduate student was enrolled in the MA in Performance as Public Practice, a sister program in the Department of Theatre and Dance. Their experience with DBP ranged from very little to multiple years' in classrooms working as a teaching artist.

Data sources. We used three qualitative sources that focused solely on the graduate students' interpretations of their experience in the complex learning context as masters and apprentices. In an effort to mark significant moments or shifts throughout the process, we analyzed multiple data sources for thematic content of the cognitive apprenticeship model framework (Creswell, 1998): graduate student individual development plans, written reflections, and a transcribed focus group meeting.

1. *Individual Development Plan:* Before DFS work began in the school, each teaching artist completed an Individual Development Plan consisting of a self-assessment of individual strengths and weaknesses in relation to implementing the *DFS* program. (Glenn & Jordan-Davis, Appendix.)

2. *Personal Reflections:* Throughout the academic year, teaching artists wrote monthly emails to the researchers with reflections after each residency cycle. Teaching artists wrote an average of seven reflections each, although the range included one to eight reflections per teaching artist.

3. *Focus Group:* The researchers, which included two university faculty members, conducted, recorded, and transcribed an hour long focus group meeting with all the teaching artists at the conclusion of the year. Questions were preplanned and included:

- What is the DFS program?
- What is drama-based pedagogy?
- How have you shifted in your thinking over a year in this program?
- Speak to this program's role as part of your development in the MFA program at the University.

Data analyses. Two researchers read and coded the data to generate more parsimonious and meaningful findings (Langley, 1999). Using the cognitive apprenticeship framework as a guide, the coders reviewed the dataset for occurrences of the three phases of an apprenticeship: modeling, coaching, and fading. While analyzing the data for the apprenticeship phases, two more thematic ideas presented themselves: *understanding of teaching* and *moments of theoretically contradictory action* (Table 3). The coding process thus combined both a thematic content analysis and a grounded theory approach (Strauss & Corbin 1990).

The researchers compared their coding and discussed areas of agreement and disagreement (Langley, 1999). All codes were counted and then divided by the number of disagreements, which resulted in an 87% agreement in coding the data. To increase trustworthiness for this study, researchers collected data from participants over the course of an entire academic

year, collected data from multiple sources and methods, and conducted member checking with participants after data was coded by emailing questions and a draft of the manuscript to the graduate students to review.

Results and Discussion

In this section, we use the cognitive apprenticeship framework to consider: What does the cognitive apprenticeship process look like for the graduate student teaching artists in DFS? Next we consider: How do the theories from coursework and their practice in the school classroom support or contradict one another? To this end, we have included a small sample of the most salient, succinct quotes from the coded data and then offer an interpretation of that data.

Modeling

At the beginning of the DFS residency in the school, graduate student teaching artists *modeled* DBP strategies in the teachers' classrooms. When appropriate and relevant, they shared their thought processes with the teacher. In the modeling phase, graduate students seemed to have a self-perceived positive and confident presence in the classroom. Modeling comments included the following:

Table 3
A Priori Coding Descriptions

Code	Description of Code
Teaching artist role: modeling	Graduate students as masters model strategies and/or cognitive processes for teachers. (e.g., teaching artists facilitate a DBI strategy with students while educator observes.)
Teaching artist role: coaching	Graduate students co-facilitate strategies with and/or provide feedback for teachers. (e.g., teaching artists give instructions for DBI strategy to the students, and then the educator facilitates the strategy with the students.)
Teaching artist role: fading	Graduate students observe teachers using strategies. (e.g., teaching artists discuss and plan a lesson plan with an educator but the educator facilitates all the dbi strategies with the students.)
Theoretically supported action	Graduate students apply theories (i.e., socio-constructivism, critical pedagogy) that have been studied in coursework to their practice in the field. (e.g., teaching artists are able to develop and ask open-ended questions to students.)
Theoretically contradictory action	Graduate students make choices in their practice that counter theories that have been studied in their coursework. (e.g., teaching artists ask leading or closed questions.)
Understanding of teaching	Graduate students' understanding of the skills needed to be an effective teacher. (e.g., teaching artists see the artistry and complexity of creating and implementing a lesson plan.)

I think I did a good job steering us back on track.

I was clear about the movement needing to be silent, and the students respected that for the most part.

I am proud of myself that I did not get frustrated [leading the strategy].

I had no trouble getting them to participate in the [the strategy].

Sometimes the graduate student teaching artists modeled strategies even after they encouraged the teacher to lead a strategy:

I said as I passed to [the teacher] that she was welcome to take over as leader if she wanted, but I ended up doing all of [the strategy].

The evidence supports that the teacher was not prepared to lead the strategy because she was uncomfortable, she hadn't planned on leading a strategy, or she thought the teaching artist was supposed to model the strategies. It could also be that the graduate student was not able to sense a teacher's readiness to participate and therefore was unable to adequately scaffold the teacher's learning.

Throughout the modeling phase, the graduate students focused on themselves and their practices (either positively or negatively) rather than the teacher and her practice. In DFS, the faculty members assumed that modeling of strategies was mainly for the benefit of the teachers; however, this phase is equally if not more important for the graduate students. While modeling strategies for teachers, the graduate students focused on their own ability to facilitate the DBP strategies rather than on the teacher's ability to understand the strategy. The DFS faculty had envisioned this phase as a time when the teachers are becoming familiar with the strategies, but also as a time that graduate students closely attend to a teacher's needs and comfort level. However, this focus on the teacher may be an unrealistic expectation for graduate students. Graduate students need to feel efficacious in their facilitation of DBP strategies *before* they can focus on training the teachers. The DFS residency is the first time that most of the graduate students are asked to facilitate DBP strategies with the intention of training another person to lead the strategies.

This shift in orientation may challenge graduate students' thorough emerging understanding of the complexity of the strategy. No longer could a graduate student depend solely on their intuition or on their perceptions of how colleagues facilitated an activity. They

needed to explicitly understand and explain the strategy to the new "apprentice," the teacher. They need to understand a strategy in multiple ways, for example: a) Why would I use this strategy? b) How difficult is this strategy to implement? c) How much space do I need to implement this strategy? d) How much do I need to tell the teacher about the strategy so that the teacher is able to use the strategy but not be overwhelmed by the idiosyncrasies of the strategy? Although these types of questions arise in course discussions with the faculty members, a teaching artist may not have thought through each of these questions as applied to the specific situation and may model the strategy with limited consideration for the teacher or students.

Many graduate students had difficulty determining when the modeling portion of the graduate student/teacher partnership was complete. They encouraged teachers to lead strategies but may have lacked the skills to scaffold the teacher's learning. The fluidity of these roles as master and apprentice as well as the phases of modeling, coaching, and fading invited a welcomed confusion. Within the context of college courses, the graduate students are considered apprentices to the pedagogy and practice of drama-based pedagogy. Within the context of the teacher's classroom, the graduate students play the role of master to this pedagogy and practice. But how does a graduate student read and respond to a teacher's needs while acknowledging his/her own? The complexity of this delicate balance was most evident in the coaching phase of the DFS training cycle.

Coaching

As the graduate student teaching artists and teachers agreed to move into the *coaching* phase of the DFS residency, graduate students co-facilitated strategies with, and provided feedback for, teachers. During this phase, the graduate students shifted their focus and made more comments on the teacher's struggle or success to use the strategy. Coaching comments that reflect effective collaboration included the following:

I told her my objective wasn't to change her [but it was to] incorporate the things she is already doing in her classroom. I told her I was here for her.

Especially the last period was a little victory for both [the teacher] and me: she saw how good she was at leading activities, and I was able to come up with lots of little [strategies].

It was not polished or pretty, but we did it. The lesson was truly co-taught because I was

explaining the [strategy] to the class, and I would get stuck, so [the teacher] would jump in.

It's interesting to plan with all of my teachers because if they don't agree with one of my ideas, they are very vocal about it.

I just did a lot of listening and I think that was very key.

However, moving between a differentiation of modeling and coaching was difficult for some graduate students. Comments that seem to reflect a struggle during coaching included the following:

I'm not sure whether it's my position to help her become a better disciplinarian, or if I'm just realizing that my style would be completely different.

So I started jumping in and reassuring students, encouraging them to try it. Then my hand off to [the teacher] was awkward, and she went on to explain, but it was clunky. As time went on, I started talking more and it became more and more awkward to pass off to [the teacher].

During the planning session [the teacher] was impossible.

I am still trying to figure out how best to support her and how to interpret her responses to our planning together, but I'm getting closer!

During the coaching phase, it may be that teachers feel vulnerable and/or scared to take risks in front of their students and the graduate students. Facilitating DBP in a secondary classroom is very different from the usual classroom practices. Just having students stand in a circle can be an undertaking in a 30-person chemistry class that usually solves problems on worksheets sitting at their desks.

Graduate students may feel a need to intervene and just do it themselves. They understand how to lead the strategies but may still have difficulty coaching another person to lead the strategies. Their inability to coach a teacher may be rooted in their rudimentary understanding of the strategy. Furthermore, facilitating a DBP strategy can be challenging. The graduate student not only needs to understand the strategy: they also need to adapt to another person's teaching style, classroom management techniques, and comfort level with classroom control.

Among other contributing factors, the power dynamic between a graduate student and a classroom teacher may be difficult to negotiate. By mid-year, the graduate student has a great deal of DBP experience but limited content knowledge, while a teacher has little DBP experience and a great deal of content knowledge. They need to agree on what takes priority during a lesson: should we focus on the teacher learning the strategy so she can use it when the graduate students is not present, or should we focus on the student learning the curriculum content without regard for the DBP strategy? We would hope that there can be a balance, but it may be that in this real world context that the teacher and teaching artist necessarily prioritize one or the other.

In this phase, graduate students critically engage with the strategies and the teachers through a process of negotiating their identity as master and apprentice. They begin to identify and understand how they want to lead strategies, but it seems they are not quite able to execute their desires in a fluid way. In the coaching phase, graduate students are no longer 'trying out' their ideas but are starting to take on these ideas as their own. This identity negotiation and knowledge construction and/or ownership seem even more evident in the observing phase of the residency cycle.

Fading/Observing

In the final phase of the DFS residency, that is, the "fading" phase, the graduate students observed the teachers using the DBP strategies in their classrooms. Graduate student teaching artists moved toward a differentiation of their roles as masters and as apprentices. Comments where the graduate students served as masters focused on the teachers' development during the fading included these:

I encouraged/forced [the teacher] to lead the Constellations exercise, and (probably to her dismay), she did a great job.

It worked well, and I truly got to just sit back and observe [the teachers] facilitate. They did a great job!

This class was the most fun, mostly because [the teacher] really took the reins on the class activity.

She is excited about this work and allows it the time and space that it needs!

I was most proud that [the teacher] talked with me, got the idea, then really did the rest herself.

Comments where graduate students struggled with their role during fading included:

[The teacher] ended up, in a way, both leading the discussion and giving a lecture, while the students barely paid attention.

I didn't want to step on her toes so I waited until she called on me to step in. I wonder if she wanted me to step in a bit quicker.

I agreed that this [strategy] would be great but I wasn't sure how to structure the lesson— I decided to observe her teach one lesson.

During the fading phase, graduate students attempted to give teachers autonomy and complete control of their classrooms. If facilitating the strategy was not going well, then the graduate student had the option to support the teacher in the instruction or to allow the teacher to move through as best he or she could and unpack the issue afterwards. In their nascent roles as masters, many of the graduate students struggled with how to embed coaching into this final step of the residency process. Once again, it may be unclear to the graduate students how to continue to move between coaching and fading. When a graduate student observes a teacher making an egregious mistake in setting up a strategy—for example, forgetting to tell students to stand in a circle—it may seem appropriate to step in so that the strategy does not fail. The teacher then has the possibility of experiencing success with DBP rather than being derailed at the beginning.

However, what role does the graduate student play when the teacher is following the basics of facilitating a DBP strategy but lacks an artistic finesse of an experienced teaching artist? A graduate student may jump in to model more effective facilitation, but this may directly affect a teacher's efficacy and confidence for trying out these new strategies in the future. Is the graduate students' role to make sure that the instruction is of the highest quality for students? Or is their role to let a classroom teacher struggle through a difficult moment and reflect on it afterwards? Which would benefit the classroom teachers and best support their ongoing move towards site-embedded practice of the new instructional approach? Answers to these questions need to be made quickly in experiential education situations. In this phase, it may be that teaching artists struggle *because* they identify more as masters: they have an understanding of the complexity of their role and decision-making process.

Activating Theory through Praxis

Throughout the DFS residency, graduate students make choices that may align with or contradict the theories studied in coursework (i.e., critical theory, constructivism), but more important is their intentional act when working with teachers and students. In this data, the graduate students discuss choices in the teacher's classroom where the graduate students supported or contradicted the application of theory in practice. Table 4 offers sample comments that reflect and/or contradict the two main theories of interest: critical pedagogy and constructivism.

Most interesting were moments when graduate students integrated multiple theoretical constructs and recognized that it could be a contradictory experience. For example, what do you do when you share power with the students and then the students make racist comments? Their experience in the fieldwork classroom informed their understanding of DBP by enhancing their abilities to recognize multiple theoretical constructs and integrate theory into novel contexts even when the experience contradicted their understanding.

Table 4
Application of Critical Pedagogy and Constructivism

Theory	Supporting Comment	Contradictory Comment
Critical Pedagogy	*I think I went from thinking it was, when I first started working in the program, thinking it was led more by the [teaching artist] and now I'm realizing or at least I feel like it is more led by the teacher.* (B)	*It was pretty chaotic, and it required a lot of me controlling the debaters.* (M)
Constructivism	*NO ONE was the expert, and that really got the students interested in the dialogue.* (T)	*[The teachers] had great conversations about definitions while the students watched. I really want to work on changing the habits of the teachers to ask their STUDENTS for answers to their questions, rather than falling back into "too comfortable" grown-up conversations. I am not sure how to encourage that quite yet.* (T)

As graduate students struggled through the phases of the cognitive apprenticeship, they co-constructed a more complex idea of work in the community and in the classroom. When working with actual teachers and students, graduate students encounter a complicated, more difficult process. Although many of the phases of the cognitive apprenticeship are fraught with problematic collaboration and frustration, these moments may in fact be desirable difficulties. By struggling, the graduate students were no longer accepting their preconceived notions of classrooms and were attending to how theory may indeed inform their practice. The graduate students shifted in their understanding of teaching began to develop a reflective-synthetic knowledge of education that engages experience, purpose, and multiple forms of knowing (Kincheloe, 2008).

Understanding of Teaching

Throughout the residency, graduate students shifted their understanding of the skills needed to be an effective teacher. The data captured this shift by comparing how graduate students described their skills in the Individual Development Plan and how graduate students discussed teaching during the final focus group at the end of the year.

Over the year, the graduate students shifted from practical, non-specific language to more theoretically supported, domain-specific language. By offering an intentional way to try out the theories, this process allowed them to claim and complicate their use and understanding of theoretical discourse (Grady, 2002). Theory moved from a disconnected abstraction existing purely on paper to a complicated, embodied understanding situated in lived experiences. For example, "time for collaboration/planning with teachers" is a practical way to think about meeting teachers' needs; however, "the importance of learning communities" offers a more in depth understanding of the ongoing and systemic nature of professional development and reflects a socio-constructivist view of learning (Table 5).

When considering how graduate students connected with others, initially graduate students commented that they wanted to "relate to students" in the classroom. But by the end of the year, they broadened this idea to include the systemic nature of schools by commenting "[the school] is very political, and it's very economically based, and how do you work within those constraints?" This complicated view of power within education reflects more of a critical pedagogical perspective and developing notion of praxis. Although relating to students is of utmost importance, a teaching artist needs to understand the complex system in which students, teachers, and administrators work in order to facilitate a shift in the learning culture in the classroom.

The final focus group captured a shift in understanding of teaching through statements made by the graduate students. Comments that reflected an understanding in teaching include the following:

> [It] doesn't mean the teacher is not effective right now. So that we're not going in and saying you're not effective and so we're giving you tools that are going to make you effective.

> I had two teachers this year that would get so frustrated with themselves because they couldn't remember the name of the activity. But they remembered how to do the activity and what the activity was and I was like 'Time out. Let's celebrate that. Call it 'Purple Flower!' You know what you're doing!'"

> I think being aware of our limitations and the limitations of the work are important to the quality. And if we feel like the students aren't ready or are acting immature, that we don't compromise the work.

Compared to the modeling phase of the residency, by the end of the year, the graduate students seemed to have a richer understanding of the theoretical foundation that is taught through coursework. For example, one graduate student stated, "It doesn't mean the teacher is not effective right now." He not only acknowledges the teacher's ability to co-construct meaning but also he scaffolds the teacher's learning to meet her needs. Another graduate student commented, "It's not the name [of the strategy] that's important, it's what you do." This reflects a critical perspective for working toward change in the classroom. Rather than focusing on the teacher regurgitating the "right" answer, the graduate student looks for a deeper understanding of what is learned. In sum, all the graduate students struggled through this *in situ* learning experience but they each used those challenges as learning moments for deeper understanding of the theory and practice of DBP, and some took the first step towards critical consciousness.

Implications of Findings for Training Teachers and Teaching Artists

Working in the community is not an easy task, but it is necessary to better prepare graduate students to be critical, reflective artists and scholars (Darling-Hammond, 2000; Schechner, 1992). By using a cognitive apprenticeship framework, the researchers

Table 5
Identified List of Skills of an Effective Teaching artist

Self-identified growth areas	Fall 2008 Development Plan	Spring 2009 Focus Group
Understanding DBI Strategies	• *creativity with strategies* • *ease of brainstorming* • *lesson planning on the spot* • *breadth of techniques*	• *learning what strategies will be effective* • *teaching people that there is no one right answer*
School context	• *ability to relate to students* • *ability to adapt to different personalities*	• *connect with educational climate* • *[the school] is very political and its very economically based and how do you work within those constraints*
Creativity	• *readiness to try something new* • *think outside the box*	• *artistry in teaching* • *artistry in crafting a lesson* • *artistry in the way that you talk to your students*
Collaboration	• *time for collaboration/planning time with teachers*	• *the importance of learning communities*

charted the progress of graduate students through this complicated and valuable fieldwork experience in conjunction with related coursework. Although graduate students are both "apprentices" (in coursework) and "masters" (in fieldwork), they were able to move between the two identities— though challenging at times— as the theoretical constructs supported their practice. In various contexts, apprenticeships need to include a "master" who is willing to scaffold support and offer explicit guidance when necessary for apprentices.

Specifically, the researchers noted that the graduate students especially needed the modeling phase to gain confidence and understanding of the DBP strategies for themselves. Although coursework seems an ideal place to practice modeling, the modeling for K-12 teachers and in classrooms helped solidify their understanding of DBP in practice. During the coaching phase, the graduate students had difficulty knowing when to prioritize the teacher's learning or the students' learning. The graduate students struggled when they identified more as masters because they understood the complexity of learning and facilitating DBP strategies.

Implications Beyond a K-12 Classroom Context

Educators of graduate students and teaching artists may want to reconsider ways to support an extensive, cognitive apprenticeship that allows for an ongoing dialogue between the practice and theory of a specific domain. When facilitating a cognitive apprenticeship, educators need to engage students in rigorous reflection

about the relationship between particular thoughts and actions as they confront lived experiences in a variety of forms. They can provide time to discuss solutions collaboratively and model coping behaviors for problematic situations while recognizing that some of the theoretical assumptions that drive beliefs about teaching may contradict their experiences in fieldwork. Contradictions between theory and practice, then, become just as generative as supportive connections (Pinar & Grumet, 1988; Van Manen, 1999). These inconsistencies are sites for dialogue about holes in theories or unexplainable experiences. In the same way, this can be an opportunity to deepen understanding of theory and practice rather than set up dichotomies that value one or the other. In sum, educators and graduate students need to remove any guise that theories translate easily into practice and/or that all practice fits neatly into theories.

Limitations and Future Directions

Even though it seems that fieldwork experiences are an invaluable part of an MFA graduate program, we acknowledge that there are many other possible interpretations and likely contributors to the graduate student's growth. Since the DFS residency took place over the course of nine months, time plays a role in shaping their understanding of theory and practice. This does not undermine the usefulness of DFS fieldwork but rather may be an integral part of reaching a deeper understanding of how theory and practice inform one another. It is also important to note that the DFS

program often falls short of the larger goals of critical pedagogy. Faculty encourages the analysis of conflicting forces that shape education, normative assumptions, and systems of power, but these are not privileged in the program model.

Because graduate students were simultaneously enrolled in coursework and participating in the DFS program, we cannot solely attribute the shifts to the DFS program. The research suggests that DFS plays a role in shaping the graduate student's understanding of how to be a teaching artist, but further research is needed to understand the various perspectives involved in DFS. How might graduate students who do not work with the DFS program have a different and/or less complicated view of the theories from coursework? How do the teachers perceive the graduate students as part of the larger DFS program? How do the faculty members shift their understanding of DBP through their experiences in the K-12 classroom with graduate students? Many people affect the development of teachers, teaching artists, and faculty members; therefore, we will continue to pursue questions that tease out these relationships and the dialogic nature of practice and theory.

References

Austin, A. E. (2009). Cognitive apprenticeship theory and its implications for doctoral education: A case example from a doctoral program in higher and adult education. *International Journal for Academic Development, 14*(3), 173-183

Austin, A. E. (2002). Preparing the next generation of faculty: Graduate school as socialization to the academic career. *The Journal of Higher Education, 73*(1), 94-122.

Belcher, D. (1994). The apprenticeship approach to advanced academic literacy: Graduate students and their mentors. *English for Specific Purposes, 13*(1), 23-34.

Bernstein, R. (1983). *Beyond objectivism and relativism: Science, hermeneutics, and praxis.* Philadelphia, PA: University of Pennsylvania Press.

Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59-82.

Cawthon, S., & Dawson, K. (2009). Drama for schools: Impact of a drama-based professional development program on teacher self-efficacy and authentic instruction. *Youth Theatre Journal, 23*(2), 144-161.

Collins, A., Brown, J. S., & Hollum, A. (1991). Cognitive apprenticeship: Making thinking visible. *American Educator, 6*, 38-46.

Conrad, F. (1992). *The arts in education and a meta-analysis* (Unpublished doctoral dissertation). Purdue University, West Lafayette, IN.

Conrad, F., & Asher, J. W. (2000). Self-concept and self-esteem through drama: A meta-analysis. *Youth Theatre Journal, 14*, 78-84.

Creswell, J. W. (1998). *Qualitative inquiry and research design choosing among five traditions*. Thousand Oaks, CA: Sage Publications.

Crouch, M., & McKenzie, H. (2006). The logic of small samples in interview-based qualitative research. *Social Science Information, 45*(4), 483-499.

Crumpler, T. (2006) Educational drama as response to literature: Possibilities for young learners. In J. Jasinski Schneider, T. Crumpler, & T. Rogers (Eds.), *Process drama and multiple literacies: Addressing social, cultural, and ethical issues*. Portsmouth, NH: Heinemann.

Cushman, C. (2011). *Re-imagining reading instruction for English Language Learners: A performance ethnography of collaborative play, inquiry, and drama with Shakespeare in a third grade classroom*. (Unpublished doctoral dissertation). The Ohio State University, Columbus, OH.

Darling-Hammond, L., Macdonald, M. B., Snyder, J., Whitford, B. L., Ruscoe, G., & Fickel, L. (2000). *Studies of excellence in teacher education: Preparation at the graduate level*. Washington, DC: AACTE Publications.

Dawson, K., & Kellin, D. (2014). *The reflexive teaching artist: Collected wisdom from the drama/theatre field.* Bristol, UK: Intellect Books.

Edmiston, B. (2003) What's my position? Role, frame and positioning when using process drama. *Research in Drama Education*, *8*(2), 221-230.

Edmiston, B., & McKibben, A. (2011). Shakespeare, rehearsal approaches, and dramatic inquiry: Literacy education for life. *English in Education, 45*(1), 91-106.

Elliott, J. (2007). *Reflection where the action is: The selected works of John Elliott*. New York, NY: Routledge.

Freire, P. (2002). *Pedagogy of the oppressed.* New York NY: The Continuum International Publishing Group.

Gadotti, M. (1996). *Pedagogy of praxis. A dialectical philosophy of education.* New York, NY: SUNY Press.

Gallas, K., & Smagorinsky, P. (2002). Approaching texts in school. *The Reading Teacher, 56*, 1, 54-61.

Glenn, J., & Jordan-Davis, J. TASC. Power of three: Critical components of coaching.   management coaching curriculum.

Grady, S. (2000). *Drama and diversity*: *A pluralistic perspective for educational drama*. Portsmouth, NH: Heinemann.

Heath, S. B., & Wolf, S. (2005). Dramatic learning in the primary school. London, UK: Creative Partnerships.

Hockly, N. (2000). Modelling and 'cognitive apprenticeship' in teacher education. *ELT Journal*, *54*(2), 118-125.

Kardash, C. A. M., & Wright, L. (1986). Does creative drama benefit elementary school students: A meta-analysis. *Youth Theatre Journal, 1*, 11-18.

Kidd, D. (2011). The mantle of Macbeth: *English in Education, 45*(1), 72-85.

Kincheloe, J. (2008). *Critical pedagogy primer* (2nd ed.). New York, NY: Lang.

Langley, A. (1999). Strategies for theorizing from process data. *The Academy of Management Review, 24*(4), 691-710.

Lee, B. (2013). The process of developing a partnership between teaching artists and teachers. *Teaching Artist Journal, 11*(2), 26-34.

Lee, B., Cawthon, S., & Dawson, K. (2013). Teacher self-efficacy for teaching and pedagogical conceptual change in a drama-based professional development program. *Teaching and Teacher Education, 30*, 84-98.

Lee, B., Patall, E., Cawthon, S., & Steingut, R. (2015). Meta-analysis of the effects of drama-based pedagogy on K-16 student outcomes since 1985. *Review of Educational Research, 85*(1), 3-49. doi: 10.3102/0034654314540477.

Lindeman, E. C. (1944). New needs of adult education. *Annals of the American Academy of Political and Social Sciences*, *231*, 115-122.

Loving, C., & Foster, A. (2000). The religion-in-the-science-classroom issue: Seeking graduate student conceptual change. *Science Education, 84*(4), 445-468.

Moreno, R., & Mayer, R. (1999). Cognitive principles of multimedia learning: The role of modality and contiguity. *Journal of Educational Psychology, 91*(2), 358–368.

O'Neill, C. (1995). *Drama worlds: A framework for process drama*. Portsmouth, NH: Heinemann.

Paas, F., Renkel, A., & Sweller, J. (2004). Cognitive load theory: Instructional implications of the interaction between information structures and cognitive architecture. *Instructional Science, 32*, 1-8.

Pallas, A. M. (2001). Preparing education doctoral students for epistemological diversity. *Educational Researcher, 30*(5), 6-11.

Pinar, W., & Grumet, M. (1988). Socratic *casura* and the theory-practice relationship. In W. Pinar (Ed), *Contemporary curriculum discourses*. Scottsdale, AZ. Gorsuch Scarisbrick.

Podlozny, A. (2000). Strengthening verbal skills through the use of classroom drama: A clear link. *Journal of Aesthetic Education, 34*(3/4), 239-275.

Schechner, R. (1992). A new paradigm for theatre in the academy. *TDR: The Drama Review, 36*(4), 7-11.

Schön, D. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.

Smagorinsky, P., & Coppock, J. (1995). Reading through the lines: An exploration of drama as a response to literature. *Reading & Writing Quarterly, 11*(4), 369-391.

Stewart, K. K., & Lagowski, J. J. (2003). Cognitive apprenticeship theory and graduate chemistry education. *Journal of Chemistry Education, 80*(12), 1362-1366.

Strauss, A. & Corbin, J. (1990). *Basics of qualitative research: Grounded Theory procedures and techniques*. Newbury Park, CA: Sage.

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science, 12*(2), 257–285.

Van Manen, M. (1999). The practice of practice. In M. Lange, J. Olson, H. Hanson, & W. Bunder (Eds.), *Changing schools/Changing practices: Perspectives on educational reform and teacher professionalism*. Luvain, BE: Garaut.

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.), Boston, MA: Harvard University Press.

Wagner, B. J. (1998). *Educational drama and language arts: What research shows*. Portsmouth, NH: Heinemann Drama.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Teacher Education, 61*, 89-99.

_____

BRIDGET KIGER LEE is a post-doctoral researcher at The Ohio State University, 333 Arps Hall, 1945 N. High St., Columbus, OH, 43210-1172; e-mail: lee.6237@osu.edu. She holds a Ph.D. in Educational Psychology and an M.F.A. in Drama and Theatre for Youth from The University of Texas at Austin. Her research interests include the effects of drama-based pedagogy on various academic-related outcomes, the processes by which teachers shift pedagogical practices and the effects on student outcomes, and the development and application of research on arts integration pedagogies for use in educational policy.

KATHRYN DAWSON is an assistant professor in theatre and Director of Drama for Schools at The University of Texas at Austin, 300 E, 23rd St, D3900m Austin, TX 78712-0383; email: kathryndawson@austin.utexas.edu. She holds an M.F.A. in Drama and Theatre for Youth from The University of Texas at Austin. Her research interests include drama-based pedagogy, arts integration, museum theatre and teaching artist pedagogy and practice.

STEPHANIE CAWTHON is an associate professor of educational psychology at The University of Texas at Austin, 1 University Station, D5800, Austin, TX 78712-0383; e-mail: Stephanie.cawthon@mail.utexas.edu. She holds a Ph.D. in educational psychology from University of Wisconsin-Madison. Her research interests include issues of equity and access to education.

Appendix
Consider these questions in relation to your position within Drama for Schools.

I.   Self-Assessment

    Greatest Strengths:
        1.
        2.
        3.

    Development Areas:
        1.
        2.
        3.

II.   Competence (knowledge, skill and/or behavior)

    The one development area that I commit to working with for the semester is/are:
    Because: (why this competence, why now)

III.   Development Plan

    To support my continuous improvement with this knowledge, skill and/or behavior, I plan to incorporate the following practices into my work:

        1.
        2.
        3.

I have chosen these specific methods toward improvement because:
        Some challenges I am concerned about are:
        I hope to address the challenges by:
        Katie and Bridget can assist me in this area by:

IV.   Improved Performance

    I will know I have been successful as a Teaching Artist when:
    My success will affect my colleagues by:
    My success will affect my *DFS* program by:

Adapted from: Management Coaching Curriculum developed by Janis Glenn and Jackie Jordan-Davis

Exploring Students' Experiences in First-Year Learning Communities From a Situated Learning Perspective

Kerry L. Priest, Donald A. Saucier, and Gregory Eiselein
Kansas State University

This study looked to situated learning (Lave & Wenger, 1991) in order to explore students' participation in the social practices of first-year learning communities. Wenger's (1998) elaboration on "communities of practice" provides insight into how such participation transforms learners. These perspectives frame learning as a socialization and identity shaping process in which learners gain knowledge and skills contextualized, and legitimized, by their communities. We used a survey method and open-ended questions to examine three facets of participation: students' access and motivation to join the community, meaning of their experiences within the community, and trajectory of learning – that is, how participation influenced their later academic or professional decisions. Our findings emphasize that students are motivated by, and find value in, the academic content and engaged pedagogical approaches offered by first-year learning communities; the meaning of their experiences, however, is negotiated through social relationships.

The growing trend in learning communities at our own institution – and nation-wide – draws from contemporary educational models that emphasize the value of holistic, collaborative, co-constructed learning experiences and environments on undergraduate education (Baxter Magolda, 2004). Simply creating a group-based structure and calling it a learning community does not necessarily achieve these aims, however (Engstrom & Tinto, 2008; Lichtenstein, 2005). Rather, it is the "sense of community" (Lichtenstein, p. 353) fostered through supportive social and academic environments, connections between students, peers, and caring teachers that leads to powerful learning outcomes.

While the social impact of first-year learning communities has been well documented (e.g., Brownell & Swaner, 2010; Domizi, 2008; Jaffe, Carl, Phillips, & Paltoo, 2008; Tinto, 1997, 2003), less is known about the social process of learning that happens within communities. Our research looks to situated learning (Lave & Wenger, 1991), which describes learning as participation in the social practices of communities, to examine this process. Wenger's (1998) elaboration on "communities of practice" provides insight into how such participation transforms learners. These perspectives frame learning as a socialization and identity shaping process in which learners gain knowledge and skills contextualized, and legitimized, by their communities.

The purpose of this study was to describe students' perceptions of participation within first-year learning communities from a situated learning perspective. To do so, we explore three facets of participation: access to membership, students' experiences of membership (i.e., meaningful practices and relationships within the community), and their learning trajectory (intentions for "next steps" in their learning process). The specific research questions guiding this study were

1. How and why do students gain access to learning communities?
2. What are students' perceptions of their experiences of membership in learning communities?
3. How does participation in learning communities influence students' next steps as learners in general, as college students, or future professionals?; and
4. How do these facets vary across different types of learning communities?

Background

Prior research has identified multiple positive student success outcomes related to learning communities in higher education, particularly first-year learning communities. Participation in learning communities has been shown to improve persistence beyond the first semester or first year and into the sophomore year (Engstrom & Tinto, 2008; Stassen, 2003; Tinto, 1997; Tinto & Russo, 1994) and to enhance academic performance, as measured by grades and improved study habits (Lord, Coston, Davis, & Johannes, 2012; Zheng, Saunders, Shelley, & Whalen, 2002). Additionally, research shows that learning communities impact important outcomes such as student engagement and involvement, satisfaction with the college experience, and even career preparation (Engstrom & Tinto, 2007; Kuh, 2008; Lord et al., 2012; Rocconi, 2012; Stassen, 2003; Taylor, Moore, MacGregor, & Lindblad, 2003; Zhao & Kuh, 2004).

First-year learning communities provide both academic and social support, and the socially supportive peer group environment has been seen as key to many positive benefits. Tinto (1997) asserts that learning communities provide a support network that "bond[s] students to the broader social communities of

the college while also engaging them more fully in the academic life of the institution" (p. 613). Researchers have described how first-year learning communities allow for friendship formation and create a sense of community (Jaffe et al., 2008), as well as the development of educational citizenship (Tinto, 2003). Moreover, learning communities promote the development of academic and social support networks for students (Domizi, 2008), enhances involvement in the classroom and in social activities resulting in better integration of students' academic and personal lives (Johnson, Johnson, & Smith 1998), and enhances feelings toward collaborative learning (Tinto, 2003). Learning communities also foster connections and interaction beyond the first year, which contribute to students' ongoing campus involvement, including taking on leadership roles (Firmin, Warner, Johnson, Firebaugh, & Firmin, 2010).

Conceptual Framework

Situated learning and communities of practice. Lave and Wenger's (1991) theory of situated learning, as well as Wenger's (1998) elaboration on communities of practice, offers educators a framework to explore and describe the relationships between the self and the social world in higher education. Situated learning shifts the focus from learning *about* the social world to learning *in* and *through* it. Theories about human learning in relation to social culture and context are certainly not new. Vygotsky's (1978) cultural-historical perspective suggests that learning and development cannot be dissociated from their contexts. Lave (1988) describes the knowledge in our head as "indivisible" from the social world outside our head (p. 1). Both Dewey (1916/1980) and Holland (1966, 1985) theorizes human behavior and experiences as an interaction between the individual and the environment, and others have advanced the perspective that the "fit" between an individual's personality and their environment is especially important for college student success and academic decision making (Astin, 1993; Feldman, Smart, & Ethington, 1999; Porter & Umbach, 2006). Brown, Collins, and Duguid (1989) suggest that learning is an enculturation process, advocating that formal education include not only learning *about concepts*, but the authentic *practice of concepts* within the cultures and contexts in which they will be used.

Communities of practice represent the engagement in authentic practices within a particular place and set of relationships (Lave & Wenger, 1991). A situated learning perspective assumes that as learners participate in the social and cultural practices of a community, they foster social relationships and gain mastery of knowledge and skills that move them from the position of "newcomers" towards the role of "full participants"

(Lave & Wenger, 1991, p. 29). This developmental process, called legitimate peripheral participation (LPP), is an identity formation process.

Applying a situated learning perspective to examine the LPP process within communities of practice in the context of higher education learning communities provides a language to describe, and a lens to analyze, first-year students' transition into college as well as their identity development within various communities of practice. There are several key tenets of LPP that are especially relevant to college student development, in particular the first-year experience.

Access to membership. First, LPP proposes that as "newcomers" (i.e., first-year students) gain access to a community, their participation is that of an observer. Theoretically, it is from this point of view that students begin to gain a general idea about what acceptable practice looks like in the community (e.g., what to do, how to conduct their lives, how to talk and who to talk to), and begin to see who and what they could become from interaction with more mature role models (Lave & Wenger, 1991). Applied to our context, we defined access as how students learned about, and made the decision to enroll, in learning communities.

Experiences of membership. Next, LPP suggests that as newcomers engage in the "everyday life" of a community, they gain legitimacy through access to information, resources, and opportunities for participation (Lave & Wenger, 1991, p. 95). Participation *is* learning. Through engagement in the practices of a community, newcomers make meaning of their experiences, expand their sense of motivation and belonging, and thus initiate a natural change in identity toward a "full practitioner" (p. 95). Within higher education communities, the meaning of participation becomes a critical component of learning assessment: What practices or activities do students find meaningful in first-year learning communities, and why?

Wenger (1998) further describes meaning-making as a social activity. As a member of, and learner in, a community, one's individual perspectives and understandings are shaped not only by participation, but also by reification, the process by which a person gives form to her experience (e.g., naming, interpreting, categorizing as a result of experience) (1998). Thus, we examined first-year students' interpretations and representations of their meaningful and memorable community experiences for insight into their engagement and learning process.

Trajectory of learning. Dewey said, "Every experience is a moving force" (1938, p. 38). Education as a growth process involves practical preparation for future professional duties through rich and significant experiences in the present, as well as a developmental process to "unfold" various qualities of the self towards some definite goal (Dewey, 1916/1980). The meaning

and significance of these processes both rely on movement towards something. Wenger's (1998) description of learning trajectories within communities of practice provides a language for this movement. The communities in which we participate provide a field of possible trajectories that emerge from experience and give form to "what's next"; over time, our forms of participation create a path for identity development (Wenger, 1998, p. 155). Applied to the transition to college, the socialization process involves taking on the practices of the various communities in which students belong and participate. First-year learning communities are designed to be a space where new ways of thinking and doing interact with past experiences and future aspirations, and therefore they create trajectories of learning. Thus, we explored students' choices about their own next steps.

Methods

Participants

Learning communities were introduced in 2010 as a signature component of a first-year experience program at Kansa State University, a large state land-grant university in the Midwest. We used a First-Year Interest Group (FIG) model in which a cohort of students take two general education classes, linked by an interdisciplinary connections course. Each learning community of approximately 20 students is facilitated by a lead instructor, supporting instructor(s), and an undergraduate learning assistant (LA) serving in a peer mentor role. The program grew from six initial communities in the fall semester of 2010 to fourteen different learning communities by the fall semester of 2012. As described below, these communities were characterized as "liberal arts," "pre-professional," "residential," and "study abroad."

Participants were first-semester first-year students enrolled in first-year learning communities during the fall semester of 2012. The majority of these students were of traditional college age, female (62%), White (73%), and from communities in the state in which the university was located (81%). These demographics mirror the demographics of first-year students at the university in general (with the exception of sex for which first-year students university-wide showed a more equal distribution of male and female students). It should be noted that demographic information was not collected as part of, or connected to, participants' responses in the study to protect the participants' anonymity. Each learning community was comprised of a set of three connected courses. Two of these courses were normal introductory courses in academic disciplines, and they were comprised of both students enrolled and not enrolled in the learning community.

The learning community was identified around the third "connections" course, comprised of only a small number of students (maximum enrollment was 22), which was designed to use active learning techniques to integrate and extend the skills and content from the other two courses.

Fourteen learning communities were offered in four different categories. Five of the learning communities were categorized as "pre-professional" learning communities (e.g., Pre-Physical Therapy, Profitability in Livestock), and consisted of groups of students who took a common set of three courses focused on providing the foundation for a specified concentration of academic study. Six of the learning communities were categorized as "liberal arts" learning communities (e.g., Gender, Race, and Class in America; Understanding the Weather), and consisted of groups of students who took a common set of three courses focused on a broad topic of interest, but not specifically designed as a foundation for future academic study. Two were living learning communities (i.e., Psychology of Prejudice, The American Story) and consisted of groups of students who not only enrolled in a common set of three courses focused on a broad topic of interest, but also lived together in the same residence hall. One learning community was categorized as a study-abroad/service-learning community (i.e., Spanish in Action). Students in this community took a set of common courses during the fall semester of 2012, and then traveled together over the winter break to another country to practice foreign language skills and complete a service-learning project. At the time this study was conducted, this learning community had not yet participated in their international service experience.

All students enrolled in these learning communities ($N = 226$) were invited to participate in this study, and 103 of the students participated (46% response rate). The sample consisted of students from each of the fourteen learning communities, with three to 12 students from each learning community participating. Forty-three participants were from pre-professional learning communities, 32 were from liberal arts learning communities, 20 were from residential learning communities, and 8 were from the service-learning community.

Procedure

Because of the exploratory nature of this study, a survey methodology was used to collect and describe students' perceptions of their experiences of membership in learning communities. All students were sent an email invitation to participate in an online survey during November of the fall semester of 2012. Completion of the surveys took participants less than 30 minutes. No incentive was provided for their participation. Survey responses were collected anonymously and were not

shared, individually or collectively, with the instructors of the learning community courses.

Guided by the research questions, we designed survey items to capture both quantitative and qualitative data in order to provide insight into three categories, or components of learning in communities, which may contribute to students' identity development (Lave & Wenger, 1991; Wenger 1998). These categories were identified as the following: a) access and motivation (exploring how and why students entered into communities); b) meaning of participation (exploring students' perceptions of experiences of membership in communities); and c) learning trajectories (exploring how participation in a learning community influenced students' next steps as learners in general, as college students, or their professional aspirations) These items were inspired by past research on situated learning, but were written for use in this study with the goal of maximizing the items' face and content validity.

Access, motivation, and expectations. Students reported how they accessed the information about the learning communities by completing several items referring to the sources that may have provided information about the learning communities to them. Students first responded by selecting "yes" or "no" to report whether or not they had heard about the learning communities from materials they received in the mail, resources they read online, advisors on campus, faculty or staff on campus, other students, parents, or other family members. Students then reported how much influence each of these sources of information had on their decisions to enroll in the learning communities using scales from 1 (*Not at all*) to 9 (*Very much*). Students then reported which of four possible influences (i.e., "I did," "An advisor/faculty/staff member did," "My parents/family did," and "Another student did") had the largest role in their decisions to enroll in the learning communities. Finally, students reported both their motivations for enrolling in the learning communities and their expectations for the learning communities in free response formats.

Meaning of membership. To assess the meaning they found in their learning community experiences, participants completed several items related to those experiences. Participants reported how connected they felt to the other students in the learning community, the course content and topic, the instructor, the learning assistant, and the university as a whole using a scale from 1 (*Not at all*) to 9 (*Very much*). Using free-response formats, students reported the strongest bonds or connections they formed in the learning communities, as well as their most memorable and most meaningful experiences in the learning communities.

Learning trajectory. To assess how the students perceived the experiences in the learning communities to have impacted their learning trajectory, students reported if the learning community changed their outlook or plans for the future by choosing "yes" or "no." Students also reported how much the learning community changed their outlook or plans for the future using a scale from 1 (*Not at all*) to 9 (*Very much*), and explained how the learning community changed their outlook or plans for the future using a free-response format.

Analytical procedures. Ratings made by participants on numerical scales were compared to midpoints of the response scale using one-sample *t*-tests. Comparisons between participants enrolled in the different types of learning communities on their quantitative ratings were made using between groups one-way analyses of variance using the type of learning community as a four-level factor for each item. The comparison of ratings of how much each of the sources of information was an influence in participants' decisions to enroll in the learning communities was made using a repeated measures analysis of variance. Bonferroni-corrected multiple comparison procedures were used when appropriate to probe effects. The alpha level of all analyses was set at .05; however, we reported and probed marginally significant effects when they occurred due to our relatively small sample size (and reported these as such). Given that these general linear model procedures are robust to violations of the assumptions of normality and homogeneity of variance, we conducted no transformations on our data, nor did we replace missing values. All analyses were thus conducted using the responses provided by our participants, and only those responses provided by our participants, without alteration.

Qualitative descriptions generated by the free-response questions were analyzed initially by three independent coders, who categorized items and created a common coding scheme. Once a list of common themes was agreed upon, all items were then categorized for the presence or absence of each theme by two independent coders. The themes were coded reliably, *phi product moment correlations* $\geq$ .70, and the remaining coding discrepancies were resolved by discussion. It should be noted that participants may have replied to the free response items in ways that addressed more than one of the coded themes (i.e., the percentages of participants reporting themes for an item may sum to more than 100%). The extents to which these themes were reported by students in the different types of learning communities were compared using χ^2 tests of independence. The items are available by request from the authors.

Results

Access, Motivations, and Expectations

Access to learning communities. Survey items related to access examined how and why students enrolled in learning communities. Participants indicated

that advisors on campus were most instrumental in providing them with resources about the learning communities (60% indicated that advisors provided them with this information). Fewer participants indicated that materials they received in the mail (29%), other faculty or staff on campus (25%), resources they read online (15%), other students (4%), parents (3%), or other family members (0%) provided them with resources about the learning communities. Participants reported differences in how much influence each of these sources of information had on their decisions to enroll in the learning communities, F (6, 594) = 48.80, $p < .001$, *partial eta squared* = .33. Bonferroni multiple comparison procedures indicated that advisors (M = 6.70, SD = 3.01) were significantly more influential than any other source of information. Further, the mean rating of the influence of advisors was the only mean rating among the sources to exceed the value of the scale's midpoint, and it did so significantly, t (99) = 5.64, $p < .001$. Other faculty or staff on campus (M = 4.55, SD = 3.52) were significantly more influential than any other sources, excluding advisors. The other sources of information were rated as having little influence on the decisions to enroll in the learning communities (Ms < 2.71, SDs < 2.87), and each of these mean ratings were significantly lower than the midpoint of the scale, ts (99) > 6.92, ps < .001. Participants reported that they themselves had the most influence on the decisions to enroll in the learning communities (58%), with fewer participants indicating that an advisor, faculty, or staff member did (36%), their parents or family did (6%), or another student did (0%), χ^2 (2) = 40.88, $p < .001$.

Comparisons among the different types of learning communities revealed that students differed in how they accessed the information. The majority of students in service-learning (88%), residential (75%), and liberal arts (66%) learning communities reported that advisors on campus were most instrumental in providing them with resources about the learning communities, but this was not true for students in pre-professional learning communities (44%), χ^2 (3) = 9.13, $p = .025$. Students in the pre-professional learning communities were relatively more likely to report getting resources from faculty or staff on campus (37%) than were students in the service-learning (25%), liberal arts (22%), and, most notably, residential (5%) learning communities, χ^2 (3) = 7.80, $p = .050$. Students in the pre-professional learning communities rated that their decisions to enroll in the learning communities were more influenced by resources they read online, F (3, 96) = 2.78, $p = .046$, *partial eta squared* = .08, and by faculty or staff on campus, F (3, 96) = 4.49, $p = .005$, *partial eta squared* = .12, and less influenced by advisors, F (3, 96) = 2.76, $p = .046$, *partial eta squared* = .08, than were students in the other types of learning communities. Students in all learning communities were

similar in reporting that they themselves had the most influence on the decisions to enroll in the learning communities, χ^2 (6) = 5.50, $p = .481$.

Student motivations. Analysis of the participants' free responses regarding their motivations for enrolling in the learning communities revealed the emergence of four themes. First, participants were motivated to enroll in learning communities because of the *academic content contained in the set of courses*. One student stated, "I expected to learn a lot about physical therapy and what I have to do as a student to apply for physical therapy school." Students were also motivated to participate in the *educational environment* (e.g., smaller class, hands-on content) offered by a learning community. One student reported, "I was expecting a small course with students who are experiencing their first year of college just like me." Many students hoped to *establish relationships* (e.g., with other students and/or the professor) in the learning community. *Other extrinsic factors* were also identified as motivators for enrollment (e.g., because they were told to enroll, to get into a specific residence hall, or to get into required classes for their program of study). Comparisons among the different types of learning communities revealed that students in the service-learning learning community being more likely than those in the other learning communities to report being motivated to enroll for the educational environment, while being less likely to report being motivated to enroll to establish relationships. See Table 1 for the percentages of students within the learning communities overall, and within each type of learning community, who reported the respective themes in their free responses to this item and the items below.

Student expectations. Analysis of the participants' free responses regarding their expectations for the learning communities revealed the emergence of five themes. Similar to the findings for the participants' motivation for enrolling in the learning communities, participants reported that they expected *engagement with specific academic content*, specific features of the *educational environment*, and/or to *form relationships* in the learning community. For example, a student said, "I expected academic support and professors that cared about my success." Another student described her relational expectation was to "get to know people and build confidence." A small number of participants indicated that they had *low or negative expectations* or that they had *no expectations* for the learning community. Comparisons among the different types of learning communities revealed that students in the pre-professional learning communities were the most likely, and students in the liberal arts learning communities were the least likely, to report expectations about the academic content of their learning community courses. Further, students in the residential learning communities

Table 1
Students in Learning Communities Reporting Motivations, Expectations, and Experiences

Free Response Items and Themes Communities	Percentage of Students Reporting the Themes by Types of Learning				
	Pre Professional	Liberal Arts	Residential	Service Learning	Overall
Motivation for Enrolling					
Academic Content	54%	28%	35%	50%	43%
Educational Environment*	30%	44%	45%	88%	43%
Relationships+	42%	31%	35%	0%	31%
Other Extrinsic Factors*	12%	44%	35%	13%	26%
Expectations for Learning Communities					
Academic Content*	67%	28%	35%	50%	48%
Educational Environment+	33%	53%	35%	75%	43%
Relationships*	19%	31%	45%	0%	26%
Low/Negative Expectations	12%	3%	15%	13%	10%
No Expectations	12%	16%	25%	0%	15%
Strongest Connections					
Other Students	70%	72%	50%	88%	68%
Instructor	26%	31%	45%	25%	31%
Learning Assistant	14%	9%	20%	13%	14%
Course Content+	2%	9%	20%	0%	8%
University	5%	3%	0%	0%	3%
No Strong Connections	12%	9%	10%	0%	10%
Memorable Experiences					
Out of Class Activities*	56%	22%	55%	75%	47%
Academic Content*	47%	28%	20%	75%	38%
Relationships	23%	28%	40%	50%	30%
Educational Environment	26%	31%	20%	13%	25%
No Memorable Experiences	14%	19%	10%	0%	14%
Negative Memorable Experiences	2%	10%	5%	0%	5%
Meaningful Experiences					
Academic Content	26%	38%	40%	50%	34%
Educational Environment	28%	41%	35%	13%	32%
Out of Class Activities+	30%	16%	10%	50%	23%
Relationships	21%	25%	10%	25%	20%
Preparation for Success	19%	6%	20%	13%	15%
No Meaningful Experiences	12%	16%	25%	0%	15%
Negative Meaningful Experiences	2%	0%	0%	0%	1%
Learning Trajectory					
Academic/Career Decisions	40%	19%	20%	13%	21%
Awareness/Thinking	7%	16%	15%	25%	13%
Preparation for Success	5%	13%	20%	13%	11%

Note: Percentages refer to the proportion of students within each type of learning community who reported the respective theme in their free response to that item. Because students could report more than one theme in their free response, the percentages may sum to more than 100%. Symbols indicate that a χ^2 test of independence indicated that the percentages of students who did versus did not report the theme in their free response to the item differed at marginally significant (+) or significant levels across the types of learning communities

were the most likely, and students in the service-learning learning community were the least likely, to report expectations about the relationships they expected to form in their learning communities. See Table 1.

Meanings of Membership

To understand how students made meaning of their membership in learning communities, items explored students' perceptions of their experiences. Participants reported feeling connected to the other students in the learning community, the course content and topic, the instructor, the learning assistant, and the university as a whole. Mean ratings of their levels of connectedness to each of these targets (Ms > 6.24, SDs < 2.46) significantly exceeded the midpoint of the response scale, ts (98) > 5.20, ps < .001. Further, participants reported similar levels of connectedness to each of the targets, F (4, 392) = 1.71, p = .148, *partial eta squared* = .02. Among the different types of learning communities, no significant differences emerged among the different types in their reported levels of connectedness to the other students in the learning community, the course content and topic, the learning assistant, and the university as a whole, Fs (3, 95) < 1.22, ps > .12, *partial etas squared* < .06. A marginally significant difference emerged among the learning community types on their reported levels of connectedness to the instructor, F (3, 95) = 2.46, p = .068, *partial eta squared* = .07. Bonferroni multiple comparison procedures revealed that students in the residential learning communities reported more connection to their instructors (M = 7.70, SD = 1.59) than did participants in the service-learning learning community (M = 5.38, SD = 2.00), p = .070. Students in the pre-professional (M = 6.63, SD = 2.23) and liberal arts (M = 6.60, SD = 2.40) learning communities did not differ in their reported levels of connection to their instructors from each other or students in the other learning communities.

Strongest connections. Analysis of the participants' free responses regarding the strongest bonds or connections they formed in the learning communities revealed the emergence of six themes. Participants reported the strongest connections to the *other students* in the learning community. One student found a "best friend on campus" in her community. Another student elaborated on the value of these personal connections:

The friendships that I have made are absolutely amazing, and the sense of unity that we all have I feel is crucial and important. I feel like it has made learning a little easier, and I am no longer afraid to

speak out in class for fear of being judged because we all understand each other.

Students also reported strong connections to the *learning community instructor* and the *learning assistant*, as the example below illustrates:

The teachers really care about whether or not we understand the material and they are even concerned about our personal needs. I love being able to walk by one of my instructors or the [learning assistant] and be able to have a real conversation.

Participants reported their connections to the *course content* or to *the university as a whole* at lower rates. Relatively few participants reported that they *did not form any strong bonds or connections* in the learning community.

Comparisons of the different types of learning communities showed little variability among the learning communities in their reports of strongest connections. Only a marginally significant effect emerged on the students' connections to the course content, with students in the residential learning communities being more likely to report connections to course content than were students in the other learning communities. See Table 1.

Memorable experiences. Analysis of the participants' free responses regarding their most memorable experiences in the learning communities revealed the emergence of six themes. Participants reported the most memorable experiences were *out-of-class learning community activities*, which included activities such as field trips, study sessions, service learning, and guest speakers. As one student explained, "It was nice to be able to get with the class outside the classroom and talk about things that related to the class itself."

Many students described how the *academic content* covered in the learning community was particularly memorable. Examples include exposure to new ideas or drawing connections between courses.

Participants described how *relationships formed* with their teachers, learning assistants, or peers were the most memorable, and they identified memorable experiences related to aspects of the *educational environment*. This included class discussion and activities; for example, one student reminisced about an interaction where the "whole class was laughing and enjoying the excitement of class that day." Relatively few participants reported that they had *no memorable experiences* or had *negative memorable experiences* in the learning communities.

Comparisons of the different types of learning communities revealed that reports of memorable

experiences did vary in the students' reports of out-of-class activities being more memorable (most common for students in the service-learning learning communities and least common for students in the liberal arts learning communities). Reports of memorable experiences also varied in the students' reports of academic content being more memorable (most common for students in the service-learning learning communities and less common for students in the liberal arts and residential learning communities). See Table 1.

Meaningful experiences. Analysis of the participants' free responses regarding their most meaningful experiences in the learning communities revealed the emergence of seven themes. Similar to the findings for participants' memorable experiences, participants reported that their most meaningful experiences came from the *academic content* covered in the learning community. For example, one student reported the following:

> The most meaningful event that we have done is when we speak in class on prejudice … This is most meaningful to me simply because it gives a big insight on society today and the ways in which people still decide to partake in prejudice events and shows that there are ways in which they can be stopped.

The *educational environment* created by the learning community, the *out-of-class learning community activities*, and the *relationships formed* within the learning community were also meaningful to participants. One student explained, "We have had some great conversations within the [community] discussion hour. I value the opinions and thoughts of my peers …" A few participants reported that their most meaningful experiences related to *preparation for college success*, or making progress toward acquiring the skills, knowledge, and/experiences that would contribute to their future success as college students. One student described this as "the information about campus and [University] in general. It has helped with any issue facing me as well as other students." Another described how it was meaningful "when we talked about the enrollment process in class because that has helped prepare me to make my own class schedules and to work with my advisor." Relatively few participants reported that they had *no meaningful experiences* or had *negative experiences* in the learning communities.

Comparisons of the different types of learning communities showed little variance in the students' reported meaningful experiences. Only for reports of out-of-class activities as meaningful did a marginally significant effect emerge, with students in the service-learning learning community being more likely, and students in the liberal arts and residential learning communities to be relatively unlikely, to report that out-of-class activities were most meaningful to them. See Table 1.

Learning Trajectory

We assessed the students' learning trajectories as a result of their learning community experiences. In other words, we wanted to understand more clearly how participation in a first-year learning community influences students' next steps as learners in general and as college students, as well as the influence on their professional aspirations. Just under half of the participants (49%) indicated that their experiences in the learning community changed their outlook or plans for the future. The extents to which participants indicated that their experiences in the learning community changed (versus did not change) their outlook or plans for the future did not vary significantly across the different types of learning communities, χ^2 (3) = 0.94, p = .815. Mean ratings of how much the learning community changed their outlook or plans for the future (M = 5.92, SD = 1.56) significantly exceeded the midpoint of the scale, t (49) = 4.16, p < .001. These ratings did not differ across the different types of learning communities, F (3, 95) = 0.07, p = .976, *partial eta squared* < .01.

In the participants' free responses about how the learning community changed their outlook or plans for the future, three themes emerged. The most common theme reported was that the learning community experience influenced their future *academic and/or career decisions*, such as by increasing their interest in a topic, major, or career direction. One student explained in general terms, "The [classes] have helped me make some decisions as to what I may want to go into as a future career and to possibly choose a major." For another student, the influence was more specific: "This course has changed my outlook on making future business decisions on my family's farming operation."

Other participants reported that the learning community experience changed their perspective by *increasing their awareness and broadening their thinking*, for example, "The [class] has given me a new outlook on music, and has opened my eyes to the issues going on in the world today." Finally, the learning community experience made them *better prepared to succeed in college*. One student's description summarizes well this category of response:

> I came to college scared of almost everything that had to do with academics, people, and life here. I was scared that I didn't know anyone and I'd never get friends. I was scared that the classes would be too hard and I would fail. I was even scared that I wouldn't be able to live away from my parents.

> This class has made me feel ready and prepared to take on my next three and a half years of college.

These results indicate that, while not all participants reported that their learning community experiences changed their future outlook or plans, several participants did attribute positive changes in their learning trajectories to their experiences in the learning communities. The extents to which students reported these themes did not vary significantly across the different types of learning communities. See Table 1.

Discussion

This study contributes to the growing body of knowledge about learning communities by exploring students' participation in a first-year learning community through the conceptual framework of situated learning (Lave & Wenger, 1991) and communities of practice (Wenger, 1998). Assuming learning is a process of participation within a community of practice, we used a survey method and open-ended questions to examine students' experiences of membership within first-year learning communities, including access and motivation to join the community, meaning of their experiences within the community, and trajectory of learning, specifically how participation influenced their next steps of "becoming," academically or professionally. This study reinforces how first-year learning communities offer a situated, social place, people, and processes for student learning and development (Dewey, 1916/1980; Lave & Wenger, 1991; Vygotsky, 1978; Wenger 1998).

Limitations

There are limitations to this study, namely that our study was conducted at a single educational institution and employed a relatively small sample size, limiting our ability to generalize. Additionally, the use of one-time, post-test, self-report data limits our ability to explain other factors (developmental, environmental, or otherwise) that may influence students' experience and perceptions not captured by the survey. Despite these limitations, however, our results document the utility of applying a situated learning perspective to better understand the role of students' social and academic experiences within first-year learning communities.

Conclusions and Implications

Access to membership. Advisors played a key role in supporting students' access to learning communities. This finding is not surprising, given that first-year students are "newcomers" to not only the learning community, but also to the campus. Students look to those in positions of leadership for guidance in decision-making. We were surprised by the relatively small impact of parents and families on the decision to join these communities – a result that perhaps complicates the assumption that over-parenting (in the form of "tiger moms" and "helicopter parents") is reshaping students' college experience (Levine, 2006; 2012). Indeed, many participants reported that they made the decision themselves.

Students were motivated to enroll in learning communities because of their interest in the academic content, the type of course environment, and the desire to establish relationships. These interests demonstrate a shared understanding or expectation of what they will be doing within the community and what it means for their own lives. Understanding the motivations of students can help in the creation of new learning communities, as well as inform the construction of a "teaching curriculum," - the structures of learning and best practices (Lave & Wenger, 1991, p. 97).

Meaning of membership. A situated learning perspective also acknowledges a "learning curriculum", or the learners' own perspectives on characteristics of the community that shape meaning and practice (Lave & Wenger, 1991, p. 97). Our participants described how their learning community experiences helped them to develop broad and strong connections to each other, to the academic content, to the instructor and learning assistant, and to the university as a whole. Additionally, they reported that their experiences in the learning communities were both memorable and meaningful, particularly as these experiences related to the academic content, out-of-class activities, educational environment, and opportunities to build relationships within the learning communities.

Legitimate peripheral participation within communities of practice (Lave & Wenger, 1991; Wenger 1998) helps us interpret the dynamics found between the content, the environment, and the relationships. Students in our learning communities were engaged in learning practices that included more than just knowledge acquisition; rather, they engaged in experiences situated in classroom relationships, campus life, and professional preparation. As new members move towards full participants in a community, they experience shifting views of self, belonging, and motivation (Lave & Wenger).

Unfortunately, not all students will develop connections within or derive satisfaction from their learning community experiences. Situated learning and LPP may be useful in helping us to understand how and why particular students benefit from learning communities more than others. Thus, future research should explore the experience of students who did not feel connected, which may lead to understanding better the barriers to participation in the activities and practices of learning

communities. Critical questions around participation might include: Who determines legitimacy? And how does participation contribute to legitimacy? (e.g., how and when do students interact and/or use information and resources as a means of gaining legitimacy?)

Trajectory of learning. Meaning that was made through these experiences empowered students to consider or make decisions about the next steps in their education. For some students, their learning trajectory changed dramatically (e.g., *I realized what I don't want to do*), while for others it was more of a subtle strengthening of their confidence in a subject, major, or profession. Either way, the situated perspective allows us to see that these decisions are influenced by the students' interactions within their learning community.

Our study indicates the need for longitudinal data collection to understand how learning community participation influences learners over time. For example, how does the shared history of a learning community influence campus involvement and/or lead to further connections with students, faculty, and other campus or industry professionals?

Our results show that students often are attracted to learning communities by their academic interests and that the learning community experience may yield academic advantages in the students' trajectory at the conclusion of the learning community experience. What is most compelling from our results is that these initial academic aspirations and subsequent academic advantages are bridged by the subjective and meaningful experiences of community in the situated learning contexts provided by first-year learning communities. Simply put, to be successful, the *experience of community* must be emphasized in design and delivery of such programs. Creating the structure of common courses does not automatically foster community; the experience of community is negotiated through social relationships. Learning communities can function as communities of practice when they are designed as not just a form of learning, but a process of learning in which academic content is made meaningful through the shared practices and relationship of the community. This community learning process will nurture the development of first-year students' identities, helping them to transition from being newcomers to becoming full participants in their own higher education and beyond.

References

Astin, A. W. (1993). *What matters in college: Four critical years revisited.* San Francisco, CA: Jossey-Bass.

Baxter Magolda, M. B. (2004). Self-authorship as the common goal of 21st century education. In M. B. Baxter Magolda & P. M. King's (Eds.), *Learning partnerships: Theory and models of practice to educate for self-authorship* (pp. 1-35). Sterling, VA: Stylus.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32-42. doi: 10.3102/0013189X018001032

Brownell, J.E., & Swaner, Lynn E. (2010). *Five high impact practices: Research on learning outcomes, completion, & quality.* Washington, DC: Association of American Colleges and Universities.

Domizi, D. P. (2008). Student perceptions about their informal learning experiences in a first-year residential leadership community. *Journal of the First-Year Experience & Students in Transition, 20*(1), 97-110.

Dewey, J. (1916/1980). Democracy and education. In J. A. Boydston (Ed.) *John Dewey: The Middle Works: 1899-1924, Vol. 9.* Carbondale, IL: Southern Illinois University Press.

Dewey, J. (1938). *Experience & education.* New York, NY: Kappa Delta Pi/Touchstone.

Engstrom, C., & Tinto, V. (2008). Access without support is not opportunity. *Change 40*(1), 46–51. Retrieved from: http://www.jstor.org/stable/40178285

Feldman, K. A., Smart, J. C., & Ethington, C. (1999). Major field and person–environment fit: Using Holland's theory to study change and stability in college students. *Journal of Higher Education, 70*(6), 642–669.

Firmin, M. W., Warner, S. C., Johnson, C. B. Firebaugh, S. D., & Firmin, R. L. (2010). A learning community's potential social impact: A qualitative analysis. *Learning Communities Journal, 2*(1), 73-94.

Holland, J. L. (1966). *The psychology of vocational choice.* Waltham, MA: Blaisdell.

Holland, J. L. (1985). *Making vocational choices.* Englewood Cliffs, NJ: Prentice-Hall.

Jaffee, D., Carle, A.C., Phillips, R., & Paltoo, L. (2008). Intended and unintended consequences of first-year learning communities: An initial investigation. *Journal of the First-Year Experience and Students in Transition, 20*(1), 53-70.

Johnson, D. W., Johnson, R. T., & Smith, K. A. (1998). *Active learning: Cooperation in the college classroom* (2nd ed.). Edina, MN: Interaction Book Company.

Kuh, G. D. (2008). *High-Impact educational practices: What they are, who has access to them, and why they matter.* Washington, DC: Association of American Colleges and Universities.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, UK: Cambridge University Press.

Levine, M. (2006). *The price of privilege: How parental pressure and material advantage are creating a generation of disconnected and unhappy kids.* New York, NY: Harper.

Levine, M. (2012). *Teach your children well: Parenting for authentic success.* New York, NY: Harper.

Lichtenstein, M. (2005). The importance of classroom environments in the assessment of learning community outcomes. *Journal of College Student Development, 46*(4), 341-356.

Lord, V. B., Coston, C. T. M., Davis, B., & Johannes, K. S. (2012). The impact of a discipline-based learning community on transfer students: A multi-dimensional pilot study. *Journal of the First-Year Experience & Students in Transition, 24*(2), 63-84.

Porter, S. R., & Umbach, P. D. (2006). College major choice: An analysis of person-environment fit. *Research in Higher Education, 47*(4), 429-449. DOI: 10.1007/s11162-005-9002-3

Rocconi, L. M. (2012). The impact of learning communities on first-year students' growth and development in college. *Research in Higher Education, 52*(2), 178-193. doi: 10.1007/s11162-010-9190-3

Stassen, M. L. (2003). Student outcomes: The impact of varying living-learning community models. *Research in Higher Education, 44*(5), 581-613.

Taylor, K., Moore, W. S., MacGregor, J., & Lindblad, J. (2003). *Learning Community research and assessment: What we know now.* Olympia, WA: The Evergreen State College, Washington Center for Improving the Quality of Undergraduate Education.

Tinto, V. (1997). Colleges as communities: Exploring the educational character of student persistence. *Journal of Higher Education, 68*(6), 599-623. Retrieved from http://www.jstor.org/stable/2959965

Tinto, V. (2003). Learning better together: The impact of learning communities on student success. *Higher Education Monograph Series*, *1*, 1-8.

Tinto, V., & Russo, P. (1994). Coordinated studies programs: Their effect on student involvement at a community college. *Community College Review 22*(2), 16–25.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.) Cambridge, UK: Harvard University Press.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity.* New York: Cambridge University Press.

Zhao, C. Z., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education, 45*(2), 115-138. doi:10.1023/B:RIHE.0000015692.88534.de

Zheng, J. L., Saunders, K. P., Shelley II, M. C., & Whalen, D. F., (2002). Predictors of academic success for freshmen residence hall students. *Journal of College Student Development, 43*(2), 267–283.

_____

KERRY L. PRIEST is an assistant professor in the Staley School of Leadership Studies at Kansas State University. Her scholarship explores intersections of learning and leadership development, including identity construction and high impact practices for leadership education (e.g., peer leadership, learning communities, and civic engagement).

DONALD A. SAUCIER is an Associate Professor of Psychological Sciences and a University Distinguished Teaching Scholar at Kansas State University. His social psychological research examines the factors that contribute to expressions of antisocial and prosocial behavior, and he is interested in the processes behind faculty and student engagement in teaching and learning.

GREGORY EISELEIN is Director of K-State First, the first-year experience program at Kansas State University, where he is also Professor of English and University Distinguished Teaching Scholar. His current research focuses on first-year learning communities and on the place of pragmatism in American culture.

Development of a Pedagogical Model to Help Engineering Faculty Design Interdisciplinary Curricula

Maria Navarro, Timothy Foutz,
and Sidney Thompson
University of Georgia

Kerri Patrick Singer
Ray International Group

The purpose of this study was to develop a model to help engineering faculty overcome the challenges they face when asked to design and implement interdisciplinary curricula. Researchers at a U.S. University worked with an Interdisciplinary Consultant Team and prepared a steering document with Guiding Principles and Essential Elements for the design, implementation, and evaluation of integrative curricula in engineering education. The team also developed exemplar materials (Integrative Learning Module) to provide a practical example and demonstrate how the tools provided could be used in the development of new curricula. The Guiding Principles, Essential Elements, and Integrative Learning Module were evaluated by faculty and students who provided feedback for their improvement. Faculty indicated that the tools provided were appropriate guidelines for faculty, but they indicated that the Integrative Learning Module was too long to be a manageable example. Students agreed about the need for more interactive, real-world applications of engineering concepts, but they expressed differences of opinion regarding how humanities and social sciences topics should be addressed in the engineering curriculum. Students who participated in a course modeling the Integrative Learning Module were satisfied with its use and learning outcomes. After the course, these students were able to explain the importance of problem definition, process, and disciplinary integration in engineering work.

Introduction and Literature Review

Higher education aims to prepare students to contribute to the design, implementation, and evaluation of responses to challenges such as climate change, global health, and hunger. To do that, graduates will need to demonstrate breadth and depth of knowledge in their discipline and competence analyzing, synthesizing, and integrating of knowledge and methods from several fields of study. The Accreditation Board for Engineering and Technology (ABET) criteria require that students have the ability to work in multidisciplinary teams, adopt professional and ethical responsibilities, and have the comprehensive education necessary to evaluate the impact of engineering solutions in a global, societal, environmental, and economic context (ABET, 2012). To meet these requirements, educators need to integrate elements from a broad spectrum of disciplines into the operational and formal dimensions of the curriculum (Navarro, 2004).

Interdisciplinary understanding refers to the integration of knowledge or thinking practices that produces a new form of understanding that would not be possible in a mono-disciplinary environment (Boix Mansilla & Duraising, 2007). Interdisciplinary teaching requires students to use new and prior knowledge from various disciplines and apply it to a real-world problem (Lattuca, Voigt, & Fath, 2004). Students learn to appreciate other disciplinary knowledge as essential to the practice in their fields (Nikitina, 2006). Most importantly, students learn how to conceptualize, evaluate, and synthesize disparate

and ambiguous pieces of information and data in order to reach conclusions (Lattuca et al., 2004; Spelt, Biemans, Tobi, Luning, & Mulder, 2009). This integration is a dynamic process that occurs at different forms, levels, and intensities. Contextual integration uses the aspects of time, culture, and personal experience to show connections while conceptual integration uses concepts that span across disciplines (Nikitina, 2006; Wolff & Luckett, 2013).

Interdisciplinary courses in engineering education help students learn to critically evaluate disciplines in terms of their strengths and weaknesses (Orillion, 2009), transfer knowledge between disciplines, and analyze and evaluate the relationships between engineering, social sciences, the humanities, and the world in which they live. Through the analysis of different disciplinary data and perspectives, students learn to reflect, analyze, and evaluate all the information to formulate conclusions while still accepting that these conclusions are subject to change if new information arises (King & Kitchener, 2004). Interdisciplinary learning instructors are more likely to use active learning practices, authentic assessments, problem-based or project-based learning, and other teaching pedagogies that foster critical thinking and the use of other higher order thinking skills, which make courses more relevant to students, helps them develop deeper understanding, learn to apply knowledge to real-life problems, and see the 'big picture' (Czerniak, Weber, Sandman, & Ahern, 1999; Klein, 2005). Overall, an interdisciplinary curriculum environment uses certain theories and approaches that might improve learning (Lattuca et al., 2004), and it fosters a climate

conducive to student sustained learning for meaning making, problem solving, reflection (Klein, 2005), and coping with complexity (Spelt et al., 2009).

The new K-12 "teaching to the test" apparent culture has resulted in a discipline-based parceled-out education where students memorize pieces of decontextualized information rather than practice critical thinking skills and learn to connect disciplinary knowledge and processes (Czerniak et al., 1999; Ruiz, Thornton, & Cuero, 2010). The climate is not much different in traditional higher education, which focuses on development of general skills and domain-specific content knowledge (Spelt et al., 2009). Hence, a common model of engineering education in the US is a curriculum constructed with a series of relatively independent discipline-based courses. Typically, students take their required engineering courses and choose some humanities electives to fulfill their general education requirements. One of the consequences of this practice is that students may perceive humanities courses as excess independent requirements to be "checkmarked" rather than important formative ingredients in their education (Arms, 1994), thus they do not take the time to reflect on their significance, application, or value. Further, many systems allow students to select humanities courses randomly or for scheduling convenience rather than strategically, further emphasizing student perception that humanities and social science requirements are unrelated to their discipline or their learning (Blewett, 1993). Similarly, some co-teaching efforts result in the same categorical thinking, for teachers divide and distribute responsibilities, and present their lessons and perspectives separately, as if they had been assigned separate mini-courses, rather than tasked to provide students with an integrated, team-based experience (Klein, 2005).

Traditional forms of higher education have been criticized for fragmenting education by fields of study and placing on the students the responsibility to transfer and integrate knowledge between disciplines without providing them with the tools to learn to do so (Clark & Wallace, 2015; Lattuca & Stark, 1994; Le Grange, 2011). Responses to this criticism range from models that envision universities completely restructuring their curriculum and concentrating on a small number of university-wide problem-based interdisciplinary programs to minor changes to some courses. Many suggest to continue college and department discipline-based programs and shift from students to instructors the responsibility for interdisciplinary teaching and learning. Thus, they recommend that all instructors include interdisciplinary learning objectives in their curriculum and modify course structure, content, and pedagogy accordingly. The problem is that many

faculty are, or consider themselves, unprepared to do that (Bouwma-Gearhart, 2012; Justice, Rice, Roy, Hudspith, & Jenkins, 2009; Mattheis & Jensen, 2014; Stice, Felder, Woods, & Rugarcia, 2000).

Experience in the K-12 environment indicates that even in cases where teachers had positive attitudes toward integration, these attitudes did not materialize into practice (Czerniak et al., 1999). Reservations included lack of time for preparation, lack of time to devote to curriculum development, unfamiliarity with resources to support interdisciplinary teaching, and, most importantly, lack of teacher preparation: teachers do not know how to develop, implement, and evaluate interdisciplinary teaching and learning (Czerniak et al., 1999). Integrating interdisciplinary knowledge and processes into engineering courses and assessing student learning requires educators to have content knowledge in several disciplines, pedagogical knowledge, and pedagogical-content knowledge (Shulman, 1986; Tsang, 2000), all in an interdisciplinary context. In the higher education context, most STEM graduate programs lack formal pedagogical training for future faculty. In turn, many of them start their academic duties believing that their content expertise will be sufficient to ensure sound teaching, thus continuing the cycle of lecturing about content, focusing on memorization, and failing to engage students in the learning process (Bouwma-Gearhart, 2012; Mattheis & Jensen, 2014; Stice et al., 2000).

Recently, the Engineering Faculty of a US University adopted an academic plan to have adaptive curricula that provides students with a liberal education and incorporates social sciences and humanities disciplines [hereafter called humanities] throughout the engineering curriculum. The implementation of this plan required most faculty to revise their engineering courses to integrate interdisciplinary content knowledge and processes and to promote student interactions with faculty from multiple disciplines. Faculty who embarked in this endeavor faced many challenges, including questions regarding the selection of disciplines and topics that needed to be integrated into the engineering curriculum, the pedagogical models to adopt, the process to follow, and a plethora of practical questions about how to move from abstract ideas of curriculum change to the reality of design and their day-to-day teaching practice. This manuscript details the process followed to prepare a series of tools to support faculty their efforts to transform the curriculum.

Purpose and Objectives

The overall purpose of this project was to help engineering faculty overcome the challenges they face when developing interdisciplinary curricula. To accomplish this purpose, the following objectives were identified: a) develop guidelines (*Guiding Principles* and

Essential Elements) to help faculty in the design, development, implementation, and evaluation of interdisciplinary curricula in engineering education, b) develop exemplar materials (*Integrative Learning Module*) to demonstrate to faculty how the *Guiding Principles* and *Essential Elements* can be used in the development of interdisciplinary learning modules for engineering courses; c) engage faculty in a participatory evaluation to provide feedback for improvement of the *Guiding Principles*, *Essential Elements*, and *Integrative Learning Module*, and d) determine students' perceptions about the usefulness of the *Integrative Learning Module* to help them make connections between the humanities, social sciences, and engineering.

Methods

The project consisted in several objectives, each with its own methods. The lessons learned in each objective were used to improve the process and products from the other objectives. In essence, the guidelines (objective 1) helped develop the exemplar materials (objective 2), and the lessons learned while developing and using the exemplar materials helped improve the guidelines. This 'feedback' continued throughout the project. Furthermore, the data from faculty (objective 3) and student (objective 4) participation helped revise and enhance the guidelines (objective 1) and exemplar materials (objective 2). The research was approved by the researchers' University Institutional Review Board for research with human subjects.

Develop Guidelines for Interdisciplinary Curriculum Development

The researchers formed an Interdisciplinary Consultant Team of faculty in their university with expertise in community-based nutrition services, English, social work, international development, comparative literature, life sciences, health policy, art, education, and social issues in the workforce, and asked them to define the level of functional knowledge in their disciplines that engineering students needed to make connections between social sciences, the humanities, and engineering. The researchers had six 90-minute meetings with the Interdisciplinary Consultant Team over a year of collaboration. Based on the Team's discussions and recommendations, and research of the literature, the researchers developed a steering document with *Guiding Principles* to help faculty have the broad perspective needed to develop content for interdisciplinary course material (or curricula) and to help student integrate the humanities and engineering. This steering document also includes *Essential Elements* that guide students through their engagement with complex problems. The three parts of

these *Essential Elements* are 1) process (the series of operations) that guides the student though the identification of the attributes that impact how the development of a solution is actually achieved; 2) analysis that prompts the student to analyze individual components (reductionism), as well as the interactions between those components (holistic perspective); and 3) activities that create the self-learning environment that leads to identifying the need for new knowledge and to eliminating misunderstandings. Details of these Guiding Principles and Essential Elements are presented in the results section of this manuscript.

Develop Exemplar Materials for Interdisciplinary Curriculum Development

Per recommendation of the Interdisciplinary Consultant Team, the researchers developed model materials that would serve as examples of how one could apply the *Guiding Principles* and *Essential Elements* in engineering education. One of these examples was a process-oriented *Integrative* (and interdisciplinary) *Learning Module*. The *Module* was created using a factual problem concerning water conservation and gray water use in the town where the *Module* was going to be implemented. The *Module* incorporated activities for the students that accounted for all five *Guiding Principles*, and they included many of the *Essential Elements* identified by the Interdisciplinary Consultant Team. The *Module* included activities for the students during which they were to collect a wide variety of data (including qualitative data from stakeholders) research the historical context of the problem, examine the cultural and societal implications of gray water use, and investigate policy issues. Key details about the *Module* are described in the results section of the manuscript.

Engage Faculty in a Participatory Evaluation

The *Guiding Principles*, *Essential Elements*, and *Integrative Learning Module* were presented to a group of engineering faculty who teach courses in agricultural engineering, biological engineering, and environmental engineering. Through a focus group model, these faculty were asked reflect on the process, provide feedback for improvement, and address the following questions:

- Would the *Guiding Principles* and *Essential Elements* be of help to them if they had to develop interdisciplinary curricula? What would they need to be able to use them?
- Did the *Integrative Learning Module* help them understand how to integrate the *Guiding*

Principles and *Essential Elements* into their courses?

- If the researchers were to provide faculty development, what kind of professional development would engineering instructors need (materials, examples, modules, etc.)?

The main objective of the faculty participatory evaluation was to determine if the *Guiding Principles*, *Essential Elements*, and *Integrative Learning Module* would be useful for faculty in their efforts to integrate the humanities and social sciences into their courses, and to determine other key resources that faculty may need to successfully transform their courses into interdisciplinary learning experiences for their students. Three of the researchers were present during the meetings with faculty, and all participated in the analysis of the data from faculty.

Determine Students' Perceptions about the *Integrative Learning Module*

To determine students' perceptions about the usefulness of the *Integrative Learning Module* to help them make connections between the humanities and engineering, the *Module* was used as a case study in a course taken by first semester first-year students majoring in agricultural engineering (Treatment Group). This course, titled Principles of Systems Engineering, is designed to introduce the basic tools used in systems engineering analysis, project planning, and management. Twenty-two students enrolled in this course volunteered to participate in this study and agreed to participate in focus group interviews. Students were divided in two interview groups consisting of 11 participants each to limit the number of students in each of the meetings. Smaller groups allowed for better group dynamics, allowed more time for all students to respond to questions, and established a more discussion-like atmosphere. There were no significant differences between the students in the groups. Two sessions of group interviews took place, one at the middle of the semester and one at the end of the semester. The interview protocol followed a semi-structured guide that focused on questions related to the students' reaction to the use of integrative learning processes and specifically the use of the *Module*. The interviews were audio-recorded, and transcribed for analysis. To assure student confidentiality, the focus groups were facilitated by a graduate student enrolled in a Ph.D. program in the University's College of Education, and the professor teaching the class did not know which students had participated in which interviews and was not given access to the interviews' recording. In addition, the transcripts were stripped of all names and individual-specific information. The interviewer did not participate in any of the classes and never discussed student responses with the professor. The second researcher analyzing the data was not teaching either of the courses and was not in the College of Engineering.

To provide a Control Group for this study, students enrolled in another course, Engineering Graphics and Design, were asked to participate in the study using the same interview protocol. The six students who volunteered to participate were also in their first year (first semester) at the University (same age as the students in the Treatment Group), were majoring in engineering disciplines other than agricultural engineering, and were not enrolled in Principles of System Engineering (the course using the *Module*). The Engineering Graphics and Design course focused on engineering visualization using the software AUTOCAD and had weekly sessions where engineers working in private companies made a seminar-style presentation concerning their job responsibilities. It is worth noting that most participants in all groups were males due to the higher enrollment of male students in engineering courses at the University.

The results from the focus groups are reported using the codes set for the audit trail, and they can be summarized as follows: a) Treatment Group participants interviewed in mid-semester were coded with prefix PET, b) Treatment Group participants interviewed at the end of the semester were coded with prefix POT, c) Control Group participated were coded with prefix CC, d) all participants were assigned a random number within their groups, and e) a letter was assigned to help locate the quote within the transcript document.

The data from the faculty and student focus group interviews were analyzed following guidelines proposed by Lincoln and Guba (1985) for analysis of qualitatively obtained data, including unitizing, categorizing, and filling in patterns. To establish trustworthiness, the researchers engaged in different techniques, including triangulation, process member checks, peer debriefing (credibility), and an audit trail (dependability and confirmability) (Lincoln & Guba, 1985). For triangulation, three researchers participated in the focus group meetings with faculty, and all of them participated in the analysis of data. For the student data, the Ph.D. student who conducted the interviews transcribed and analyzed the data, and a second researcher (who did not teach any of the classes) analyzed separately the data and compared the results between the two researchers. Regarding the member checks, after the analysis of the faculty data, the researchers shared the report with some of the faculty participating in the meeting and asked for feedback to check whether or not the conclusions reached by the researchers captured the essence of the interviews. One of the researchers also used a peer debriefer throughout

the process (data collection, analysis, and reporting). In addition, detailed records were kept for the audit trail.

Results

Develop Guidelines for Interdisciplinary Curriculum Development

The Interdisciplinary Consultant Team was first asked to define the level of functional knowledge in their disciplines that students needed to make connections between social sciences, the humanities, and engineering. During the meetings with the Team, the following topics were discussed: a) the different perceptions of an issue; b) reflection, as a means to help students learn from experiences, success and failures, and as a basis for anticipating future occurrences; c) critical evaluation and dialogue among students in order to develop and share opposing points of view; and d) techne (Tabachnick, 2004) as related to viewing technology as an engagement, not an application, between science and domains of nature and society. These discussions led to the development of general philosophy and topic structure that the Team believed faculty should follow when integrating the humanities with engineering. This broad philosophy was then synthesized with the academic literature, particularly King and Kitchener (1994), Adams (2004), Wenk (2004) and Conlon (2008). As a result, the researchers prepared a steering document with the *Guiding Principles* for the design, development, implementation, and evaluation of interdisciplinary curricula in engineering education (Table 1) and the *Essential Elements* to ensure that engineering curricula integrate critical topics from other disciplines

(Table 2). The *Essential Elements* include three parts—process, analysis, and activities—to help guide the students through their engagement with complex problems. The materials were broad enough to apply to any engineering course and to help faculty satisfy ABET criteria in new curriculum materials.

Develop Exemplar Materials for Interdisciplinary Curriculum Development

While the *Guiding Principles* and *Essential Elements* were prepared to help faculty transform curricula, the Interdisciplinary Consultant Team and the researchers believed it was necessary to also develop materials to demonstrate to faculty how the *Guiding Principles* and *Essential Elements* could be used. The Team suggested that the researchers illustrate the process through an example, which is an important step of supporting faculty in curricular change (Zhao, Witzig, Weaver, Adams, & Schmidt, 2012). The Team also suggested that for the example the researchers use a topic of current and local relevance so that the students could better contextualize the problem and interact with members of the community, as well as learn about and practice qualitative research methods. As a result, the researchers developed the Water Module, an *Integrative Learning Module*, based on the recycling of gray water in the town where the University is located. Thus, the *Module* was not developed for other faculty to use directly, but to provide an example of how to apply the steering documents when developing interdisciplinary curricula regardless of the issues chosen, local or global. In

Table 1
Guiding Principles for the Design, Development, Implementation, and
Evaluation of Interdisciplinary Curricula in Engineering Education

Guiding Principle I.	Engineering must be viewed as a social process (Conlon, 2008) that is used to frame a problem, deals with social uncertainties and develops a range of potential solutions that could be of value to the target users
Guiding Principle II.	Engineering education should provide opportunities that transform students into professionals who can identify problems, recognize conditions and constraints and can realize the consequences of their actions.
Guiding Principle III.	Engineering education should guide students through a holistic course of inquiry; this course of inquiry should include reductionist roles of inquiry for deep understanding (Adams, 2004).
Guiding Principle IV.	Engineering education should cultivate reflection and critical thinking to individual and group environments (King & Kitchener, 1994)
Guiding Principle V.	Engineering education should view technology as an engagement, not application, between science and domains of society (Wenk, 2004).

Table 2
Essential Elements of Process, Analysis, and Activities to Ensure that Engineering
Curricula Integrate Critical Topics from Other Disciplines

Essential Elements of Process
- Determine the social dimensions of the problem(s)
    - What are the operations of the social units (origins, evolutions, & uncertainties)
    - What are the interactions between social units and the patterns of these interactions
    - What are the historical events of the social units

- Consider the multiple dimensions of the social units
    - What are the multi-dimensional historic perspectives and conditions that affect problem
    - What are the diversity in ethics among the social units/populations

- Various conditions of problems
    - What are the conditions and potential conditions that affect future behavior, characteristics, & functions of a problem solution
    - What are the cultural, geographic, economic, etc. conditions
    - What are the various points of view & value judgment

Essential Elements of Analysis
- Holism & reductionism analysis must be done together
    - Determine the needs of the system and how each of these needs interact
    - Determine the needs of each domain within the system's and how each of these needs interact
    - Determine how to integrate the knowledge from each domain of the problem
    - Determine how to transfer knowledge among different domains
    - Determine the local and global patterns of the problem and solution
    - Define the measures that determine the solution effects on the system
    - Optimize the behavior of the individual components of the system
    - Optimize the behavior of the system

- Use of opposing views in problem evaluation
- Integration of knowledge of a problem and the constraints placed on the solution in order to optimize the solution
- Technology has consequences that should be anticipated & reduced or eliminated
- Technology should be viewed as an engagement not application

---

Essential Elements of Activities
- Students should use reflection of past experiences, successes, failures in order to anticipate future events
- Students should seek opposing views in problem evaluation process in order to better understand solution impacts
- Students should engage and evaluate of other students' work
- Encourage a critical dialogue among students

---

addition, the *Module* can be used as a model to a) create complementary opportunities in disparate disciplines inspiring new practices, b) explore new directions in curricula that will broaden engineering students' career opportunities, c) promote integration of engineering/technology subjects into humanities courses, and d) create rich formal/informal learning experiences integrating a variety of disciplines. In sum, since faculty may not have the opportunity for formal training in pedagogy or interdisciplinary teaching, the materials provided guidelines and an example for faculty to use, adapt, and implement in their own curriculum development, implementation, and evaluation efforts.

While initially the *Integrative Learning Module* was intended as an example, it was important to test its impact both for its continued improvement and for broader research purposes. When we first presented our research, the external evaluators (reviewers) asked that we assess the *Module* and its impact on students in our own course. In consequence, the *Module* was piloted in a Freshmen engineering course, and this manuscript

presents both the process of developing the tools, and the evaluation of the tools by faculty and students.

The results and discussion section for objective 2 (develop exemplar materials) outlines the different components of the *Module* and explains how the five *Guiding Principles* connect to each component. The *Module* is based on state-wide and local water conservation plans (Barnes & Keyes, 2010) that were results of the "water war" between the states of Georgia, Alabama, and Florida (Hollis, 2009; Magnuson, 2009; U.S. Army Corps of Engineers, 1998) and the 2006-2009 severe drought in the southeastern USA. To implement portions of these plans, a northeastern Georgia town began to use a 4-tiered pricing system for the public, and local residents began to use gray water for landscape irrigation. If not properly treated, gray water can be detrimental to the environment and public health (Proceedings of Regional Science Workshop, 2010).

The *Module* focuses on objectives and needs associated with the problem statement, "*Design a system that allows safe gray water gardening that is acceptable for use at the typical single family residence in the University's town*." In class, the students were asked to explore the meaning of this statement as it relates to the needs of the residents of the University's town. The first set of assignments required the students to investigate the *social dimension* and the *multi-dimensional historic perspectives* of the *Module* by a) analyzing the impact past droughts had on living conditions, b) investigating how different social units consider the benefits of having a garden, c) determining if gardening is considered to be a recreational exercise or a means to supplement food sources, d) listing different cultural perspectives of the problem, and e) analyzing how these perspectives can influence future impacts of potential solutions. To do this, the students read a state-wide survey (Georgia Department of Natural Resources, 2003) and a local survey (Athens Grow Green Coalition, 2003) that were focused on the public's perspective of water resources and conservation. These students learned that Georgians are more concerned about water quality than quantity, that the majority of the local community believes the local government cannot manage water effectively, and that household conservation has a negligible impact on water resources.

The students were required to find *patterns of interactions of social units* that were affected by the problem. A sub-group of the class met with leaders of homeowners' associations who provided information concerning the local community's willingness to use gray water for outdoor irrigation and the features that they needed to encourage community participation in water conservation practices. These interviews led to students' discovery of a large and growing retirement community in the area that was willing to purchase a more expensive gray water treatment system if it meant little to no maintenance. Another student sub-group revealed a neighborhood with over 40% of the residents below the poverty level, where most of the households were not connected to a public water source. The students learned that the majority of people in this community believed that, given that they were not using the public water supply, it was unfair for them have to follow government mandates on water conservation.

Involving stakeholders early in the process, the students had to focus on *Guiding Principles* I, II and IV (Table 1) simultaneously. Comparing and contrasting the collected information helped students validate the people's concerns about unfair water conservation practices and analyze any patterns of usage (*Guiding Principle* III). Interviewing different social units required the students to participate in group environments, reflect on the opposing points of view and predict how a solution could impact future of the overall community (*Guiding Principle* IV). The assignments frequently included the reflection component of King and Kitchener's (1994) Reflective Judgment Mode, whereas when exposed to various perspectives of an environmental but social problem, reflective practice is essential throughout the entire process.

The students were required to explain the social constraints of gray water gardening particularly as it pertained to the local community. In the University's town, gardening often serves two purposes: one is focused on providing a supplemental food source, and the other is focused on emotional benefits (Armstrong, 2000; Mackay & Neill, 2010). Students had to examine both purposes and understand how these purposes related to the quality of life experienced by different social units. In addition, the students had to determine the types of plants grown by different social units, if these plants could be irrigated using gray water, and if the type of gardening used was economically feasible. These activities required students to examine the problem beyond the mere usage of gray water and to assess the impact of gardening on quality of life. Students investigated the different "beliefs" each social unit had about gardening and their different views toward water conservation (*Guiding Principle* II). Most importantly, students had to reflect on ethical issues (*Guiding Principle* IV) regarding food safety.

Students also had to consider and analyze the technical constraints of gray water systems; these constraints included the removal of large waste particles from water, the selection of filtering processes, the maintenance of these processes, and the need to incorporate natural rainfall runoff. Specific activities that the students attempted were to establish a) the best types of plants for treatment of waste water, b) water

requirements for these plants, c) the amount of usable water rainfall provides in the area, d) the rate at which water could be applied to these plants, and e) the cost of materials and installation. These tasks involved the *Guiding Principles* III and IV by asking the students to determine a) the proper equations and scientific principles needed for analysis, b) the critical interfaces between the "solution" components and how the analysis of each component affects other components, and c) the patterns which exist between each step of the analysis and the iterations of these patterns. At the end of these activities, students reviewed each other's work, particularly when alternative solutions were considered.

One of the first activities to illustrate that social constraints and technical constraints are not isolated, students read editorials about public concerns on the technical aspects of gray water recycling. They learned, to their surprise, that plumbers in the area did not understand that gray water systems could not include other waste materials. Thus, students discovered a lack of adequate knowledge among plumbers about correct gray water use. Also, the students reviewed other systems marketed in the area, thereby benchmarking the successes and failures of conservation measures imposed on individuals and the impact that past water conservation practices have had on individuals, the community, and businesses.

Comparing students' solutions to case studies was necessary because the framework of the semester did not allow the students to fully design and then implement their solutions. The instructor provided case studies of gray water recycling experiments conducted in California (City of Los Angeles, 1992) and three other communities in the same state (Whitney, Bennett, Carvajal, & Prillwitz, 1999). Lectures were dedicated to comparing the students' local observations to published cases. Both reports provided excellent background information concerning eight test sites that included the household size and dwelling, topographic conditions, type of vegetation irrigated, and the type of gray water treatment system. The City of Los Angeles report (1992) discussed issues such as the quality of maintenance by homeowners, nuisance problems from mosquitoes and other animals visiting sites where the treatment system overflowed, and health related effects, as well as economic issues. The other report (Whitney at al., 1999) discussed the effects of gray water and its management on soil properties and water quality, such as soil microbial activity and nutrient levels in water.

Requiring students to compare their conceptual solutions to these issues helped them a) predict how the gray water treatment systems were used, b) consider intended and unintended outcomes of the students' suggested designs, c) engage in critical dialogues with other students, and d) compare each other's work and propose modifications to each other's solutions to the problem. These activities focused on *Guiding Principle* IV where reflection and critical dialogue bridge the gap between content learning and contextual learning to teach students to reevaluate a decision that might fulfill a technical need but does not fit with the characteristics, needs, and constraints of a community. These activities also relate to *Guiding Principle* V by asking the students to investigate the engagement between technology and society and how this interaction may result in unintended consequences. Consequences can be anticipated; however, no one can predict all potential consequences since people's interactions with technology are complex, varied, and uncertain. Referring back to *Guiding Principle I*, students were asked to learn to cope with uncertainties, asked to work iteratively, and asked to make continuous changes to their work so that their proposed solutions adapt to new knowledge and become more appropriate to the people and the communities affected.

Engage Faculty in a Participatory Evaluation

Key recommendations from faculty who reviewed the *Guiding Principles*, *Essential Elements*, and the *Integrative Learning Module* (the Water Module) are summarized in this section, supported by key representative quotes. Faculty members (FMs) emphasized the need to integrate the materials (rather than add new materials) into engineering courses so that the time devoted to essential technical knowledge was not sacrificed.

> FM 1: *"I think in most of my teaching, these would be nice goals to do, and there are ways that you could make either make them synergize with the rest of your course because the worst thing that I could do is fail to teach the technology."*

For some of the faculty the *Integrative Learning Module* was too complex and time consuming to use as a practical example (model) to help with their own curriculum development. Many indicated that if they were provided with smaller and shorter examples and models to follow, they most likely would be willing to develop their own and integrate them into their courses.

> FM 2: *"And realistically, if we're supposed to integrate these into a course like this, we can't spend the semester doing the whole thing, so certainly to use little smaller modules that could be incorporated"*

Faculty mentioned the importance of textbooks, written modules, workshops, webinars, and learning communities. Faculty also suggested to the researchers to consider guest lecturers and field trips

to engineering workplaces in order to help students understand the connection between the humanities and engineering work. Furthermore, faculty expressed interest in professional development and teaching resources to help them integrate the *Guiding Principles* into their courses. Faculty also felt that integration was appropriate for certain courses, such as elective, gateway, design, and topics courses. These courses provide more flexibility in content covered, teaching methods, and evaluation of student learning. Faculty are more hesitant to change the curriculum (content, methods, evaluation) in upper-level, required, and "prescriptive" courses, or courses that are taught separately by several faculty (large enrollment, several sections, several instructors). Overall, they asserted that the *Module* was successful in integrating the *Guiding Principles* and *Essential Elements* into a course, and they agreed that the *Module* was comprehensive. However, they considered the *Module* too long and did not consider it feasible (time-wise and for continuity reasons) for them to use long integrative modules in their courses: they wanted a diverse set of shorter examples that were easier for them to adapt to their particular courses and engineering fields. Suggestions by faculty included that future efforts in this project should focus on creating a broader diversity of shorter examples.

Determine Students' Perceptions about the *Integrative Learning Module*

During the semi-structured interviews, students were asked their opinions about interdisciplinary courses and about the *Integrative Learning Module* (Water Module). Several students expressed an interest in taking interdisciplinary (integrated) classes. They felt that the humanities were not appropriately covered in the core curriculum, and they asserted that the humanities would be more relevant to them if they were integrated in the engineering curriculum.

> PETM5-b: *"I don't know how practical it would be, but to integrate it [social sciences and humanities] into every engineering class we take in our department would be pretty cool."*
> PETM5-c: *"[Integration] is doing exactly what we'd be doing as engineers as applying our sciences with our humanities and like if it's in the same class, you can easily see how it goes together."*

Another student acknowledged the need for "communications" courses. While the addition of courses does not necessarily imply separation, it is important to note that the student focus was on adding

speech and communications courses rather than focusing on the need to integrate communication skills in engineering courses.

> PETM1-b: *"it'd probably pay off if you **added** [emphasis added] another speech and communications type class.*

Some students explained that they wanted to keep disciplines separate because that was the way they were comfortable with the curriculum, others because of the content density of engineering courses. Also, some students felt that learning the engineering content alone was already too challenging; thus, they preferred to learn different disciplines separately.

Students asserted that the *Integrative Learning Module* was a good example, was successful in connecting the humanities to engineering work, and helped them understand how engineering work is comprised of various social aspects in conjunction with mathematical and scientific principles (interdisciplinary). Students also realized that social aspects and customers' needs and concerns must be included in the engineering design process.

> PETM2-e: *"Our time is used really efficiently. We have not wasted a minute to the minute we get there to the minute we go. I mean, he's always teaching us, showing the way, and giving us examples from the past and incorporating them into the course, so it's not just dry facts."*
> POTM13-a: *". . . as far as connecting to the humanities and seeing the bigger picture and the social side of things…this one [the course with the Integrative Module] has done the best job."*

Many students, however, were overwhelmed, if not lost. They would have preferred more step-by-step instructions and a smaller project that they could have tackled from beginning to end. These students, however, acknowledged that they had limited experience with taking courses, this was the first exposure they had about integration of the humanities and engineering, and they felt the knowledge gained from the course would serve as a foundation for future engineering courses.

> PETM3-h: *"It's really abstract like nothing to hold onto to and say oh that's how it applies or that makes sense to that, so."*
> POTM13-b: *"I think it needs to be something a lot smaller and that you can actually see the results of at the end of the semester."*

The focus group questions and dynamics in the focus group with the Control Group were somewhat

different. These students were enrolled in the Engineering Graphics and Design course and were not exposed to the *Integrative Learning Module* (Treatment). While the focus group facilitator was able to ask students about interdisciplinarity and the integration of the humanities in engineering, there was not an opportunity to discuss the lessons learned from the *Module*. Control Group students acknowledged that the guest speakers to their course helped them understand that engineering skills extend beyond mathematical and scientific knowledge. Communication, however, was the only non-technical issue addressed by most of the guest speakers. While students in the Treatment group viewed interdisciplinarity very broadly and could provide many examples and justifications, the students in the control group had only one "interdisciplinary" perspective and could only mention that integration was important because communication was important. When asked specifically about the social aspects of engineering work, their responses were much more limited than the response with the Treatment Group.

> CCM34-a: *"I think a lot of times there's a misconception that you don't need to be able to communicate with people. . . . I think that's before someone decides to be an engineer, that needs to be oh, by the way, you can't not be able to talk"*
> CCM36-a: *"A lot of times when you're working on an engineering project, you may not be working on the entire project itself, you may be working on a small part. If you can't communicate that to your teammates, that part won't be done, and if that part isn't done, the whole project falls apart, and so, communication keeps it all together."*

Limitations of the Study

This study had several limitations. Foremost, our study is limited to our context and university, and there was a small number of students and faculty that were exposed to the *Integrative Learning Module* and who gave feedback about the *Guiding Principles*, *Essential Elements*, and the *Module*. Also, the student Control (not exposed to the *Module*) and Treatment Groups (exposed to the *Module*) were non-equivalent groups (students were not randomly assigned to groups). Demographically, all the students were similar (first year, first semester students), though Treatment Group students were in agricultural engineering while Control Group students were in other engineering majors. Further, the number of Control Group students interviewed was much smaller than the number of Treatment Group students. However, this study aims to provide an assessment of the potential usefulness of the

tools presented in the manuscript (*Guiding Principles*, *Essential Elements*, and *Integrative Learning Module*) in our context, not a generalized statement of the impact of these tools. As more tools are developed (more examples), and more faculty use the guidelines and develop their own curriculum, we will be able to conduct additional studies and assess the impact on student learning and student ability to integrate engineering and other disciplines. While these limitations caution us from suggesting that the *Guiding Principles*, *Essential Elements*, and *Integrative Learning Module* should be used at a large scale, by no means do they invalidate the study.

Discussion and Conclusions

The need for curricular transformation and the value of interdisciplinary curricula in engineering education has been discussed by many scholars (Arms, 1994; Blewett, 1993; Boix Mansilla & Duraising, 2007; Klein, 2005; Lattuca et al., 2004; Nikitina, 2006). Even in cases where educators have positive attitudes toward integration, these attitudes do not materialize into practice mostly because of lack of teacher preparedness (Czerniak et al., 1999), and lack of materials available for educators to use as guidelines and practical models (Zhao et al., 2012). The overall purpose of this project was to help engineering faculty overcome the challenges they face when developing interdisciplinary curricula. The researchers developed *Guiding Principles* (Table 1) and *Essential Elements* (Table 2) to help faculty in the design, development, implementation, and evaluation of interdisciplinary curricula in engineering. Key ideas from the *Guiding Principles* include the following: a) engineering must be viewed as a social process (Conlon, 2008); b) engineering students should be able to identify problems, recognize condition and constraints, and realize the consequences of their actions; c) engineering education should cultivate a holistic course of inquiry, reflection, and critical thinking (Adams, 2004; King & Kitchener, 1994): and d) engineering education should view technology as an engagement, not application, between sciences and domains of society (Wenk, 2004). The *Essential Elements* included *Essential Elements* of process, analysis, and activities to ensure that engineering curricula integrate critical topics from other disciplines. Thus, this project provides faculty with tools to engage in interdisciplinary instruction without the need to undergo extensive formal training.

The researchers also developed exemplar materials to demonstrate to faculty how these *Guiding Principles* and *Essential Elements* could be used in the development of interdisciplinary learning modules for engineering courses. Faculty and student feedback was used to improve the *Guiding Principles*, *Essential Elements*, and

exemplar materials. Integrative learning modules similar to the one initially proposed proved to be too thorough (long) for many of the engineering faculty consulted at the researcher's University. Smaller modules may be easier to integrate into existing courses. Nonetheless, the *Module* can be used as a guide in faculty development workshops where participants could create their own smaller modules while adhering to the philosophy of curriculum integration.

Students expressed differences of opinion regarding integration but overall were satisfied with the use of the *Integrative Learning Module*. Some students preferred separate courses in engineering and the humanities and social sciences while others wanted courses that integrate disciplines. Students all seemed to agree that they want more interactive, real-world applications of engineering concepts. Because these students were first year students, they were experiencing an integrative course during their first semester and had no prior experience with traditional methodologies for comparison.

Some students indicated that the *Integrative Learning Module* was a real-world example that helped them apply the knowledge they learned in other courses. Students were able to provide specific examples about this connection and were able to use the *Integrative Learning Module* as the prime example of this connection, denoting effectiveness of the *Module.* These students were also able to explain the importance of knowledge of the humanities and social sciences as they relate to engineering practice. The students understood that engineering was process-oriented and that properly defining the problem is essential to engineering work.

Integrative modules may also enhance student understanding of interdisciplinary processes in other disciplines where science-based and humanities-based knowledge is essential, such as health, medicine, business, and technology. For example, human behavior and cultural beliefs impact medical treatment decisions that determine the success of a medical advancement within a population. Merely formulating an effective medical treatment is insufficient in improving population health outcomes; therefore, student learning about broader, interdisciplinary research methods that examine problems holistically are imperative. The *Integrative Learning Module* presented in this manuscript was prepared for engineering faculty. While the *Module* or broader interdisciplinary modules may be appropriate across multiple disciplines, it may be easier for faculty to work with examples from their own disciplines: adoption of innovations and transfer of knowledge is easier if the examples are compatible and close to learner's past experiences and prior knowledge (Rogers, 2003). Thus, we believe that while the *Guiding Principles* and *Essential Elements* are applicable to other disciplines, the examples – designed to facilitate faculty's job – are best if the key problem is familiar to the end user.

The next step of this project is to enhance and continue implementing the *Module* as we teach again the course that served as the "Treatment Course," develop more diverse and smaller examples for faculty to use as guides for the development of their own integrative learning modules, work with faculty as they implement their new curriculum, and continue assessing student learning and student ability to integrate engineering and other disciplines. At the time this manuscript is submitted, the researchers have implemented variations of the *Integrative Learning Module* in a freshman engineering course and a sophomore/junior engineering course, and they are in the process of analyzing quantitative data measuring student learning and interdisciplinary analysis and evaluation. The results of these additional implementations will be reported in new manuscript submissions. Differences in learning outcomes and sustained learning may be more apparent as students develop their own projects in their junior and senior years. We will continue to check the transferability and impact of these examples as faculty revise and adapt them or develop their own. Therefore, more long-term outcomes analysis is needed to determine if the *Guiding Principles*, *Essential Elements*, and integrative learning modules and examples are successful in supporting faculty in their curriculum development efforts, and in promoting student interdisciplinary learning; likewise, we will need to compare our outcomes to those programs not using integrative learning modules to make interdisciplinary connections. To date, the objectives of the project have been realized: we have guidelines and an example to help faculty in the design, development, implementation, and evaluation of interdisciplinary curricula in engineering education. These tools have been we have tested in a course with positive reception by the students who also provided valuable information to continue improving our materials, and we have a group of faculty interested in using the tools we are providing to support their curriculum development efforts.

References

Accreditation Board for Engineering and Technology [ABET]. (2012). *Criteria for accrediting engineering programs*. Baltimore, MD: ABET.

Adams, C. C. (2004). The role of the humanities in distinguishing science from engineering design in the minds of engineering students. In D. F. Ollis, K. A. Neeley, & H. C. Luegenbiehl (Eds.), *Liberal education in twenty-first century engineering:*

Responses to ABET/EC 2000 criteria (pp. 91-112). New York, NY: Peter Lang Publishing.

Arms, V. M. (1994). Personal and professional enrichment: Humanities in the engineering curriculum. *Journal of Engineering Education*, *83*(2), 141-146. doi: 10.1002/j.2168-9830.1994.tb01093.x

Armstrong, D. (2000). A survey of community gardens in upstate New York: Implications for health promotion and community development. *Health and Place, 6*(4), 319-327

Athens Grow Green Coalition. (2003*). Environmental summit report: Growing sustainably in Athens-Clarke County: Recommendations from local environmentally concerned citizens' organizations*. Retrieved from http://www.athensgreen.com

Barnes, F. A., & Keyes, A. M. (2010). *Georgia's water conservation implementation plan*. Retrieved from http://www.conservewatergeorgia.net/resources/WCIPMarch2010FINAL.pdf

Blewett, P. (1993). Introducing breadth and depth in the humanities and social sciences into an engineering student's general education curriculum. *Journal of Engineering Education*, *82*(3), 175-180. doi: 10.1002/j.2168-9830.1993.tb00098.x

Boix Mansilla, V., & Duraising, E. D. (2007). Targeted assessment of students' interdisciplinary work: An empirically grounded framework proposed. *The Journal of Higher Education*, *78*(2), 215-237.

Bouwma-Gearhart, J. (2012). Research university STEM faculty members' motivation to engage in teaching professional development: Building the choir through an appeal to extrinsic motivation and ego. *Journal of Science Education and Technology, 21*(5), 558-570. doi:10.1007/s10956-011-9346-8

City of Los Angeles, Office of Water Reclamation. (1992). *Gray water pilot project final project report*. Retrieved from http://aginnovations.org/agwaterstewards.org/uploads/docs/LA%20Graywater%20Pilot%20Project.pdf

Clark, S. G., & Wallace, R. L. (2015). Integration and interdisciplinarity: Concepts, frameworks, and education. *Policy Sciences*, *48*(2), 233-255. doi: 10.1007/s11077-015-9210-4

Conlon, E. (2008). Integrating engineering ethics and research skills in a first year programme. *Proceeding of the International Symposium for Engineering Education (ISEE), Vol 8*, Dublin, IE.

Czerniak, C. M., Weber, W. B., Sandmann, A., & Ahern, J. (1999). A literature review of science and mathematics integration. *School Science and Mathematics*, *99*(8), 421-30. doi: 10.1111/j.1949-8594.1999.tb17504.x

Georgia Department of Natural Resources, Pollution Prevention Assistance Division. (2003). *Understanding the Georgia public's perception of water issues and the motivational messages to which they will respond*. Retrieved from http://cfpub.epa.gov/npstbx/files/Georgia1.pdf

Hollis, P. (2009, June 4). Southeast tri-state 'water war' continues. *Southeast Farm Press*. Retrieved from http://southeastfarmpress.com

Justice, C., Rice, J., Roy, D., Hudspith, B., & Jenkins, H. (2009). Inquiry-based learning in higher education: Administrators' perspectives on integrating inquiry pedagogy into the curriculum. *Higher Education, 58*(6), 841-855. doi:10.1007/s10734-009-9228-7

King, P. M. & Kitchener, K. S. (1994). *Developing reflective judgment: Understanding and promoting intellectual and critical thinking in adolescents and adults*. San Francisco, CA: Jossey Bass.

King, P. M., & Kitchener, K. S. (2004). Reflective judgment: Theory and research on the development of epistemic assumptions through adulthood. *Educational Psychologist*, *39*(1), 5-18.

Klein, J. T. (2005). Integrative learning and interdisciplinary studies. *Peer Review*, *7*(4), 8-10.

Lattuca, L. R., & Stark, J. S. (1994). Will disciplinary perspectives impede curricular reform? *Journal of Higher Education, 65*(4), 401-26.

Lattuca, L. R., Voigt, L. J., & Fath, K. Q. (2004). Does interdisciplinarity promote learning? Theoretical support and researchable questions. *Review of Higher Education*, *28*(1), 23-48. doi: 10.1353/rhe.2004.0028

Le Grange, L. L. (2011). Sustainability and Higher Education: From arborescent to rhizomatic thinking. *Educational Philosophy & Theory, 43*(7), 742-754. doi:10.1111/j.1469-5812.2008.00503.x

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: SAGE Publications.

Mackay, G. J., & Neill, J. T. (2010). The effect of "green exercise" on state anxiety and the role of exercise duration, intensity, and greenness: A quasi-experimental study. *Psychology of Sport and Exercise, 11*(3), 238-245. doi:10.1016/j.psychsport.2010.01.002

Magnuson, P. (2009). *United State district court-middle district of Florida. In re tri-state water litigation, Case number 3:07-md-01*. Retrieved from http://blog.al.com/spotnews/2009/07/water%20war.pdf

Mattheis, A., & Jensen, M. (2014). Fostering improved anatomy and physiology instructor pedagogy. *Advances in Physiology Education, 38*(4), 321-329. doi: 10.1152/advan.00061.2014

Navarro, M. (2004). *Analysis of factors affecting participation of faculty and choice of strategies for the internationalization of the undergraduate agricultural curriculum: The case in two land grant universities* (Unpublished doctoral dissertation). Texas A&M University, College Station, TX.

Nikitina, S. (2006). Three strategies for interdisciplinary teaching: Contextualizing, conceptualizing, and problem-centering. *Journal of Curriculum Studies*, *38*(3), 251-271. doi: 10.1080/00220270500422632

Orillion, M. F. (2009). Interdisciplinary curriculum and student outcomes: The case of a general education course at a research university. *Journal of General Education*, *58*(1), 1-18.

Proceedings of Regional Science Workshop: Using Treated Graywater as an Environmental Solution. May 18-20, 2010. Atlanta, Georgia. Retrieved from: http://blog.al.com/spotnews/2009/07/water%20war.pdf

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press

Ruiz, E. C., Thornton, J. S., & Cuero, K. K. (2010). Integrating literature in mathematics: A teaching technique for mathematics teachers. *School Science and Mathematics, 110*(5), 235-237.

Stice, J. E., Felder, R. M., Woods, D. R., & Rugarcia, A. (2000). The future of engineering education IV. Learning how to teach. *Chemical Engineering Education, 34*(2), 118 – 127.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4–14.

Spelt, E. H., Biemans, H. A., Tobi, H., Luning, P. A., & Mulder, M. (2009). Teaching and learning in interdisciplinary Higher Education: A systematic review. *Educational Psychology Review, 21*(4), 365-378. doi:10.1007/s10648-009-9113-z

Tabachnick, D. E. (2004). Techne, technology and tragedy. *Techné: Research in Philosophy and Technology, 7*(3), 90-111. doi: 10.5840/techne20047321

Tsang, E. (2000). *Projects that matter: Concepts and models for service-learning in engineering. AAHE's series on service-learning in the discipline*. Washington, D.C.: American Association for Higher Education.

U.S. Army Corps of Engineers. (1998). *Water allocation for the Apalachicola Chattahoochee-Flint (ACF) River Basin – Main Report*.

Wenk, E., Jr. (2004). Teaching engineering as a social science. In D. F. Ollis, K. A. Neeley, & H. C. Luegenbiehl (Eds.), *Liberal education in twenty-first century engineering: responses to ABET/EC 2000 Criteria*, (pp. 158-164). New York, NY: Peter Lang.

Whitney, A., Bennett, R., Carvajal, C. A., & Prillwitz, M. (1999). *Monitoring graywater use: Three case studies in California*. Retrieved from http://www.water.ca.gov/wateruseefficiency/docs/monitoringGW_Use.pdf

Wolff, K., & Luckett, K. (2013). Integrating multidisciplinary engineering knowledge. *Teaching in Higher Education*, *18*(1), 78-92. doi: 10.1080/13562517.2012.694105

Zhao, N., Witzig, S. B., Weaver, J. C., Adams, J. E., & Schmidt, F. (2012). Transformative professional development: Inquiry-based college science teaching institutes. *Journal of College Science Teaching, 41*(3), 18-25.

_____

MARIA NAVARRO's main research focus is the enhancement of the Higher Education curriculum to achieve a more global, integrated, and socially conscious curriculum, with particular interest on STEM disciplines. From an outreach perspective, Dr. Navarro has extensive experience as a researcher, instructor, and facilitator of professional development programs for university teaching faculty (STEM disciplines), and has worked in the US, Latin America, Africa, the Middle East, and Western Asia. Her background in both agricultural engineering (B.S.) and education (Ph.D.), positions her well to address professional development of engineering faculty.

TIMOTHY FOUTZ has taught engineering design courses since 1990 and has received federal funding to integrate humanities and social science topics into his course materials. Some of Dr. Foutz's projects include work with faculty from the UGA School of Music and faculty from the UGA School of Art to teach design courses where engineering students had to infuse techniques from music and/or art into their technical solutions.

KERRI PATRICK SINGER is a liberal arts educator with over seven years of teaching experience in the United States and abroad. Dr. Patrick Singer is currently an Instructor at Aaniiih Nakoda College in Harlem, Montana, and her research interests include examining obesity's impact on education, culturally responsive teaching, and the phenomenological method.

SIDNEY THOMPSON is a Professor in the Department of Biological and Agricultural Engineering and was for many years the Coordinator of Undergraduate Engineering Programs at The University of Georgia. Dr. Thompson received a Ph.D. in 1981 from the University of Kentucky in Agricultural Engineering. Dr. Thompson teaches undergraduate courses in engineering mechanics, engineering design and structural design. His research focuses on structural design, granular mechanics and also engineering education.

Effects of Web-Based Feedback on Students' Learning

Simone van Koll and Christian Rietz
University of Cologne

Feedback plays an important role in supporting students' learning process. Nonetheless, providing feedback is still rather unusual in higher education. Moreover, research on the design of ideal feedback as well as its effects is rare. In order to contribute to the development of this field, a web-based feedback system was implemented in a lecture at the University of Cologne. The effects of this feedback on the students' learning process are presented in this article. Differences in the students' learning success and motivation, as well as their assessment of competencies, are analyzed within an experimental setting. Students who received individual feedback through this system achieved higher grades and showed increased levels of motivation. Moreover, they felt more competent with regard to solving tasks related to the learning material.

In recent years, there has been increased awareness of the importance of feedback for student learning in higher education (Hernández, 2012; Weurlander, Söderberg, Scheja, Hult, & Wernerson, 2012; Yorke, 2003). In Europe, developments in the context of the Bologna Process have underlined the relevance of feedback for students (Hochschulrektorenkonferenz, 2008; Wissenschaftsrat, 2008). However, research on the construction, let alone the effect, of feedback in higher education is rare (Narciss, 2004; Yorke, 2003). This deficit is even more surprising considering the crucial role that feedback plays in self-regulated learning:

> Intelligent self-regulation requires that the student has in mind some goals to beachieved against which performance can be compared and assessed. [. . .] Feedbackis information about how the student's present state (of learning and performance)relates to these goals and standards (Nicol & Macfarlane-Dick, 2007, p. 200).

With regard to learning objectives, students need to know when they should be at a certain point in their learning process in relation to where they actually are. This information enables them to figure out and—depending on the feedback—reduce possible learning deficits (Narciss, 2004). In addition, providing feedback helps teachers obtain an overview of their students' progress. If they see that most of the students are not reaching the predefined learning goals, they can try different ways of explaining the material or use other teaching approaches. In summary, providing feedback might be beneficial for students and teachers in many respects.

Nonetheless, feedback is still not an integral part of higher education teaching (Bargel, Müßig-Trapp & Willige, 2008; Müller, 2007). This is especially the case with regard to formative feedback throughout the semester, even though this is when it would support students' learning process the most (e.g., Clark, 2012; Han & Finkelstein, 2013; Wilson & Scalise, 2006).

Usually, students receive summative feedback, e.g., a grade on their final exam without further comments from the teacher (Yorke, 2003). This lack of (elaborated) feedback is partly a result of the general trend, such as increasing student numbers and the developments in education policy in Europe in the last few years. In Germany, there has been a 30% increase in student numbers in the last ten years (winter semester 2002/2003 to winter semester 2012/2013) (Statistisches Bundesamt, 2013), and they will continue to rise in the years to come (Kultusministerkonferenz, 2012). This tendency can also be observed for Europe as a whole, with an overall increase in student numbers of 19% from 2003 to 2012 (Eurostat, 2015). At the same time, universities are suffering from underfunding and thus increasingly limited resources in terms of time and personnel (Berthold, Gabriel & Ziegele, 2007; Dohmen & Krempkow, 2014; Hölscher & Kreckel, 2006). As a consequence of these developments, the number of students per course is increasing even more (Metz, Rothe & Pitack, 2006) and resulting in unfavorable staff-student ratios (Heinbach & Kühnle, 2012; Hölscher & Kreckel, 2006; Irons, 2008; Rust, 2002). Therefore, the call for a shift to learner-centered higher education as stated in the Bologna reform is difficult to implement in practice (Nickel, 2011). As a consequence, providing individual, regular feedback seems to be impossible in classes with a high number of participants.

The aim of this study was to find a way of providing students with feedback throughout the semester, even in classes with a high number of participants. This included finding a way to assess a student's individual performance. In this context, electronic voting systems (EVSs) (also known as audience response systems), were considered to be a practicable solution for assessment and maybe even for sustainable feedback in higher education. This article analyzes the effects of the web-based system Votepoint+ on the students' learning.

Electronic Voting Systems and Their Effects

The basic principle of EVSs is that the teacher asks a (multiple choice) question, which the students answer by using a transmission device (E-Teaching, 2014). Usually, the results and answers to the questions are shown in a digital presentation. Therefore, transmission and receiver devices, as well as software to present the results, are needed in order to implement EVSs. Unfortunately, a system that allows bidirectional communication and feedback between teachers and students has not existed up to now.

Today the two main kinds of transmission devices that are used are clickers or mobile devices (e.g., smartphones). Clicker devices have to be purchased (e.g., by the university) and are usually handed out before the class and collected afterwards. The substantial time and financial expenditure that this entails can be reduced by using a "bring your own device" (BYOD) system. Students use their own mobile devices (e.g., smartphones, tablets or laptops) to transmit the answer to the questions asked by the teacher. For most BYOD systems, students need to install an app prior to use.

The implementation of EVSs has been shown to have positive effects on students' learning success, which is measured by the grade received on a final exam (Majerich, Stull, Varnum, & Ducette, 2011). This finding might have several reasons. Kay and LeSage (2009) found out that attention in class is higher when EVSs are used. Furthermore, several studies have shown that students who use EVSs are more confident about and satisfied with their learning progress (Kundisch et al., 2012; Stuart, Brown, & Draper, 2004). Moreover, their understanding of concepts and motivation to actively participate has been shown to increase (Schmidt, 2011). This aspect is supported by the finding that EVSs might lead to a higher degree of involvement (Stuart et al., 2009), as well as increased interaction between teachers and students in class (Kay & LeSage, 2009).

The state of research presented shows that EVSs have an influence (in one way or another) on students' learning. Nevertheless, systematic research on the construction and effects of feedback, as well as a definition of the determinants of success, are still lacking. However, there seems to be general agreement that it is appropriate to use EVS for assessing student performance. The studies presented here have one thing in common: None of the interventions used EVSs to provide individual feedback from the teachers to students. The EVSs that have been developed so far do not contain this component. Therefore, developers at the University of Cologne created a new web-based EVS called *Votepoint+,* which is described in the following paragraph.

Votepoint+

Votepoint+ is a web-based feedback system that was originally designed for implementation in classes with a high number of students. The main requirement for using the system is a web-enabled device (e.g., laptop, smartphone, tablet), which most of the students have access to (Rietz, Franke & van Koll, 2013). Votepoint+ can be easily used by accessing a webpage (http://vote.uni-koeln.de); no app needs to be installed, and students do not have to register to use it. The only action required prior to implementation is setting up a teacher account, which is used to create a library of questions (single or multiple choice) with answer categories and feedback comments.

A Votepoint+ session is started when the teacher logs into his/her account. A "vote-ID" is shown, which the students need to enter on the webpage in order to be assigned to the session. Alternatively, the students can enter a short name if they wish. If not, their answers remain absolutely anonymous. Once the teacher activates the question, the answer categories are presented on the students' mobile devices. They can then decide which one(s) is (are) correct and submit their final choice. After the participants have voted, the teacher is able to see the results immediately and respond accordingly. If most of the students did not answer the question in the correct way, the teacher can explain certain aspects again or use a different approach.

After one session of questions, the students can request individual feedback. During the voting session, a PDF document is created which contains the questions, answer categories and correct answers with respect to their responses. The students can then have this feedback document sent to them immediately by providing their email address.

Votepoint+ and Feedback

Which and how much information the feedback document contains is a decision made by the teacher. While there is a great deal of research available within the context of schools (e.g., Hattie & Timperley, 2014), there is a huge research deficit and only few empirical studies with regard to designing feedback for students (Narciss, 2006). At least there is agreement that feedback should be fully oriented towards learning goals (Rust, 2002; Sippel, 2009). Furthermore, it should be provided promptly (Rust, 2002) and contain a few constructive comments instead of overly detailed information (Sippel, 2009).

Narciss (2006) introduced the concept of informative tutorial feedback. Within this framework, the role of feedback is to support the students' process of self-regulation. In order to stimulate the active construction of knowledge, this

process needs to contain elaborate elements rather than just providing the correct answers (Narciss, 2006). Students need information that helps them to find the correct solution to a problem on their own, although the amount of information provided depends on the individual's abilities (Narciss, 2006; Huth 2004; Moreno, 2004; Mory, 2004). Moreover, Vollmeyer and Rheinberg (2005) found out that sometimes simply providing feedback helps: the "[…] expectation of feedback simply leads to a higher commitment to do the task, because the learners themselves […] can find out how well they performed" (p. 600).

Although there is no agreement on how an ideal feedback system should be designed, it is clear that feedback is important in supporting students' learning process. Due to the fact that time and personnel resources are often limited, providing feedback is almost impossible for teachers in higher education. Votepoint+ could offer a possible solution for generating individual feedback with relatively low effort for students and teachers.

Hypotheses

Due to the lack of systematic research on feedback and its effects, there are only two main assumptions that can be made: Feedback seems to be important for students' learning processes, and EVS seem to have an effect in this area. Narciss (2006) classified cognitive, meta-cognitive and motivational indicators for the effects of feedback. Some of these indicators can be observed while others need to be reported by the students. In this article, the number of questions answered correctly and the grade received on the final exam are used as an observable indicator of the effects of feedback (cognitive/meta-cognitive) on learning success (Narciss, 2006). Accordingly, the learning success of students who receive feedback is supposed to be higher, which leads to one of the two main hypotheses:

> H_A: Students who receive feedback via Votepoint+ show higher learning success than those who do not.

Moreover, Narciss (2006) states that feedback is supposed to have an effect on motivational aspects. Some of the indicators for the effects of feedback are that students rate tasks as more interesting, are more satisfied with their performance on tasks, and report a strong willingness to work on similar tasks in the future. This results in the second hypothesis:

> H_B: Students who receive feedback via Votepoint+ show higher motivation levels and rate their competencies higher than those who do not.

Method

Design and Procedure

The main study of the effects of feedback on students' learning was conducted during the summer semester of 2014 within the scope of three lectures entitled, "Introduction to Research Methods" at the University of Cologne. These compulsory lectures were identical with regard to the learning material discussed. The students were randomly assigned to one of the three lectures. Predefined review questions were given after each chapter of learning material for discussion purposes. In one of the three lectures, these questions were asked via Votepoint+ and included individual feedback for the students (experimental group "Introduction to Research Methods A"). The other two lectures defined the control group. In the second lecture, the same predefined questions were presented; however, the discussion did not include individual feedback via Votepoint+ ("Introduction to Research Methods B"). In the third one, no predefined questions were used. Instead, students asked questions that came up during the lecture ("Introduction to Research Methods C"). This design (see Figure 1) was chosen to find out whether working with review questions had an effect regardless of whether Votepoint+ was used or not. In order to analyze the possible effect that individual feedback via Votepoint+ had on motivation and self-assessment of competencies, pre- and posttests were conducted. In addition, the students were asked to fill out an online survey. The pretests took place within the first two weeks of the semester before the first questions were discussed (April 2014), and the posttests were conducted during the last weeks of the semester (June 2014).

The exam results were used for analyzing the effect on general learning success. The final exam took place during the last week of the summer semester (July 2014).

Participants

All three lectures were included in the analysis in order to study the learning success of the participants. A total of 342 students in the special needs education study program took the final exam. Of those, 169 belonged to the experimental group, i.e., "Introduction to Research Methods A" (49%). In the "Introduction to Research Methods B" (control group) lecture, 133 students (39%) took the final exam. The smallest group (12%) was the "Introduction to Research Methods C" (control group, n=40). In total, 84 (25%) of the 342 students who took the exam did not pass.

With regard to a possible change in motivation and abilities, only those students that took part in the online survey at the beginning and end of the semester (pre- and posttest) could be analyzed. Since participation in

Figure 1
Research Design for Testing the Effects of Votepoint+
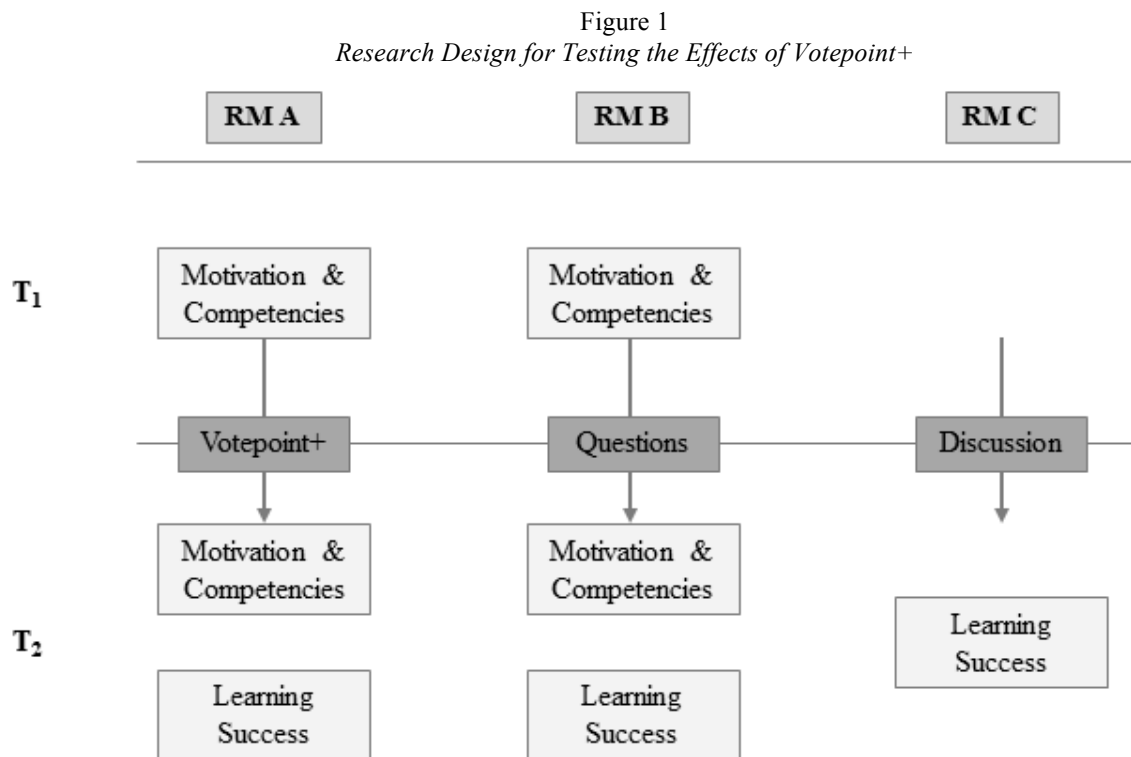
Figure 1. RM A (1) = Introduction to Research Methods A; RM B (2) = Introduction to Research Methods B;
RM C = Introduction to Research Methods C.

the survey was voluntary, the response rate was not equal to the number of students who took the final exam. Moreover, the students in the "Introduction to Research Methods C" lecture were not surveyed because they did not use the predefined questions. The response rate for the pre- and posttest in the other two lectures was characteristic for a student survey (e.g., Schmidt, 2015): A total of 52 students answered the questionnaire at the beginning and end of the semester. Of these, 31 (60%) were enrolled in "Introduction to Research Methods A" and 21 students (40%) in "Introduction to Research Methods B." Even though the students were reminded of the survey several times via email as well as during the lectures, it did not have much effect on the response rate.

Measures

The students' learning success was measured by the number of correctly answered questions on the final exam. The exam consisted of 100 multiple choice questions with three answer categories, of which at least one was correct. However, it was also possible for two or even all three of them to be correct. An answer was counted as correct if the student chose exactly those categories that were true. If, e.g., only one of the

two correct answer categories was selected, it did not count. The exam questions were not identical with the review questions that were asked throughout the semester. Since there was no obligation to attend the lectures, an additional question was included on the exam: the students were supposed to specify how often they had been present when the review questions were discussed. This allowed the effects of individual feedback on learning success via Votepoint+ to be controlled for frequency of attendance. The review questions and answers were available online for the students in the "Introduction to Research Methods A" and "Introduction to Research Methods B" lectures. Feedback was only provided within the lecture since this could only be done on an individual basis.

A questionnaire by Narciss (2006) was used to measure the students' motivation and self-assessment of competencies. This questionnaire included a measurement of the preactional self-assessment of competencies (three items) as well as of intrinsic (two items) and performance-related motivation (four items). One statement for measuring the preactional self-assessment of competencies was, "Solving these types of tasks is usually very easy/very hard for me," while an indicator for intrinsic motivation was the statement, "I usually do/do not find these types of

Figure 2
Feedback Document Votepoint+ (Example)
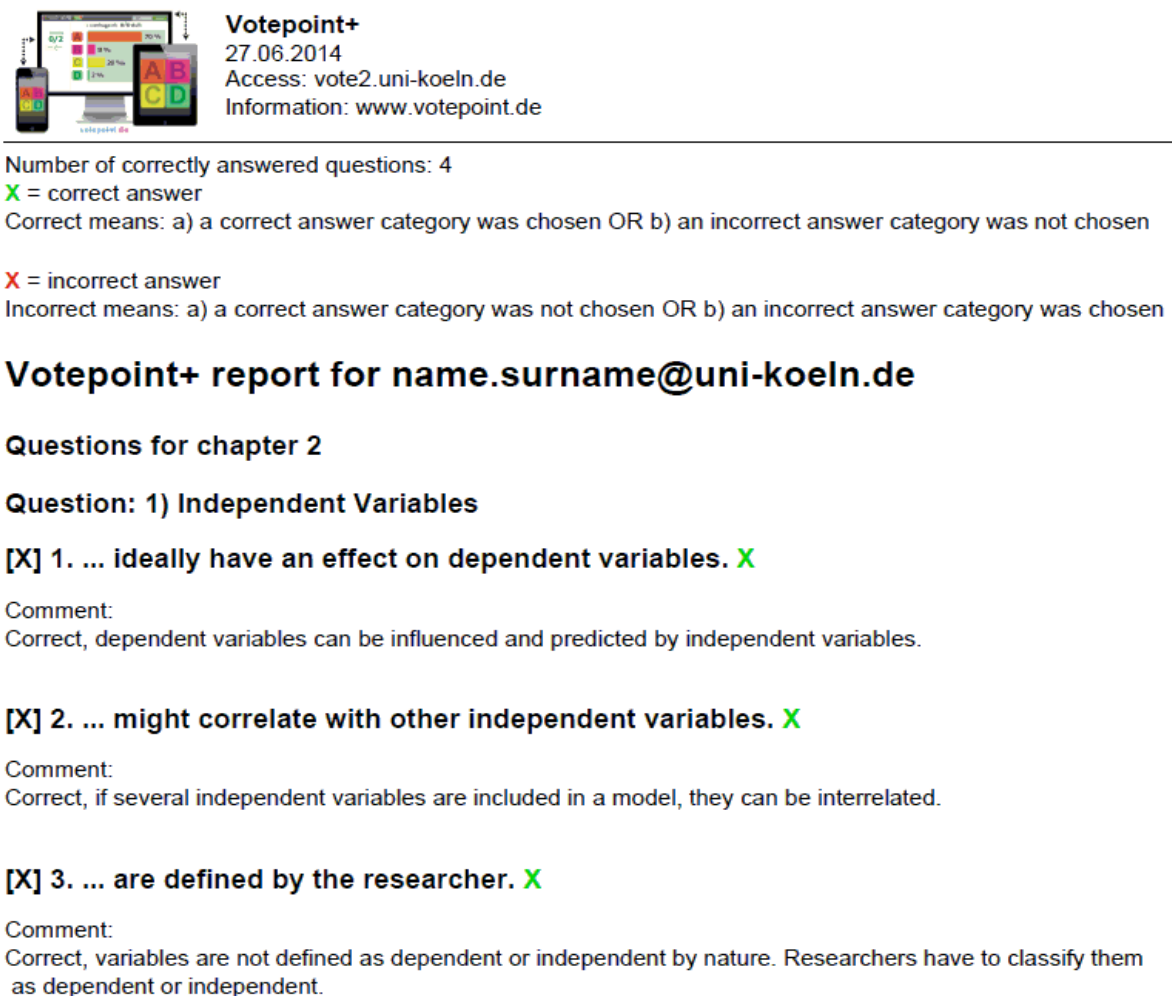
tasks very interesting/interesting at all." In addition, during the second measurement, eight items for the postactional self-assessment of competencies were included. For example, one statement within this construct was, "I am very satisfied with my performance with regard to the tasks in today's class." The statements presented here were translated by the author for the purposes of this article; however, the original statements in German were used for the study. All of the statements were answered according to a rating scale of one to six, where one represented a high level of competence and motivation and six a low level of competence and motivation.

On the one hand, the feedback implemented in "Introduction to Research Methods A" via Votepoint+ was designed based on qualitative interviews with students. On the other hand, it could be kept rather simple and without too many elaborate components because factual knowledge was taught in the lectures (Narciss, 2006). In summary, it included the question, answer categories, and information on the answer category(ies) chosen (see Figure 2). Furthermore, the feedback contained information on why certain answer categories were correct and others were not, as well as recommendations for further reading.

Data Analysis

All the analyses were conducted using SPSS. A single factor analysis of variance was carried out for studying the effect on learning success. A repeated measures multivariate analysis of variance (MANOVA) was conducted for studying the effect of Votepoint+ on motivation and self-assessment of competencies. A

one-way MANOVA was calculated for analyzing the postactional items.

Results

Learning success

In looking at the descriptive statistics for learning success (Table 1), the first thing that stands out is that the number of students who failed the final exam was highest in the "Introduction to Research Methods C" lecture, which is the one that did not include review questions for discussion. In contrast, the percentage of participants who failed in each of the other two lectures was around half of that of "Introduction to Research Methods C." Moreover, the descriptive statistics for "Introduction to Research Methods C" show the lowest average number of questions answered correctly, as well as the lowest average grade in comparison to the other two lectures. The average number of correctly answered questions and the average grade was highest in "Introduction to Research Methods A," the lecture in which Votepoint+ and feedback were used.

The tendency for learning success to be influenced by a discussion of predefined questions could be confirmed in an ANOVA with the number of correctly answered questions as a dependent variable. The results indicate significant differences between the means of the "Introduction to Research Methods A" and "Introduction to Research Methods B" lectures on the one hand and "Introduction to Research Methods C" on the other ($F(2, 339) = 6.1$, $p = 0.002$). When controlling for the frequency of attendance, group differences were found ($F(4, 238) = 5.6$, $p < 0.001$). Again, it was the "Introduction to Research Methods C" lecture that differed significantly from the others (Table 2).

Interestingly, there is no significant difference between "Introduction to Research Methods A" and "Introduction to Research Methods B" lectures with respect to those students who participated regularly ($p = 1.0$). There was a significant difference, however, within the "Introduction to Research Methods A" ($p = 0.04$) lecture. Here, the students who attended regularly achieved a significantly higher number of correctly answered questions and therefore a better grade on the final exam compared to those who attended the lecture only infrequently.

Table 1
Descriptive Statistics for Learning Success

Lecture	Passed	Failed	Correct Questions	Grade
Research Methods A	133 (79%)	36 (21%)	70	3.3
Research Methods B	102 (77%)	31 (23%)	69	3.4
Research Methods C	23 (57%)	17 (43%)	63	3.9
Total	258 (75%)	84 (25%)	69	3.4

Table 2
Post Hoc Test (Bonferroni) for Correctly Answered Questions by Lecture and Frequency of Attendance

Correct Questions	RM A (1)		RM B (2)		RM C (3)		Post Hoc
	M	SD	M	SD	M	SD	
Regular Attendance	72.1	11.4	70.9	11.9	62.6	13.3	3 < 1, 2
Rare Attendance	66.4	13.2	70.2	11.9			3 < 2; 1 = 3, 2
Total	167		81		40		

Note. RM A (1) = Introduction to Research Methods A (group 1); RM B (2) = Introduction to Research Methods B group 2) RM C (3) = Introduction to Research Methods C (group 3); M = Mean; SD = Standard Deviation.

Figure 3
Development of Means for Motivation
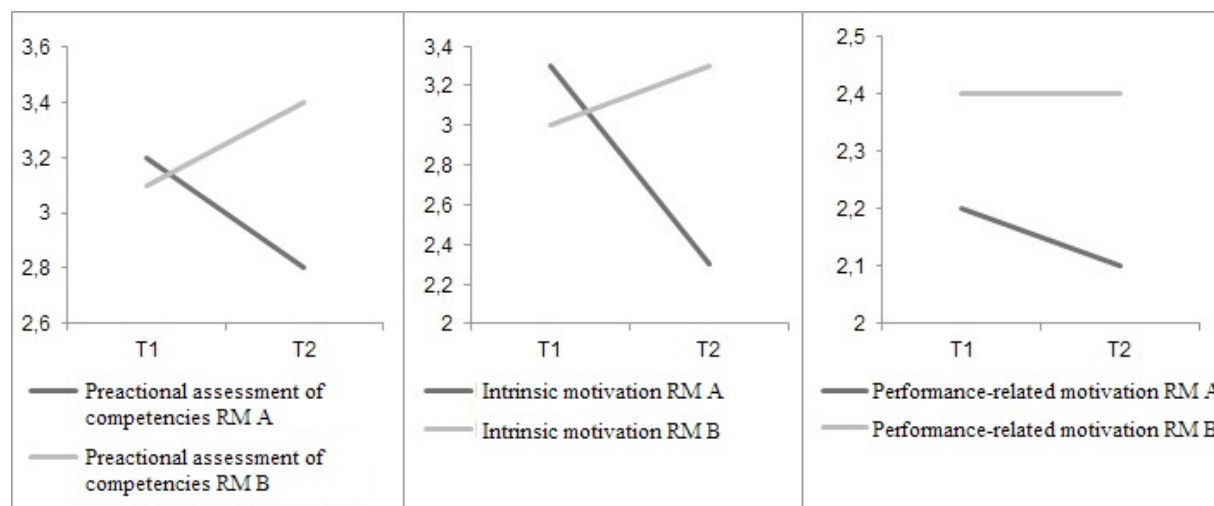
Motivation and Self-Assessment of Competencies

As mentioned before, only "Introduction to Research Methods A" and "Introduction to Research Methods B" could be included in the analysis of motivation and self-assessment of competencies. The reason for this is that items in the survey related to the predefined questions discussed in the lectures.

For a start, possible changes in the students' motivation and self-assessment of competencies were analyzed by taking a closer look at the descriptive statistics (Figure 3). The three dimensions preactional self-assessment of competencies, intrinsic motivation, and performance-related motivation showed the same tendency: the values for "Introduction to Research Methods B" where Votepoint+ was not used increased or at least stayed on the same level while those for "Introduction to Research Methods A" decreased over time. This means that the participants in the "Introduction to Research Methods A" lecture who received individual feedback felt more competent over time with respect to finding the correct answer to the questions discussed. Moreover, their intrinsic and performance-related motivation increased from the time of the first measurement to second one. The repeated-measures MANOVA confirmed this tendency by showing a significant interaction between competencies, motivation, time and lecture ($F(5.33, 266.43) = 6.52$, $p < 0.001$). In other words, the means for the students changed over time depending on whether they attended "Introduction to Research Methods A" and therefore received individual feedback or not. When analyzing each of the three dimensions separately, significant differences between the lecture groups become obvious for the self-assessment of competencies and intrinsic motivation. The students who received individual feedback via Votepoint+ seemed to rate their competencies and intrinsic motivation higher than those who attended "Introduction to Research Methods B."

The items for the postactional self-assessment of competencies were analyzed using a one-way MANOVA. There was a significant difference between the students' answers depending on which lecture they had attended ($F(8, 43) = 2.92$, $p = 0.01$). Therefore, a t-Test was calculated to analyze the items between the groups. All of the items except for one differed significantly between the students who attended "Introduction to Research Methods A" and "Introduction to Research Methods B" ($p < 0.05$). The one non-significant item was the only one that did not relate to the specific questions asked, but rather to the general knowledge gained in the lecture ($t(50) = -0.79$, $p = 0.22$). With regard to the other items for the postactional self-assessment of competencies, the students who received individual feedback via Votepoint+ described themselves as more qualified to answer the questions than those who attended "Introduction to Research Methods B" and were more satisfied with their performance with regard to the questions. Moreover, they found the questions easier to answer and more interesting than the students who did not receive individual feedback. The students who attended "Introduction to Research Methods A" also expressed that they would like to work on questions like these in future sessions, which might be an indicator for the perceived benefits of Votepoint+.

Discussion

Teaching in higher education faces the challenge of adapting to changing conditions. Although the number of students continues to rise, financial resources at universities have stayed the same. This means that there are more students per class due to limited resources in personnel. At the same time, it has become clear that more in-depth teacher-student interaction with regular, individual feedback is needed in order to support self-regulated learning. Under the given circumstances, the practical implementation of feedback seems almost impossible.

The web-based feedback system Votepoint+ provides a low-cost solution for providing feedback. The effort of implementation is relatively low, and the system can even be used in classes with a high number of participants. Feedback only needs to be entered once because the system automatically generates individual documents for each student.

The analysis showed that the participants who attended "Introduction to Research Methods A" where Votepoint+ was used answered more questions correctly on the final exam and achieved a better grade. However, no significant differences were found between the students who received feedback via Votepoint+ and those who discussed the same predefined questions with the teacher. There might be two possible reasons for this non-significance: One might have to do with the type of feedback given. The feedback via Votepoint+ only contained information about which of the answer categories were correct or wrong and the reasons for this. This type of basic feedback was chosen because research on the construction of feedback in higher education is rare. The students who participated in "Introduction to Research Methods B" received similar information: After each session, the correct answers were marked in a document provided online, and the teacher discussed them within the lecture. The other possible reason for non-significant differences between the two groups might be that it was not possible to control for how much time the students invested in working with the feedback at home. A question concerning this was asked in the survey at the end of the semester; however, since only a few students answered the questionnaire, too much information would have been lost if the answers had been included in the analysis. It is also possible that the students did not work with the feedback document at home because they felt that looking at it during the lecture was sufficient.

However, the students who received individual feedback via Votepoint+ showed increased motivation and rated themselves as more competent in answering the review questions. Moreover, they showed a higher interest in the learning material. The students who used Votepoint+ even stated that they had fun answering the questions and felt like they were participating more actively in the lecture.

The positive effect of feedback on the learning success of students might (partly) be a result of their increased motivation and perception of themselves as more competent. The feedback provided by Votepoint+ might not only support review and a deeper understanding of the learning material, but also more self-confidence with regard to the final exam. For the type of lecture that was analyzed within the context of this article, it can be concluded that receiving feedback in one way or another supports students in their learning process. Providing individual feedback through Votepoint+ helps students not only to achieve a higher grade but also become more motivated. However, there is one limitation to the effect on feedback: it needs to be provided and implemented on a regular basis. Students who never or rarely used Votepoint+ and therefore only received feedback on an irregular basis showed significantly lower learning success than those who used it regularly.

The first results reported in this article show that the implementation of Votepoint+ might be a possible approach to the provision of feedback even in classes with high numbers of students. It not only helps teachers to observe the learning progress of students as a basis for possible interventions, but also supports students' learning success and leads to higher motivation and more self-confidence with respect to the learning material. However, further research is needed with regard to the design of an ideal feedback as well as the transferability of Votepoint+ to other kinds of classes that do not focus exclusively on factual knowledge.

Limitations

Although the implementation of a web-based feedback system like Votepoint+ seems to be a promising approach, there are some limitations.

First of all, Votepoint+ was tested in the "Introduction to Research Methods" lectures, in which (mostly) factual knowledge was taught. Therefore, the learning progress of the students could be easily controlled by working on predefined multiple choice questions. But what happens in classes where the goal is to foster critical thinking? In these classes, predefined questions with answer categories are useless because the definition of a correct answer might not be possible. Moreover, the question arises of how feedback via Votepoint+ could be given in classes that focus on the development of higher order thinking skills. In this case, the feedback would have to focus on the quality (e.g., time needed) of the approach that the students choose to solve a problem rather than the correctness of

an answer. This brings up the question of the transferability of the system to other class formats. For example, even though Votepoint+ has been implemented in lectures, it may also find use in other settings such as seminars or tutorials.

Secondly, an analysis of the effect of a different feedback design (e.g., length, inclusion of elaborated components) would have been helpful. However, this could not be done mainly due to the lack of research on feedback in higher education. In addition, there is still no agreement on which components ideal feedback should contain. While more elaborate feedback might help some students, the construction used in this study with only basic elements might be sufficient for others.

References

Bargel, T., Müßig-Trapp, P., & Willige, J. (2008). Studienqualitätsmonitor 2007. Studienqualität und Studiengebühren [PDF file]. *HIS: Forum Hochschule, 1/2008*. Retrieved from http://www.dzhw.eu/pdf/pub_fh/fh-200801.pdf

Berthold, C., Gabriel, G., & Ziegele, F. (2007). *Aktivierende Hochschul-Finanzierung (AktiHF). Ein Konzept zur Beseitigung der Unterfinanzierung der deutschen Hochschulen. Arbeitspapier Nr. 96.* Gütersloh: CHE gemeinnütziges Centrum für Hochschulentwicklung.

Clark, I. (2012). Formative assessment: Assessment is for self-regulated learning. *Educational Psychological Review, 24*, 205–249.

Dohmen, D., & Krempkow, R. (2014). *Die Entwicklung der Hochschulfinanzierung – von 2000 bis 2025.* Retrieved from http://www.kas.de/wf/doc/kas_39052-544-1-30.pdf?141008093517

E-Teaching. (2014). *Elektronische abstimmungssysteme.* Retrieved from http://www.e-teaching.org/technik/praesentation/abstimmungssysteme/index_html

Eurostat. (2015). *Students.* Retrieved from http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00062&plugin=1

Han, J., & Finkelstein, A. (2013). Understanding the effects of professors' pedagogical development with clicker assessment and feedback technologies and the impact on students' engagement and learning in higher education. *Computers & Education, 65*, 64–76.

Hattie, J., & Timperley, H. (2014). The power of feedback. *Review of Educational Research, 77*(1), 81–112.

Heinbach, W. D., & Kühnle, S. (2012). Überschwemmt der doppelte Abiturjahrgang die Hochschulen? Auswirkungen der verkürzten gymnasialen Schulzeit auf den Hochschulbereich – Ein Vergleich zwischen Baden-Württemberg und Bayern. *Beiträge zur Hochschulforschung, 34*, 54–76.

Hernández, R. (2012). Does continuous assessment in higher education support student learning? *Higher Education, 64*, 489–502.

Hochschulrektorenkonferenz. (2008). Für eine Reform der Lehre in den Hochschulen [PDF file]. Retrieved from http://www.hrk.de/uploads/tx_szconvention/Reform_in_der_Lehre_-_Beschluss_22-4-08.pdf

Hölscher, M., & Kreckel, R. (2006). Zur Rolle der Hochschuldidaktik im Zuge der aktuellen Hochschulreformen. *Zeitschrift für Hochschulentwicklung, 1*(1), 62–81.

Huth, K. (2004). *Entwicklung und Evaluation von fehlerspezifischem informativem tutoriellem Feedback (ITF) für die schriftliche Subtraktion* (Unveröffentlichte Dissertation). Technische Universität Dresden, Dresden, DE.

Irons, A. (2008). *Enhancing learning through formative assessment and feedback.* New York, NY: Routledge.

Kay, R. H., & LeSage, A. (2009). A strategic assessment of audience response systems used in higher education. *Australian Journal of Educational Technology, 25*(2), 335–249.

Kultusministerkonferenz. (2012). Vorausberechnung der Studienanfängerzahlen 2012-2025 [PDF file]. Retrieved from http://www.kmk.org/fileadmin/pdf/Statistik/Vorausberechnung_der_Studienanfaengerzahlen_2012-2025_01.pdf

Kundisch, D., Herrmann, P., Whittaker, M., Beutner, M., Fels, G., Magenheim, J. et al. (2012). *Designing a web-based application to support peer instruction for very large groups.* Paper presented at the International Conference on Information Systems, Orlando, FL.

Majerich, D. M., Stull, J. C., Varnum, S. J., & Ducette, J. P. (2011). Facilitation of formative assessments using clickers in a university physics course. *Interdisciplinary Journal of E-Learning and Learning Objects, 7*, 11–24.

Metz, A.-M., Rothe, H.-J., & Pitack, J. (2006). Ressourcen, Belastungen und Beanspruchungen wissenschaftlicher Mitarbeiter. *Wirtschaftspsychologie, 2*, 72–80.

Moreno, R. (2004). Decreasing cognitive load for novice students: Effects on explanatory versus corrective feedback in discovery-based multimedia. *Instructional Science, 32*, 99–113.

Mory, E. H. (2004). Feedback research revisited. In D. H. Jonassen (Eds.), *Handbook of research on educational communications and technology* (pp. 745–783). Mahwah, NJ: Lawrence Erlbaum.

Müller, F. H. (2007). Studierende motivieren. In B. Hawelka, M. Hammerl, & H. Gruber (Eds.), *Förderung von Kompetenzen in der Hochschullehre.*

Theoretische Konzepte und ihre Implementation in der Praxis (pp. 31–43). Kröning, DE: Asanger.

Narciss, S. (2004). The impact of informative tutoring feedback and self-efficacy on motivation and achievement in concept learning. *Experimental Psychology, 51*(3), 214–228.

Narciss, S. (2006). *Informatives tutorielles feedback. Entwicklungs- und evaluations-prinzipien auf der basis instruktionspsychologischer erkenntnisse.* Münster, DE: Waxmann.

Nickel, S. (2011). Zwischen kritik und empirie – Wie wirksam ist der Bologna-Prozess? In S. Nickel (Eds.), *Der Bologna-Prozess aus Sicht der Hochschulforschung. Analysen und impulse für die praxis. Arbeitspapier Nr. 148* (pp. 8–19). Gütersloh: CHE gemeinnütziges Centrum für Hochschulentwicklung.

Nicol, D. J., & Macfarlane-Dick, D. (2007). Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education, 31*(2), 199–218.

Rietz, C., Franke, S., & van Koll, S. (2013). Open educational resources und open access –neue lernformen aus sicht von studierenden. *Zeitschrift für Hochschulentwicklung, 8*(4), 69–88.

Rust, C. (2002). The impact of assessment on student learning. How can the research literature practically help to inform the development of departmental assessment strategies and learner-centred assessment practices? *Active Learning in Higher Education, 3*(2), 145–158.

Schmidt, B. (2011). Teaching engineering dynamics by use of peer instruction supported by an audience response system. *European Journal of Engineering Education, 36*(5), 413–423.

Schmidt, C. (2015). *Die studiensituation an der friedrich-alexander-Universität Erlangen-Nürnberg. Abschlussbericht der studierendenbefragung FAU-Panel 2015.* Retrieved from https://opus4.kobv.de/opus4-fau/files/6119/FAUP-Bericht-Nr-2015-1.pdf

Sippel, S. (2009). Zur relevanz von assessment-feedback in der hochschullehre. *Zeitschrift für Hochschulentwicklung, 4*(1), 1–22.

Statistisches Bundesamt. (2013). *Bildung und kultur. Studierende an hochschulen.* Retrieved from https://www.destatis.de/DE/Publikationen/Thematisch/BildungForschungKultur/Hochschulen/StudierendeHochschulenEndg2110410137004.pdf?__blob=publicationFile

Stuart, S. A. J., Brown, M. I., & Draper, S. W. (2004). Using an electronic voting system in logic lectures: one practitioner's application. *Journal of Computer Assisted Learning, 20,* 95–102.

Vollmeyer, R., & Rheinberg, F. (2005). A surprising effect of feedback on learning. *Learning and Instruction, 15*, 589–602.

Weurlander, M., Söderberg, M., Scheja, M., Hult, H., & Wernerson, A. (2012). Exploring formative assessment as a tool for learning: students' experiences of different methods of formative assessment. *Assessment & Evaluation in Higher Education, 37*(6), 747–760.

Wilson, M., & Scalise, K. (2006). Assessment to improve learning in higher education: The BEAR Assessment System. *Higher Education, 52*, 635–663.

Wissenschaftsrat. (2008). *Empfehlungen zur qualitätsverbesserung von lehre und studium* [PDF file]. Retrieved from http://www.wissenschaftsrat.de/download/archiv/8639-08.pdf

Yorke, M. (2003). Formative assessment in higher education: Moves towards theory and the enhancement of pedagogic practice. *Higher Education, 45*, 477–501.

SIMONE VAN KOLL, Dr., is a research assistant at the chair for Research Methods in the Department of Special Education and Rehabilitation, Faculty of Humanities, University of Cologne. Her research interests include e-learning in higher education, e.g., the use of social media in educational contexts, as well as methodical research and development.

CHRISTIAN RIETZ, Prof. Dr., holds the chair for Research Methods in the Department of Special Education and Rehabilitation, Faculty of Humanities, University of Cologne. His research interests include e.g., digital transformation in educational and health contexts, evaluation research, methodical research and development as well as test theory and test construction.

Six-Word Memoirs: A Content Analysis of First-Year
Course Learning Outcomes

Lisa M. Rubin
Kansas State University

First-year courses prepare students for the transition to, and success in, college. Institutions are interested in assessing student learning outcomes to achieve institutional goals and maintain accreditation. Though it may be difficult to measure student learning and success, colleges aim to assess student learning in the classroom by setting learning outcomes and objectives. The purpose of this study was to explore students' achievement of learning outcomes in a required first-year course through their submission of six-word memoirs about what they learned. This study's framework was Lave and Wenger's (1991) situated learning theory through the process of legitimate peripheral participation.

First-year courses are being implemented at colleges around the United States to prepare students for the transition to college and success during and after their studies. Colleges and universities are also interested in assessing student learning outcomes to achieve institutional goals and maintain accreditation. Beno (2004) defined accreditation as "the primary means of quality assessment and assurance used by higher education in the United States" (p. 66). Though it may be difficult to measure student learning and success, colleges aim to assess student learning in the classroom by setting learning outcomes and objectives. According to Ewell (2001), "Student learning outcomes are rapidly taking center stage as the principal gauge of higher education's effectiveness" (p. 1). Institutions and faculty need to know what exactly a student learning outcome is before measuring it.

Student learning outcomes "are defined in terms of the particular levels of knowledge, skills, and abilities that a student has attained at the end (or as a result) of his or her engagement in a particular set of collegiate experiences" (Ewell, 2001, p. 13). Ewell (2001) explained that there are knowledge, skill, and affective outcomes as well as abilities learned by students. Knowledge outcomes encompass content in an academic discipline, skill outcomes involve doing something (e.g., "think critically, communicate effectively, productively collaborate"), affective outcomes relate to changes in beliefs or value development (e.g., "empathy, ethical behavior, self-respect, or respect for others"), and abilities represent the "integration of knowledge, skills, and attitudes in complex ways that require multiple elements of learning" (Ewell, 2001, p. 13). These outcomes can be assessed at the end of courses or an academic program.

The assessment of student learning is an important process at all institutions. Accrediting bodies (e.g., Middle States Commission on Higher Education, North Central Association of Colleges and Schools, Western Association of Schools and Colleges) have brought student learning outcomes into the standards for accreditation in the assessment of teaching and learning. Ewell (2001) defined the assessment of student learning outcomes as "the processes that an institution or program uses to gather direct evidence about the attainment of student learning outcomes, engaged in for purposes of judging (and improving) overall instructional performance" (p. 14). Institutional learning outcomes are often tied to the general education curriculum (Ewell, 2011). First-year experience courses are often required as part of general education requirements (Hyers & Joslin, 1998; Keup & Barefoot, 2005). Friedman and Marsh (2009) observed, "First-year seminars have increasingly become a common vehicle for helping student adjust to the intellectual and social demands of higher education with hopes of improved student learning" (p. 29). The purpose of this study is to explore students' achievement of learning outcomes in a required first-year course.

Review of the Literature

Keup and Barefoot (2005) utilized longitudinal, multi-institutional data to determine first-year seminars' impact on student learning, transition, and experience. Anaylzing data from 3,680 students at 50 institutions, they found that first-year seminars increased students' "feelings of personal success at establishing meaningful connections with faculty" and comfort with participating in class discussions (Keup & Barefoot, 2005, p. 25). Students' participation in first-year seminars connects with "positive and academic social experiences in college" (Keup & Barefoot, 2005, p. 36). Also, students are more "integrated into the campus community and more successful at various aspects of campus life" (Keup & Barefoot, 2005, p. 36). The faculty that facilitate the learning in first-year seminars enhance the possibility of students' achieving learning outcomes through student engagement. As the research indicated, students who are more active and

comfortable interacting with faculty in the first-year seminar classroom are more likely to be successful on campus in other areas and as they persist through their academic programs.

Smith, Goldfine, and Windham (2009) sought to compare students' meeting learning outcomes between independent first-year seminars and those embedded in learning communities. Drawing from 1,116 first-year students at a large, public institution, Smith and colleagues (2009) administered an instrument while hypothesizing students in the learning communities' seminars would meet course learning outcomes at a higher rate than students in the independent first-year seminars. The results did not support the hypothesis. However, Smith and colleagues (2009) noted some important implications from their study, noting "the learning outcomes of a course or program must always be at the forefront of teaching" (p. 59). This includes placing learning outcomes on the syllabus, connecting each assignment to learning outcomes, and discussing relevant learning outcomes to each classroom topic (Smith et al., 2009). These activities are intentional, which "is the key to helping students understand the connection between what they are doing and what they are learning" (Smith et al., 2009, p. 60). Of course, institutions will need to measure the achievement of learning outcomes through assessment.

Engberg and Mayhew (2007) sought to examine the impact of first-year seminars at a large, public institution in the southwest on student learning and democratic outcomes. They utilized the Student Thinking and Interacting Survey to study students enrolled in first-year seminars, including introductory courses in Engineering and Communication as pedagogical controls. Based on the results, Engberg and Mayhew (2007) found that the first-year seminar "employed a range of active learning strategies" (p. 253). These strategies led to an exposure of diverse perspectives, commitment to social justice, and development of critical thinking skills (Engberg & Mayhew, 2007). Their study demonstrated an effective assessment of particular learning objectives within the first-year seminars at one institution.

Utilizing a different perspective, Walker (2008) researched students' perceptions of learning outcomes and what they think they should learn in college. He commented, "We don't often consider the student perspectives on learning outcomes" to determine curriculum and course objectives (Walker, 2008, p. 47). Noting the complexities of assessment, Walker (2008) continued, "Identifying what is actually taught and actually learned at college are much more complicated" (p. 48). He sent a survey to two sections of a technical writing course at a mid-sized state university, garnering 41 respondents. The students who responded represented a variety of majors from the campus and were not limited to first-year students. Based of the responses, three categories of student learning emerged: course content, career and academic skills, and life skills. Walker (2008) also had students assess their faculty's effectiveness in helping their learning. Though the students responded positively about faculty helping them learn, Walker (2008) noted that "students took more credit for their learning than they gave to faculty" (p. 54). He cautioned that "by limiting assessment to administratively determined learning outcomes, we may shortchange valid perspectives for learning about *learning*" (Walker, 2008, p. 57). Walker (2008) recommended that students participate in the development of learning outcomes throughout their college experience, especially to eliminate marginalizing students with different learning strategies. Pintrich (1988) noted, "While instructors can design tasks to facilitate student learning, students are ultimately responsible for their own learning" (as cited in Walker, 2008, p. 48). The student voice is vital in the development and assessment of learning outcomes.

The *2006 National Survey of First-Year Seminars* collected data from 968 institutions, including representation of two-year and four-year and public and private institutions. From these respondents, 821 offered first-year seminars on their campuses and were considered in the research. In their study of the course objectives and assessment piece of the national survey, Griffin and Tobolowsky (2008) found that only 60.2% of the institutions conducted formal assessment of their first-year seminars since 2003. Griffin and Tobolowsky (2008) determined, "Student course evaluations were the most common form of assessment" but insitutions also utilized external instruments and national surveys (p. 87). Other modes of assessment included instructor and student focus groups, interviews with instructors and students, and institutional data (Griffin & Tobolowsky, 2008). Institutions that participated had a variety of different learning outcomes to assess, all of which are very "campus-specific" and are "tied to the institutional mission" (Griffin & Tobolowsky, 2008, p. 96). Griffin and Tobolowsky (2008) emphasized, "It is essential that campuses invest the time to identify learning objectives and measure them" (p. 96). As accrediting bodies have moved to incorporate student learning outcomes assessment into standards, institutions have engaged faculty, staff, and students in developing learning objectives.

Beno (2004) considered the role of student learning outcomes in accreditation quality review. She commented, "Many faculty…perceive work on student learning as a rewarding means of exploring student learning needs and new pedagogical strategies" (Beno, 2004, p. 65). Beno (2004) emphasized that accreditation evalutes institutional quality, which "is determined by how well an institution fulfills its purposes" and "producing learning is one of the core

purposes of an institution of higher education" (p. 66). The assessment of quality and learning is "in the context of the institution's own mission" (Beno, 2004, p. 66). The questions accreditors have include, "How well are students learning?," and, "How can learning be improved to in turn improve students' lives?" Beno (2004) discussed the shift in evaluating quality from measures of graduation rates and job placement to student learning and success. She explained that student learning outcomes must be appropriate for each course and align with institutional standards. The learning outcomes should be visible on course syllabi and have some way for the institution to measure them. Like Smith and colleagues (2009), Beno (2004) also recommended that learning outcomes be explicit to students via syllabi, course assignments, and classroom topics. Another consideration is for instructors to provide students feedback on their mastery of learning outcomes within the course. All of these suggestions could help improve student learning assessment, learning quality, and preparation for accreditation.

Considering that student learning is a core purpose of higher education, The Higher Learning Commission (2007) offered the following:

> A focus on achieved student learning is critical not only to a higher education organization's ability to promote and improve curricular and co-curricular learning experiences and to provide evidence of the quality of educational experiences and programs, but also to fulfill the most basic public expectations and needs of higher education (p. 1).

The Commission focuses on student learning and assessment as a major component to its accreditation process for colleges and universities. The Commission (2007) "makes clear the centrality of learning to effective higher education organizations and extends and deepens its commitment to and expectations for assessment" (p. 1). To provide guidance for its institutions, The Commission (2007) created six fundamental questions about student learning:

1. How are your stated student learning outcomes appropriate to your mission, programs, degrees, and students?
2. What evidence do you have that students achieve your stated learning outcomes?
3. In what ways do you analyze and use evidence of student learning?
4. How do you ensure shared responsibility for student learning and for assessment of student learning?
5. How do you evaluate and improve the effectiveness of your efforts to assess and improve student learning?

6. In what ways do you inform the public and other stakeholders about what students are learning—and how well? (p. 1)

Clearly, accrediting bodies have spotlighted the importance of student learning outcomes and their assessment on campuses in the United States. Though there are different means of assessment (as shown by Griffin & Tobolowsky, 2008), various modes of assessment are necessary to determine if institutional goals are met.

Theoretical Framework

The intent of many first-year seminars is to create a learning community. Indeed, the small first-year seminar is a very interactive environment. Through participation in class, the students and instructor create their own community learning environment. How does learning in community happen? Lave and Wenger's (1991) theory of situated learning through the process of legitimate peripheral participation offers valuable insight into learning practices and outcomes. According to Lave and Wenger (1991), "Learners inevitably participate in communities of practitioners" and "the mastery of knowledge and skill requires newcomers to move toward full participation in the sociocultural practices of a community" (p. 29). Legitimate peripheral participation is described as a social process that involves "the learning of knowledgeable skills" (Lave & Wenger, 1991, p. 29). The authors emphasized, "It is an analytical viewpoint on learning, a way of understanding learning" (Lave & Wenger, 1991, p. 40). This experience occurs "no matter which educational form provides a context for learning, or whether there is any intentional education form at all" (Lave & Wenger, 1991, p. 40). The experience of students in the first-year experience classroom may enhance learning through participation in the social community developed by the seminar environment.

The seminar environment is designed to create intentional participation. While social learning happens with or without formally organized communities, the specific of the first-year seminar's design could be called a community of practice (Lave & Wenger, 1991). Lave and Wenger (1991) defined a community of practice as "a set of relations among persons activity, and world, over time and in relation with other tangential and overlapping communities of practice" (p. 98). These sets of relations and overlapping experiences occur over the course of the semester in class. For example, in the classroom, if students form ad hoc groups based on results of a learning test to work on a class activity, they participate in a learning process. According to Lave and Wenger (1991), "Activities, tasks, functions, and understandings do not

exist in isolation; they are part of a broader system of relations in which they have meaning. These systems of relations arise out of and are produced and developed within social commnities" (p. 53).

This social process takes place through neogtiation of meaning, and "communities of practice are the prime context in which we can work out common sense through mutual engagement" (Wenger, 1998, p. 47). When diverse students come together in a seminar environment to learn, learning as a social process takes place. In this first-year experience course, the instructor facilitated engagement through involving students in each class session to discuss readings and topics. When discussing certain topics, students with experience in activities such as budgeting and interviewing were asked to share with the class advice and stories. Wenger (1998) explained, "We all have our own theories and ways of understanding the world, and communities of practice are places where we develop, negotiate, and share them" (p. 48). As students increased their participation and involvement in the seminar, they had the ability to enhance the social process for all participants. Besides shaping one's own experience, a participant's ability "to shape the practice of our communities is an important aspect of our experience of participant" (Wenger, 1998, p. 57). However, Wenger (1998) noted that "it is not necessary that all participants interact intensely with everyone else or know each other very well" (p. 126). That means that even if the class only meets once a week, students can have an impact on each other's learning through the community of practice that forms within the seminar.

According to Lave and Wenger (1991), there is a difference between a teaching curriculum (intended practices and outcomes designed by instructor) and a learning curriculum (actual practices and outcomes that emerge through participation). The structure of a teaching curriculum limits learning, and meaning-making is influenced by the instructor. In contrast, a learning curriculum incorporates the perspectives of the learners into the learning process as situated in the community of learners. Under the assumption that learners in the community "have different interests, make diverse contributions to activity, and hold varied viewpoints," participants engage in learning activities at different levels, thus involving all students in the legitimate peripheral participation of the social environment (Lave & Wenger, 1991, p. 98). The learning curriculum "consists of situated opportunities" that include what Lave and Wenger (1991) call "exemplars" or goals, essentially learning outcomes. Students' memoirs surface this learning, and can reveal how the social practices of the community support intended and/or unintended outcomes.

Research Question

The purpose of this study was to explore students' achievement of learning outcomes in a required first-year course. The research question is, "Do students' six-word memoirs reflect the syllabus course and institutional learning outcomes?" Essentially, the study aimed to determine if students share via six-word memoirs that what they learned is reflective of stated course and institutional learning outcomes and objectives on the course syllabus.

Method

Participants in the study were students enrolled in a first-year experience course at a small, public baccalaureate institution in the southwestern United States. On the first class day of the course, students reviewed the syllabus with the instructor, which had both course and institutional learning outcomes on it. The outcomes were tied to specific assignments or quizzes. The course was a hybrid course, and its online component also linked the course learning outcomes to sepcific assignments. The following list includes all course learning outcomes:

- Identify learning styles and how to use them to be successful in different types of college course settings
- Develop study and time management skills
- Understand how to manage personal finances
- Develop a matriculation plan for your college career
- Create and update a professional resume and cover letter, and know how to use these documents in the job search process
- Develop and articulate educational and career goals
- Develop the skills to network, search for jobs, and interview
- Learn the value of diversity in the campus community and workplace

In tandem with these course learning outcomes, the institutional outcomes on the syllabus included: (1) Develop communication abilities; (2) Develop critical thinking abilities; and (3) Develop effective citizenship. Each institutional objective had specific skills and knowledge expected, course learning outcomes associated with it, and specific assignments and exams related to it. A total of 551 data points were collected from nine sections of the course from 2011-2013. The class size was approximately 30 students per section. The instructor, who is also the author of this article, collected voluntary submissions of six-word memoirs

about what they learned in the course from students on the last night of the first-year seminar.

Six-Word Memoirs

Six-word memoirs were not a method used in prior research of assessing student learning outcomes. They have been employed in assessing students' learning of library knowledge in a college library skills course (Miller, 2011). Six-word memoirs and their usage were first developed and implemented by *SMITH Magazine*. Fershleiser and Smith (2008, 2009a, 2009b, 2010) edited four collections of six-word memoirs after featuring calls for them from readers in the digital magazine. They introduced the following:

> Legend has it that Ernest Hemingway was once challenged to write a story in six words. Papa came back swinging with, "For sale: baby shoes, never worn." Some say he called it his best work. Others dismiss the anecdote as a literary folktale. Either way, the six-word story was born, and it's been popping around the writing world for years. (Fershleiser & Smith, 2008, p. v)

As the magazine took off in 2006, the six-word memoirs did too, and before the first edited book was published in 2008, Fershleiser and Smith (2008, 2010) discovered that teachers assigned six-word memoirs to their students, from kindergarten through graduate school. Considering the successful use of six-word memoirs to assess students' learning in the library course, the researcher decided to employ six-word memoirs as the tool to evaluate student learning in the first-year experience course (Miller, 2011).

Data Collection

On the last night of the first-year experience course, the instructor offered the six-word memoir submission as a voluntary extra credit assignment. Students were given examples from the library course research. The instructor also explained the purpose of the research project and handed out an informed consent form addressing the purpose of the research. Students who agreed to submit research did so voluntarily. Some students did submit the extra credit but elected not to participate in the research. The instructor then typed the submissions that were tied to agreeing to participate on the informed consent form, removed identifiers to the course, and never included students' identifying information. The submissions from the nine classes were put on one protected spreadsheet of data without any course identifiers whatsoever and amounted to 551 unique six-word memoirs.

Data Analysis

The researcher utilized content analysis to explore the content of the six-word memoirs without referring back to the learning outcomes to avoid bias and being influenced by them. The researcher utilized NVivo software and employed emergent (or inductive) coding, where "categories are established following some preliminary examination of the data" (Stemler, 2001, para. 12). Emergent coding allowed the researcher to create codes (also called nodes) based on the data rather than based on the established learning outcomes, called a priori coding (Stemler, 2001). According to Bryant and Charmaz (2007), this process is part of substantive coding, where "the researcher works with the data directly, fracturing and analyzing it…through open coding for the emergence of a core category and related concepts" (p. 265). This type of coding is also called focused coding, in which the researcher "searches for the most frequent or significant codes to develop categories" most prevalent from the data (Saldaña, 2013, p. 213). The 551 six-word memoirs were coded, resulting in the creation of nine nodes, which are "'containers' for coding in NVivo software that reference the data in that category" (Bazeley & Richards, 2000, p. 24) from 627 words, phrases, or entire six-word memoirs. These nodes encompass the responses of students to what they learned in the first-year seminar course through six-word memoirs. A word frequency of the six-word memoirs was conducted for triangulation, which Denzin explained as "the combination of methodologies in the study of the same phenomenon" (as cited in Jick, 1979, p. 602) to see if any patterns of words emerged from the data. The most common word stem in the data was "learning," followed by "class," "resume," and "interview." "Learning" and "class" had significantly more mentions in the students' six-word memoirs than any other root word. The students were asked to write about anything they learned in the course, so these words could be influenced by the assignment.

Results and Discussion

The research question asked, "Do students' six-word memoirs reflect the syllabus course and institutional learning outcomes?" Considering the course and institutional learning outcomes from the syllabus, the researcher analyzed the data and compared the results to these outcomes. From the content analysis, nine rich emergent codes included: campus resources, career documents, financial aid/money management, learn from each other, perception of course or instructor, prepare for future, self-discovery, skills, and success. No six-word memoirs or nodes directly addressed the diversity learning outcome in the

syllabus. Each node will be described with a sample of submitted six-word memoirs.

Campus Resources

The campus resources node encompassed what students learned about resources to help them. Examples of six-word memoirs in this node are "Found useful library resources and help," "Guest speakers are really informative tools," and "Utilize academic advisors to graduate quickly." Campus resources enable students to develop these skills with appropriate tools and assistance. This node included six-word memoirs like "Found useful library resources and help" and, "Utilize academic advisors to graduate quickly." Once students become aware of resources and people on campus that impact other learning outcomes, then they may achieve progress towards graduation (prepare for future node, develop a matriculation plan learning outcome) or other learning outcomes.

Career Documents

All memoirs in the career documents node referred to resumes, cover letters, or follow-up letters, such as, "Learned to write my resume properly," and, "Thank you letter goes long way." Other examples include, "My resume sucked until this course," and, "Cover letters can set you apart." This node directly relates to the course learning outcome to create a professional resume and cover letter and learn how to use the documents in the job search process.

Financial Aid/Money Management

For the node of financial aid/money management, examples of six-word memoirs are "Never own too many credit cards," "Teaches how to save money now," and "Learning about school debt is eye-opening!" All of these memoirs are creative yet concise ways to express knowledge in the classroom. The financial aid/money management node included content from 30 six-word memoirs. "Learned how to manage money functionally," and, "Taught me how to budget finances," are examples of six-word memoirs in this category that directly relate to the syllabus learning outcome of understanding how to manage personal finances.

Learn from Each Other

In the learn from each other node, students shared six-word memoirs like "Loved to hear other people's stories," "Class is engaging, just like family," and, "Enjoyed hearing every student's own experience." This six-word memoir provides the direct connection between the learners and the social environment of the seminar.

Students listening to each other's experiences and interpretations of course content experienced legitimate peripheral participation. A number of students shared the experience and enjoyment of learning from each other or of the course being like a family. The seminar environment did allow for participation from all students, including a lot of interaction and discussion during classroom activities. Through the lens of situated learning and legitimate peripheral participation, this node demonstrates that students in this first-year experience course learned from classmates and were influenced by what they shared during classroom learning. This occurred through the community of practice and the negotiation of meaning through the information and ideas shared by classmates.

Perception of Course or Instructor

One of the three largest nodes is perception of course or instructor. Examples of this node include "Got great feedback from the teacher," "My teacher is knowledgeable and professional," "Great class to begin college career," "Impressed how fun this class was," "Gave me faith in school again," "Pleasantly surprised with the knowledge learned," and, "This class prepared me for college!" The six-word memoirs did provide great feedback about the course and instructor experience in addition to teaching evaluations. The majority of the six-word memoirs within this node reflected positive or constructive comments about the first-year seminar itself, including content, timing, design, and assignments. An example was "Fun informative class about life skills." Other six-word memoirs in this node provided feedback about the instructor (e.g., "Loved your passion for this class"). The students were asked to write about anything they learned in the course, so it is interesting that students learned about the course structure and instructor's influence, part of the situated learning experience explored by Lave and Wenger (1991).

Students also provided a critical view of the course and instructor through the six-word memoirs. Examples include, "Class was fun, but more interaction," "Class needs to be more interesting," and, "My head hurts after this class." Sometimes, students had negative perceptions after learning the course topics. Examples of these include, "Class made me scared to graduate," "I am not getting this class," and, "I am dreading ever being interviewed." Each student experiences learning from course materials and instructors differently, so it is important for instructors to understand if students are struggling or if teaching styles are not successful. In this course, the instructor designed the class to reach students based on learning styles and multiple intelligences quizzes taken on the first day of class, but that does not result in every

student having a successful learning experience or enjoying the class or instructor.

Prepare for Future

In the prepare for future node, students wrote six-word memoirs like, "Made me eager to career search," "Goals are very important in life," "Learned the classes left to graduate," "This class gave me more ambition," "My future is more clear today," and, "My unknown journey has a direction." Besides feeling more prepared for college, many students learned a lot about themselves throughout their experience in the first-year seminar. The prepare for future node relates directly to the development of a matriculation plan. The learning outcome of developing career and educational goals is related to both preparing for the future and self-discovery. An example of a six-word memoirs in the prepare for future node was "Matriculation project was a look forward." Developing educational and career goals certainly is related to preparing for the future, yet a lot of students in first-year seminars are discovering not only their educational and career direction, but often their identity also.

Self-Discovery

The self-discovery node showcased different experiences of students' personal development or understanding of self, learned through the course. These six-word memoirs include, "Identified my top values and priorities," "Take credit for your great work," "Felt more confidence with each assignment," "Life needs balance for full potential," "I was a very quiet student," "I never knew that before today," "I learned what my weaknesses are," and, "Have never valued education so much." Other rich examples of self-discovery include, "I learned about my personal values," "The importance of having an education," "Learned that my knowledge has value," "I got to know myself better," and "I feel I finally found myself." There are many more instances of different self-discovery experiences shared through the students' six-word memoirs. Many of these do relate to the development of career and educational goals, but other self-discovery content connected with the institutional learning outcome, Develop effective citizenship, listed above.

Skills

The largest node, skills, encompasses many of the skills-related syllabus learning outcomes: learning styles, time management, study techniques, and career skills like job searching and interviewing. Some examples are, "Gave me tools to assist me," "Had fun discovering different career options," "Found out how to conduct research," "Make sure to use action verbs,"

and, "Happiness is keeping a detailed schedule." Students demonstrated knowledge of career development, time management, library usage, and many other skills relevant to academic and life success. Additional six-word memoirs coded in the skills nodes were "My learning style is auditory learner," "I learned about time management here," "Learned more strategies for my studying," "I learned interview do's and don'ts," and "Networking helps find future job possibilities." The institutional learning outcomes of develop communication abilities and critical thinking abilities also fall under the skills node. Six-word memoirs in the skills category related to these outcomes include, "Communication is the key to success," "This class helped me with shyness," and, "This class made me think more!"

Success

Success is the last node emergent from the data. Some six-word memoirs in this node are "Education is the foundation of success," "My success is measured by me," and "Finally feel on track, let's roll!" The success node and its content do not directly tie to any of the course or institutional learning outcomes on the syllabus. Though many of the six-word memoirs of this node may overlap with some of the other nodes or learning outcomes, the content may be more general to students' feelings at the end of the course. An example of a six-word memoir in the success module was, "College success = living the good life." Readers may assume this relates to a matriculation plan or a benefit that will lead to a career, but this also could be related to developing good citizens for society. However, no direct connection can be made between the success node and its memoirs within it.

Limitations

This study had a few limitations. The researcher was the sole coder of the data, thus there is no measure of interrater or intracoder reliability. However, the exercise enabled the instructor of these courses to determine what was learned by students, which was a helpful reflective exercise for teaching and learning. Though the researcher did not refer to the learning outcomes before coding the data, she did place them on the syllabus and incorporate them in the classroom, so it is possible that the outcomes influenced her. However, the data were collected from 2011-2013, the researcher last taught the course in the Spring of 2014, and the data was not coded until the Fall of 2014, so there was a considerable time gap from the influence of the syllabus learning outcomes on the coding process.

Conclusion

Much can be learned from students' six-word memoirs about their learning experiences in the first-year seminar. This provided a creative outlet for students to express what they learned in the course. This prompt, given to students as the last activity in the course in each section, allowed for students to share any area of learning impact throughout the first-year experience course. Nine rich categories emerged from the content analysis of the six-word memoirs data set. Six of these nine categories directly connected to the course and institutional learning outcomes stated on the syllabus provided to students at the beginning of the first-year seminar: career documents, financial aid/money management, learning from each other, preparation for future, self-discovery, and skills. The other nodes, perception of course or instructor, campus resources and success, are relevant in terms of overlap and influence on student learning, though they do not directly correspond to a particular learning outcomes on the syllabus. The perception of course or instructor also indicates that this is an alternative way for students to evaluate the course and instructor in addition to assessing learning outcomes.

Based on the results of this study, there is a significant connection between the student learning outcomes on the syllabus and what students learned in the classroom. Smith and colleagues (2009) had emphasized the importance of a connection between what students are doing and learning. Through the six-word memoirs, students in these first-year seminars expressed learning a variety of concepts in the course related to stated learning outcomes for the course and the institution. Lave and Wenger (1991) explained in situated learning theory that students have different perspectives in the learning environment and that learning is an improvised practice. Though students contribute to class and learn differently from each other, students in this first-year experience course over time connected to a variety of stated learning outcomes. This could be attributed to starting the course with stated exemplars and the process of legitimate peripheral participation in a community of practice. This was one way to measure if the student learning outcomes were aligned with activities in the classroom and institutional standards for accreditation (Beno, 2004). Lave and Wenger (1991) noted that the learning curriculum is developed through the learners' experiences in the situated learning opportunities in the classroom environment, whereas a teaching curriculum is heavily influenced by structure and the instructor. The first-year seminar provides an environment ripe for students to experience legitimate peripheral participation through situated learning utilizing the exemplars (expressed learning outcomes) for the course

(Lave & Wenger, 1991). Setting clear learning outcomes in the syllabus and sharing them with the class at the beginning may benefit student learning throughout the first-year course. This provides institutions strong opportunities to assess student learning outcomes achievement using a variety of techniques with suggested guidelines by The Higher Learning Commission (2007) and other accrediting agencies.

Implications

The first-year seminar provides an environment that fosters situated learning and legitimate peripheral participation by the students in the classroom. Though the instructor and institution set learning outcomes that were written in the syllabus, the outcomes did not necessarily create a structure that controlled classroom learning. Rather, through the seminar environment and student involvement, learning outcomes were achieved through the learning curriculum that the students experienced. This result is significant as the accreditation community aims to incorporate and emphasize student learning outcomes as a measure of quality. Because the first-year seminar serves a specific purpose in a general education curriculum whether required or not, its classroom environment should engage students through discussion and learning from each other. In a way, the instructor becomes a facilitator who allows students to learn from each other or challenge each other to participate more in classroom activities.

Six-word memoirs were a creative tool to explore miniature anecdotes of what students learned in the first-year experience course, but there are many ways to assess student learning. In this study, six-word memoirs provided a new way to assess student learning and relate it to learning outcomes stated in the syllabus. Carefully designing learning outcomes (both for courses and institution-wide) is important to prepare for accreditation and the standards of teaching and learning. Once learning outcomes are established, assessing student learning can be explored both through emergent and a priori means, or via quantitative measures, which are ideas for future research. Also, employing multiple coders for the data, especially those who did not instruct the courses, could determine different angles in exploring the data. In this study, the first-year seminar provided an arena that allowed for students to engage in legitimate peripheral participation, therefore directly achieving learning outcomes and learning about other areas important to the college experience: campus resources and success. The pinnacle of this research is the convergence of exploring educational quality (via accreditation), assessing student learning (outcomes), and the importance of the first-year seminar. All of these

concepts coupled with students' experience in the first-year course may also allow for instructor evaluation through a different perspective. In this particular course, students' learning closely aligned with learning outcomes and the essence of the first-year seminar. One student shared, "Wish this class were a pocketbook."

References

Bazeley, P., & Richards, L. (2000). *The NVivo qualitative project book*. London, UK: Sage Publications.

Beno, B. A. (2004). The role of student learning outcomes in accreditation quality review. *New Directions for Community Colleges, 2004*(126), 65-72.

Bryant, A., & Charmaz, K. (2007). *The SAGE handbook of grounded theory*. London, UK: Sage Publications.

Engberg, M. E., & Mayhew, M.J. (2007). The influence of first-year "success" courses on student learning and democratic outcomes. *Journal of College Student Development, 48*(3), 241-258.

Ewell, T. (2001). *Accreditation and student learning outcomes: A proposed point of departure*. Washington, DC: Council for Higher Education Accreditation.

Fershleiser, R., & Smith, L. (Eds). (2008). *Not quite what I was planning: Six-Word memoirs by writers famous and obscure.* New York, NY: HarperCollins Publishers.

Fershleiser, R., & Smith, L. (Eds). (2009a). *I can't keep my own secrets: Six-word memoirs by teens famous & obscure*. New York, NY: HarperCollins Publishers.

Fershleiser, R., & Smith, L. (Eds). (2009b). *Six-word memoirs on love and heartbreak*. New York, NY: HarperCollins Publishers.

Fershleiser, R., & Smith, L. (Eds). (2010). *It all changed in an instant: More six-word memoirs by writers famous and obscure.* New York, NY: HarperCollins Publishers.

Friedman, D. B., & Marsh, E. G. (2009). What type of first-year seminar is most effective? A comparison of thematic seminars and college transition/success seminars. *Journal of The First-Year Experience and Students in Transition, 21*(1), 29-42.

Griffin, A., & Tobolowsky, B.F. (2008). Course objectives and assessment. In B.F. Tobolowsky & Associates (Eds.), *2006 national survey of first-year seminars: Continuing innovations in the collegiate curriculum* (Monograph No. 51, pp. 83-96). Columbia, SC: National Resource Center for The First-Year Experience and Students in Transition.

Higher Learning Commission. (2007). Student learning, assessment, and accreditation. Chicago: Author.

Hyers, A.D., & Joslin, M.N. (1998). The first year seminar as a predictor of academic achievement and persistence. *Journal of The Freshman Year Experience, 10*(1), 7-30.

Jick, T.D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*(4), 602-611.

Keup, J. R., & Barefoot, B. O. (2005). Learning how to be a successful student: Exploring the impact of first-year seminars on student outcomes. *Journal of The First-Year Experience, 17*(1), 11-47.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.

Miller, R. (2011). I came, I saw, I researched: Students reflect on library life in six word memoirs. *College & Research Libraries News, 72*(6), 338-356.

Pintrich, P.R. (1988). Student learning and college teaching. In R.E. Young & K.E. Eble (Eds.), *College teaching and learning: Preparing for new commitments* (pp. 71-86). San Francisco: Jossey-Bass.

Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). London, UK: Sage Publications.

Smith, D. N., Goldfine, R., & Windham, M. (2009). Comparing student learning outcomes in an independent section of a first-year seminar to a first-year seminar embedded in a learning community. *Journal of The First-Year Experience & Students in Transition, 21*(2), 47-64.

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation, 7*(17). Retrieved from http://PAREonline.net/getvn.asp?v=7&n=17

Walker, P. (2008). What do students think they (should) learn at college? Student perceptions of essential learning outcomes. *Journal of the Scholarship of Teaching and Learning, 8*(1), 45-60.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, UK: Cambridge University Press.

_____

LISA M. RUBIN, PhD is an assistant professor of Student Services in Intercollegiate Athletics at Kansas State University. Her research areas of interest include college student-athlete development, women in intercollegiate athletic administration, and college transition programs. She currently serves on the editorial board for the *Journal of Higher Education Athletics & Innovation*, the NACADA-NCAA Advisory Board, as Research Committee Chair for the N4A, and as Secretary/Treasurer of the Research Focus on Education and Sport special interest group of the AERA.

Teaching Gender: Australian First-Year University Student Views of "Ms."

Edgar Burns, Ian Tulloch, and Ardel Shamsullah
La Trobe University

Negative "push-back" from a group of first-year undergraduate sociology students during a class discussion of gender and feminism included rejecting personal use of the title Ms. Teaching team members asked themselves: how general is this response among other student groups in the same one-semester subject? A short in-class survey checked personal attitudes towards Ms. that might reflect shifting views towards feminism and gender among contemporary Australian "middle-town" students. Results showed this to be a specific dissenting cluster of students. The survey indicated some generational changes towards using Ms., but responses to Ms. were more complex than lack of student knowledge or interest, part of socio-cultural changes in play for these students and society generally.

This teacher reflection investigated student objections to using Ms. to check our understanding of current attitudes and potentially improve our classroom practices teaching gender inequality to students at this point in historic time. Rural undergraduate sociology students' survey responses about using Ms. provided insights into how their perception of this title bears on their own present-day positioning and locality in the second decade into a new century (McRobbie, 2004; Woodward & Woodward, 2009). Conscious or unconscious shifts from second-wave feminism can sometimes be traced to specific sites of conflict or practices. Non-metropolitan parts of society may respond to gendered cultural change in different ways than urbanized populations. This discussion of Australian undergraduate students concerns an English-speaking Western context, recognizing that in other cultural settings—France for instance—implications of gender titles like "mademoiselle" sit differently (Symons, 2012).

The Class Challenges the Instructor

From a first-year sociology class exploring gender inequalities, one teaching team member reported eighteen-year-old women students, just post-high-school, insisted that their school teachers told them the rule on using Ms. was that it indicated not married, in contrast to Mrs., which meant married. If a person had been married, Ms. meant that she was now divorced: that is, single or unmarried again. Students were firm and clear in this view, rejecting the instructor's countering idea that Ms. simply meant woman, without indicating her marital or partnered status—in the same way as Mr. does not identify a man's marital or partnered status. These students did not acknowledge this rationale for adopting Ms. by women, or that it had been around since the 1970s. Furthermore, these students described Ms. as a kind of "loser" term for aunts, un-married and older women, having out-of-date connotations they did not want to be identified with. Definitely Ms. should only be used when a woman was

divorced or widowed, or perhaps in some high-up government or organizational position.

Ms. in Time and Place

These students come mostly from towns and farming communities across the northern part of the Australian state of Victoria. The interaction of traditional gendered rural workforce roles and normativity with second-wave feminism's emphasis on equality of opportunity and self-representation is an interesting space to identify shifts or resistance to changing cultural practices (Bock, 2014; Kleinman, Copp, & Sandstrom, 2006). Double-checking what high-school teachers in this Australian setting think they said or meant in such conversations is a separate question and not pursued here.

The perceptions and beliefs now held by these beginning university students, however formed, constituted the basis of reflection on teaching practice. This teaching experience raised questions for the teaching team barely one-third of the way through the semester. First and foremost, how widespread were such strongly held views among the present student cohort? What does this "push back" in classes that are otherwise running well tell us since, as Titus (2000) shows, there are both conceptual and consequential aspects here? (McCabe, 2013). Do student responses to using Ms. show themes from their lived locality in terms of Donkersloot's (2011) concept of the "gendered nature of rural space and place?"

Ms. Themes in the Literature

The use of Ms. is only one thread in a broader cultural literature about changing feminisms and changing responses to feminist ideas (Charles, 2010; Genz & Brabon, 2009; Harris, 2004; Ringrose, 2007; Robinson, 2011). We have not tried to explicate the rich academic enterprise—seen across most humanities and social science disciplines—investigating these societal

shifts. Terms like post-feminism, third-wave feminism and Girl Power contest this theoretic space. Delight in these new cultural forms. by some scholars vies with a sense of loss, even pastoral worry, among other experienced feminist scholars or teachers. The underlying argument in this analysis of student views about the term Ms. is teacher responsiveness to gender identities as a cultural practice and the implications of this in the classroom. Four strands from the literature framed our reflection on student responses to Ms. as a personal title: agency, stereotypes, generational shifts, and changed visibility in post-feminist society.

Ms. Demonstrating Agency

Using Ms. as a neutral term avoiding the asymmetrical specification of marital status for women, since it is not disclosed for men by Mr., is a basic contention of feminist theory. Pauwels (1996) discusses this with analysis of gendering effects of male and female names and using endearments even in professional settings (p. 255). She cites Spender's (1980) statement from a third of a century ago:

> The practice of labelling women as married or single also serves supremely sexist ends. There is a tension between the representation of women as sex objects and the male ownership rights over women and this has been resolved by an explicit and most visible device designating the married status of women (p. 27).

Pauwels (1996, p. 256-257) describes Ms. as one of three possible strategies to restore linguistic gender fairness. This discussion centers on present-day generational understandings of second-wave feminism's advocacy of Ms. as a public, repeating, site for contesting traditional gender norms.

Ms. Viewed Stereotypically

In the intensely contested social changes of second-wave feminism, the rhetorical project of personal titles helped crystallize the argument that gender-asymmetric titling was inappropriate in the modern day and age: dragging all sorts of past gender assumptions, implications, and familial gendered relations into modern contexts where they were no longer relevant. Dion and Cota (1991) explain their assertion that the "origins of the Ms. stereotype deserve consideration":

> Why is it that women who prefer Ms. as their title of address elicit stronger attributions of agentic qualities and weaker attributions of expressive qualities than women who prefer traditional titles of address for themselves? One answer is that from

a social role perspective... career-oriented women are more likely to prefer Ms. as their title of address, whereas women choosing to be housewives are more apt to select a traditional title of address for themselves (p. 409).

Tracing origins provides one key for understanding social, organizational, or political processes, but what about other ongoing responses in the social context of the feminist movement, for the inheritors of progress made?

Generationally Changing Titles

Atkins-Sayre (2005) describes the importance of Ms. emerging during the 1970s, since it "illustrated the rhetorical importance of naming and language in general" (p. 15). She summarizes her work as follows:

> Feminists argued that "Mrs." and "Miss" divided women into unnecessary categories. "Ms.," they argued, would create a new woman, defined as an independent human being. This essay traces out the emergence of the term as a political issue and discusses the rhetorical importance of "Ms." It concludes that the history of the successful introduction of this language change is important both as part of the history of second-wave feminism and because of implications for future language issues (p. 15).

Atkins-Sayre's (2005) detailed historical review from a linguistic perspective concludes, "Just the ability to use the term was cause for celebration for women. There were certainly larger wins for the feminist movement—for women in general—but the debates that happened over Ms. indicate the importance of this feat. Women claimed a right to define themselves through this title, to be known as individuals, and to be more than a Miss or a Mrs." (p. 15). Ms. has been a highly symbolic aspect of second-wave feminist action.

Is Ms. Invisible in Post-Feminist Society?

Using the idea of assimilation, Crawford, Stark and Renner (1998) observe, "When Ms. was first introduced as an alternative to Miss or Mrs., it was perceived as a radical feminist innovation. Today, its use is unremarkable, even normative" (p. 197). The very "edginess" of contesting definitions of appropriate usage made Ms. very visible, as it was intended to be. These authors refer to opprobrium heaped on women using Ms. They comment, "The idea that there should be a term of address for women that paralleled Mr. in being neutral with respect to marital status was a matter of great controversy" (p. 197). Over several decades the

shift to more "common usage," plus changing expectations about freedom to decide for oneself, has shifted the visibility of the term. In the same time period, however, new spaces for covert denigration of individual feminine identities not fitting some traditional model have developed, including discourses around the term Ms.

Dion and Cota (1991), writing at the start of the 1990s, refer to the catch-22 effect (Faludi, 1991) that occurs for women using the title Ms., imploding women's motivations back on them over the mere choice of the term. Dion and Cota note that this resistance to change was seen in "accumulating evidence that a woman's preference for title of address is a stereotypic cue for perceivers." (p. 408). Earlier imputations of personal agency are thus paradoxically coupled with negative stereotypic portrayals of women (Feather, O'Driscoll & Nagel, 1979). Lawton, Blakemore, and Vartanian (2003) investigated the conjunction over time of age and Ms./Miss: single but too old for Miss, then use Ms. Further, normalizing achievements of feminism, coupled with individualizing discourses of choice, render Ms. less visible with the passage of time.

Ms. thus intersects multiple discourses around gender roles and feminism. As teachers engaging students in gender fairness discussions, this strongly voiced student reaction challenged these new choices. However, seeing Ms. as a polysemic term sensitized us as researchers to different spaces people occupy and from which they make or affirm changing meanings. Our aim has been to emulate Karlyn (2011) in Levine's (2011) words as we reflect on our teaching task, contributing "crucial insights to our understandings of this ongoing cultural moment and offer a perspective both sympathetic and critical," in placing our reflections within "respectful cultural criticism" (p. 912).

Method

A simple survey sheet asked students about their views of changes to gender norms and their use/opinions about the personal title Ms. This allowed us to explore how widespread student anti-Ms. sentiment was, testing our concerns that a broader cohort of students was dismissive of Ms. as a personal title. Anonymously completed surveys from 125 (93%) students were returned from eight classes in the survey week (71% of 177 students enrolled in this subject). Women outnumbered men 4:1 (79.2 to 20.8%), and nearly three-quarters of participants (71.2%) were 20 years or younger. The university campus is in a provincial city of 100,000 people drawing from surrounding rural regions and small town communities. It is a mid-tier university in Australian tertiary rankings, about 1-2 hours from a major metropolitan center.

These demographic details situate this cohort as being within a typical band of rural Australian students. They are not used in the exploratory nature of the findings below to describe views or make claims beyond this context. An important distinction can be made between the limits to generalization of one local study, on the one hand, and the broad interest in western cultural changes in attitudes—or not—to gender equality and the roles of men and women in professions in the past half-century, on the other.

A bank of thirteen Likert items asked students for, "Your opinions about the use of the title Ms." Most items were presented in pairs, the second item reversing order to cross-check answers by response-pattern interruption for students inclined to simply enter a response towards one end or the other of the "Strongly Agree" to "Strongly Disagree" check-boxes. For instance, the contrasting pair of, "I associate it with old-style feminism," is followed by, "I associate it with today's feminism," which invited respondents to check their views a second time.

Students were also asked an open question: "How would you sum up in a sentence or two your opinion on the use of Ms.?" Students were given two lines of full page-width to respond. Ten students (3 men and 7 women—8.0% of all women, all but one under 21 years) chose not to respond to this question. The other 115 students made a range of comments helpful to our reflective intent as teachers, and these are presented as a series of themes. Demographic and Likert data was prepared using PASW-18 (formerly SPSS) for frequencies, cross-tables, and percentages (Tables 1-3). The open-ended question was coded using Microsoft Excel and consolidated into themes grouping student responses (Table 4 and Figures 1 & 2). Findings are divided into two parts: first discussion of student responses to the Likert items, and second, consideration of the open-ended question about Ms.

Findings 1: Likert Questions about Using Ms.

Tables 1, 2, and 3 present data from the survey rating the strength of students views around the use of Ms.

Ms. Use Patterns

Students were asked, "What title do you use for yourself?" and offered four choices (Table 1). Women respondents identified their use of possible personal titles Miss, Ms., Mrs., as follows: 84 women (67.2%) used the personal title Miss, 9 (7.2%) use Ms., and 5 (4.0%) used Mrs. All 26 men in the survey used the title Mr. (100.0%), and one woman respondent also selected Mr. Given the focus on alternative title usages women may choose, and discursive meanings around such

Table 1
Personal Titles Used by First-year Women Students by Age*

| | Age | | | | Total |
	<21 yrs	21-29 yrs	30-39 yrs	40+ yrs	
Miss	71	10	3	0	84
	84.5%	11.9%	3.6%	0.0%	100.0%
Ms.	1	1	1	6	9
	11.1%	11.1%	11.1%	66.7%	100.0%
Mrs.	0	1	3	1	5
	0.0%	20.0%	60.0%	20.0%	100.0%
Total	72	12	7	8	98
	73.5%	12.3%	7.1%	7.1%	100.0%

Note. *One woman respondent using Mr not included.

Table 2
"I Might Use Ms. Myself"—Women by Age

| | Age | | | | Total |
	<21 yrs	21-29 yrs	30-39 yrs	40+ yrs	
Strongly agree	2	1	1	4	8
	2.8%	9.1%	14.3%	50.0%	8.2%
Agree	17	4	1	2	24
	23.6%	36.4%	14.3%	25.0%	24.5%
Neutral	27	1	2	0	30
	37.5%	9.1%	28.6%	0.0%	30.6%
Disagree	16	2	3	1	22
	22.2%	18.2%	42.9%	12.5%	22.4
Strongly disagree	10	3	0	1	14
	13.9%	27.3%	0.0%	12.5%	14.6
Total	72	11	7	8	98
	100.0%	100.0%	100.0%	100.0%	100.0%

decisions, we were interested in whether women in the study were making different choices by age.

Two-thirds (67.2%) of all the students (both male and female) were young women aged under 21 years, and this same cohort constituted nearly three quarters (72.5%) of the women student group. Table 1 shows an unambiguous difference by age in the choice of personal title. Younger women less than 21 years almost completely chose Miss; adding the ten students aged 21-29 years to the 71 students less than 21 years gives 81 out of 84 or 96.4% of women using this title. The three remaining respondents using Miss were under 40 years, in the 30-39 year cohort. The age pattern for students using the personal title Ms. was the reverse, although the number of older students was much smaller.

Nine women reported using Ms.: only one was in the under-21 age-group, one in the 21-29 age-group, and one was in the 30-39 age-group. Two thirds of these students (6 of 9) were over forty years of age. For the third personal title option, three of the five students using Mrs. were in their thirties, one was in her twenties, and one was over forty. An interesting question that follows from this is: what do these personal preferences for Miss in the case of young women students translate to on a broader front? Are they somewhat, a lot, or not-at-all, well-disposed to the wider implications of gender labelling and feminist ideas about feminine identity? In a series of more specific questions, all students were invited to select one choice for each line of thirteen Likert items. in either agreement or disagreement about each statement,

Table 3

Likert Ratings of 13 Attitude and Behaviour Items. Regarding Use of Ms. by Age

Item	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total	
Age	< 21	21+	< 21	21+	< 21	21+	< 21	21+	< 21	21+	< 21	21+
Professional women use it	10	6	38	11	30	13	11	3	1	0	90	33
	11.1	18.2	42.2	33.3	33.3	39.4	12.2	9.1	1.1	0.0	100%	100%
Professional women should use it	3	4	15	2	52	19	18	7	2	1	90	33
	3.3	12.1	16.7	6.1	57.8	57.6	20.0	21.2	2.2	3.0	100%	100%
I might use it myself	3	6	18	8	28	4	16	7	25	8	90	33
	3.3	18.2	20.0	24.2	31.1	12.1	17.8	21.2	27.8	24.2	100%	100%
Only divorced or widowed women should use it	5	3	14	1	33	12	26	5	12	12	90	33
	5.6	9.1	15.6	3.0	36.7	36.4	28.9	15.2	13.3	36.4	100%	100%
Single women can use it	9	9	53	12	23	8	4	4	1	1	90	34
	10.0	26.5	58.9	35.3	25.6	23.5	4.4	11.8	1.1	2.9	100%	100%
I associate it with old-style feminism	4	5	24	7	34	10	20	6	8	5	90	33
	4.4	15.2	26.7	21.2	37.8	30.3	22.2	18.2	8.9	15.2	100%	100%
I associate it with today's feminism	3	2	15	9	48	11	21	9	3	2	90	33
	3.3	6.1	16.7	27.3	53.3	33.3	23.3	27.3	3.3	6.1	100%	100%
On my values, it is a bad term	2	0	3	2	25	11	39	7	21	13	90	33
	2.2	0.0	3.3	6.1	27.8	33.3	43.3	21.2	23.3	39.4	100%	100%
My mother would be ok with the term herself	6	4	32	10	29	8	15	8	8	3	90	33
	6.7	12.1	35.6	30.3	32.2	24.2	16.7	24.2	8.9	9.1	100%	100%
My mother would be ok with me using it	10	6	36	13	29	9	6	1	8	4	89	33
	11.2	18.2	40.4	39.4	32.6	27.3	6.7	3.0	9.0	12.1	100%	100%
My school recommended me using it	0	0	4	2	26	12	28	8	30	10	88	32
	0.0	0.0	4.5	6.3	29.5	37.5	31.8	25.0	34.1	31.3	100%	100%
My school said it was inappropriate for me to use it	4	2	7	3	20	13	29	5	29	9	89	32
	4.5	6.3	7.9	3.4	22.5	40.6	32.6	15.6	32.6	28.1	100%	100%
My peers would think it uncool	8	4	8	3	27	14	27	5	19	7	89	33
	9.0	12.1	9.0	9.1	30.3	42.4	30.3	15.2	21.3	21.2	100%	100%

using five standard categories from Strongly Agree to Strongly Disagree.

The Starting Question

How general were the views of that initial group who claimed high school teachers advised them against using Ms.? Students rated contrasting statements which asked: "My school recommended me using it," and, "My school said it was inappropriate for me to use it." In contrast to the initial class conversation with which this article began, only ten women (10.5% of women) strongly agreed or agreed that their school said Ms. was inappropriate for them to use as a title. Just over one quarter of women gave neutral answers to both the "recommended" and "inappropriate" items. Conversely, two-thirds (66.0%) of women students disagreed or strongly disagreed that their schools had either recommended Ms. or advised them it was inappropriate for them to use Ms. Apparently the class disputants were a specific group who had concretized their interpretation of their high school conversations, or they

perhaps merged them with religious or other traditional cultural beliefs, because in this further inspection over 90% of students were either neutral or disagreed with these propositions.

Repositioning Gender Identity and Labelling

The literature above spoke about generational change as not being a sell-out of feminist ideas and ideals despite concerns of leaving a collective project. The complex revising process for present-generation young women can be seen in contrasting student answers. How did individuals feel about using Ms. themselves, or wider Ms. usage? Table 2 shows age cohorts of women respondents. In broad terms, a third of responses for women under 29 years fall into each of the agreement (28.9%), neutral (33.7%), and disagreement (37.4%) categories. Is the neutral category a "Don't know" response, or is it covert avoidance of answering? If the larger proportion that would not use the title Ms. is read with the ambiguous neutral category, it appears likely more than half prefer not to use Ms. There is, however, a spectrum of responses rather than uniformity of views.

Personal preferences segue into opinions about other use of Ms. Would peers think using Ms. "uncool?" In the case of under-21 year students, only 13.8% agreed that they would, with the majority disagreeing (58.9%). Did students think their mothers "would be okay" using Ms.? The under-21 age cohort responded agree and strongly agree 35.8%, neutral 25.0%, and disagree 29.2%. Asked to estimate their mothers' attitudes to students' own use of the term, these young women felt free to agree more definitely (13.9% strongly agreed, and 43.1% agreed), with a third neutral and under 8.0% disagreeing. Thus, these students can discern a social space of permissible—even approved—use as a separate factor, distinct from their own inclination to do so.

Ms. and Older or New Feminisms

It appears that shifting generational cohorts have steadily reconstituted feminist ideas in relation to other cultural values and ideas. This makes age an important variable to consider, even when it may be contingent rather than constitutive in why and how such adaptation is occurring. One of the things apparent in the open comments below is some young women making clear associations between feminism and an older (mother) generation. Hence, positioned as young women who are newly adult, they feel it is not their "business" insofar as they inherit a world with significant legislative and other gender in/equality changes. That is, stereotypic representations of feminists in negative terms may stem

in part from the generational shift leading to avoiding activism on this issue.

Another partial reading is that care about using Ms. can also be understood as part of a wider backlash phenomenon, even if this, too, is changing and may not be expressed in the ways Faludi (1991) talked about it over two decades ago. For instance, responding to the contrasting item (paired with, "I associate it with today's feminism") about using Ms., "I associate it with old-style feminism," a fifth of under-21 women (19.5%) agreed or strongly agreed, half were less sure and checked a neutral response (52.8%), and just over a quarter disagreed—two of these strongly disagreed, a response no older age-group members selected. For this item then, as indeed of other items, it remains an open question whether there is a flight to neutral responses from a sharper item asking them to be definite in a way their generalized views have not been questioned before. Perhaps a sense of dismissal seems rather blunt to them as their response, so that retreating to neutral is less contentious or at odds with other values they hold such as the right for others to have different opinions.

Students were asked if they agreed or disagreed with the view that, "Professional women use it [Ms.]," and also whether they thought, "Professional women should use it." Half of under-21 year women (51.4%) agreed or strongly agreed that professional women use Ms., with a small core of 16.7% disagreeing. This proportion remained steady across age bands, dropping a few percentage points for women in their twenties. Only one woman under 21 strongly disagreed out of all women, and of the total of 14 who disagreed, only three were over 21 years. Adding the normative element "should" into the item—"Professional women should use it"—led to the contrasting agree and disagree responses; for the under-21 women cohort agreement dropped to 15.3%, and similarly for older ages. The disagreement categories collapsed the most, with over half of respondents (58.2%) avoiding the "should" about others' conduct, and choosing neutral.

Ms. Marking Marital Status

Two Likert items invited reactions about student perception of Ms. in relation to marital status: "Only divorced women should use it," and, "Single women can use it." All who agreed only divorced women should use Ms. were in their teens or twenties. At the other end of the opinion scale, about half of all women disagreed or strongly disagreed (25.5 and 19.4%) that Ms. should be only used by divorced women. Once more, these opposite opinions show plurality if not mobility in views, and again the one-third (33.7%) of women respondents selecting neutral suggests resistance or uncertainty about the normative "should" in the item to which they are being asked to respond,

Table 4
Themes in Students' Open Comment Views about Ms.

	Theme	Example
1.	Distance: lack of knowledge, or neutral	Don't even know what it is and how it differs from Miss. Don't have an opinion.
2.	Choice: individual or personal preference	It's the choice of the person. I think it is up to the individual; I don't have an opinion one way or the other.
3.	Marital status and identity	Ms. is used or should be used as a reference to a widowed or divorced wife distinguishing them from the title of Mrs. for a married woman who took her husband's name to a single female of Miss status. It may also be used for single women who are older than 25 years of age.
4.	Gender socialization	I only know it as a term for... I think it's used in older times. I think it is outdated and uncommon in today's society.
5.	Generational shift	I don't think people in my generation understand fully the difference that it holds from Mrs. and so it does not hold much importance to me.
6.	Synthesizing gender ideas	It is a valid term since women used to have titles based on whether they were married and therefore how they were linked to men. I don't usually use it as today I think "Miss" relates to being young, not single, but I don't really mind.

but about which they may have reflected relatively little. Three-quarters of women under 21 years affirmed single women can use Ms., two-thirds of women (65.3%) agreeing, and a further 9.3% strongly agreeing.

So this groups' overwhelming preference—even with distinct differing opinions among them—is to use Miss to show some combination of their own youth and single identity, they also affirm single women's right to use Ms. A small pocket of respondents disagreed: 8 of 9 of these were under 30 years, the solitary strong disagree respondent being under 21 years. How Ms. usage speaks to questions of disclosing, or not, partnered or married status is revisited in discussing the open-ended answers.

A final comment from the tabulated responses builds on reactions to the item, "On my values, it's a bad term." For both older and younger students, only 5.6% agreed or strongly agreed; no-one over 20 years strongly agreed. In contrast, about two-thirds of older and younger students disagreed, a higher proportion of older students more strongly disagreed. Here too, there are substantial neutral categories in student responses: nearly a third. Whether, when pushed to comment, limits to students' knowledge or opinions became apparent to them, or perhaps in some instances they avoided an actual answer in light of prevailing social norms such as respecting others' choices, cannot be determined here. The neutral responses, then, in considering these findings are significant even while they appear to soften the clarity of the data.

Findings 2: Student Open Question Themes about Ms.

Responses to the open question inviting student opinion about the use of Ms. are summarized here in Table 4 and Figures 1 and 2 and explored in terms of themes identified. Each of these themes is not a simple category, but involves the interplay of changing socio-cultural discourses of how gender is performed and labelled today. In this way these qualitative results deepen Findings 1 exploration. The numerical data are thus explicated, and potential lines of pedagogical action are identified.

Theme 1: Distance as Lack of Knowledge, Neutral Views

Two dozen comments either remarked on students' own lack of knowledge, e.g., "Don't quite see the relevance of title in the first instance. Ms. as relevant as any," or indifference or neutrality about the subject, e.g., "I think it is fine. I don't understand what it means exactly." Often these had a vaguely positive spin, e.g., "It has no real strong relevance to me. I don't believe it is inappropriate to use it," or a vaguely negative spin, "I have little opinion about Ms. I wouldn't use it myself, but I don't have a problem with others using it." Three comments claimed use of titles was not useful today. The association with age in these responses of lack of knowledge about Ms. are seen more fully than the above comments show with generational change below.

Figure 1
Theme of Choice in Students' Open Answer Responses

If you want to go by Ms., no one should stop you. It's entirely your choice. When you get older and are not married.

It's the choice of the person.

Personal/ individual decision.

It's your/my own choice on how and why you use the Ms.. But people will perceive the term regardless of your intent.

It's personal choice, not really a big deal. I don't connect it to feminism or anything.

What you are comfortable with you have the right to use as you see fit.

I think it is a personal thing. If you want to use it you do, if not, that's ok too.

It's just a choice, it means nothing to me as titles are rarely used.

I believe it depends on what women want themselves to be referred to as. I think if women want to use the title they can have it.

Ms. is a title used by females at their own choice. There shouldn't be rules as to why or how you can use the title Ms..

It's a very personal choice.

I don't really care; people can refer to themselves as whatever they like.

Whatever the female is comfortable with.

If someone is comfortable in using it as their title then why not.

Anyone can use this title. I don't see a restriction by peers, etc. I use it.

I find it rarely used but I have nothing against it and it comes down to personal choice.

It is, nevertheless, a part answer to the question of use and relevance to younger men and women of the title Ms. Clearly, if it was a personally important or pressing issue, many more of them would have developed specific ideas and reasons why, when, and how Ms. should be used or is appropriate than this general lack of viewpoint in being invited to engage with these questions. Their relative lack of sophistication, for some, showed in their unawareness of the use of common, even though not universal, use of Ms. in professional and corporate settings. Only three comments were made showing some knowledge of application of Ms.:

"Professional women use it—so they are not categorized as someone's wife." (Female, 21+)
"I was taught that Ms. was a title used by high-up, professional women and/or divorcees." (Male, 21+)
"Can be used as professional." (Male, <21)

Two of these comments refer to marital status and could also be placed in the final table. They are interesting in reflecting a wider contemporary usage than most in this student group identified.

Theme 2: Choice—Individual or Personal Preference

A second strong theme, again suggesting an underlying generational construction of attitude to and use of Ms., overlapped with lack of knowledge and general neutrality in responses (Figure 1). Almost the same number of responses, but from different students, emphasized that use of Ms. was an individual choice.

Is this change in personal titles half-accomplished, change resisted, or perhaps multiple strands of both? An interesting question that cannot be answered here is, how much displacement from the first theme is occurring here? It may be a socially acceptable response to not know, in case a response causes friction; it may reflect a more negative underlying view or indicate a preference for a more traditional view. However, at the same time these responses correspond to shifts in second-wave feminism from a collective project with political goals to individualized personal projects which Currie, Kelly and Pomerantz (2009), and others have identified with the neoliberal subject in this gendered   and   individualized   form

Figure 2
Students' Statements about Ms. and Marital Status

Women use it because they want people to know they are single and/or divorced

Seems fair, men don't have to reveal their marital status—why shouldn't women.

The title Ms. is good for women who do not want to disclose their marital status.

It is a way of not being prejudged for marital status.

The term is used to avoid any possible discrimination against a woman's marital status.

I have always considered it to be a way for me to not announce my relationship status or 'de facto use.'

That mostly women who were married but didn't want to use the title Mrs. used it.

In my opinion the use of Ms. is more formal than Miss, when I was younger I thought it was when a lady had a partner but was not yet married.

To use the title Ms. is to try and remove what relationship a person has in life, it is ok.

It is being able to express yourself more appropriately, not just as married or unmarried.

It's up to the individual, it means you're not married or don't wish to disclose this information.

It's acceptable to call a woman Ms. as it does not dig into her personal life.

I believe it's a personal choice. Some women may prefer to use "Ms." after being separated; some may choose to use "Miss'" or still use "Mrs." after being separated.

I have always believed "MS." is for divorced women—however it wouldn't bother me who used it—it's the woman's choice.

I believe it's a personal choice, although I relate it to divorced or widowed women.

Usually it is used for a divorced woman, or those who don't want their marital status disclosed which is reasonable.

Don't want people to know title or divorced/widowed.

I have always been taught it was for divorced women who wish not to specify the marital relation.

Divorced women use "Ms." when they have kept the last name.

I only know it's a term for divorced women who intend to keep their married name.

I always assumed it was only associated with divorced women.

I've always believed it was a term divorced or widowed people use as a sign of showing they're divorced or widowed, but never been sure.

I would think people would use it if they are single, divorced or widowed. Personally it's not a bad term.

The use of Ms. is used when a female does not wish to identify her marital status or is widowed or divorced.

I was always taught that you called a lady Ms. if they were divorced.

It is an older style term for someone addressed that is a widow or divorcee.

I typically was taught to use Ms. for a divorced woman.

Ms. is used by a woman who has been married or divorced, widowed.

From what I had been taught Ms. should be used for Divorced or Widowed women.

MS. is used or should be used as a reference to a widowed or divorced wife distinguishing them from the title of Mrs. for a married woman who took her husband's name to a single female of Miss status. It may also be used for single women who are older than 25 years of age.

I believe "Ms." should be used by widowed or divorced women, or married women choosing to keep their maiden name.

In my personal experience Ms. is only used by divorced or widowed women.

I've always been told it was for divorced women.

Theme 3: Marital Status and Identity

There is no simple conjunction between the use of Ms. and a particular gender/marital status positioning expressed in these student responses (Figure 2). The presence of a number of clear statements similar to those described in the opening paragraphs of this article do not, by that simple fact, mean this is the only or dominant view, as noted earlier. Again, however, the generational themes repeatedly come through in the content of the comments themselves, even before assessing these comments in terms of respondents' age or gender. A substantial number of comments were identified under this theme, and again it may help readers to see the raw responses showing similarities but also variations and nuances in how first-year students expressed their views about Ms.

These comments demonstrate a consolidation over a number of years of the usage of Ms. around divorce and separation rather than the original idea, also identified here, that Ms. should obscure marital status for women in the same way Mr. does for men. In Mannheim's generational terms (Stevenson, Everingham & Robinson, 2011), the cohort significance of the concept of Ms. in terms of evolving divorce, separation, and partnering patterns—then new experiences as widespread social phenomena—was an historic conjunction.

The symbolic attachment for Ms. to these older generations, when viewed today at a juncture several decades later by newly adult student cohorts, becomes much more explicable. Attitudes about feminism and Ms. ineluctably commingle with attitudes about generations and generational change. It is possible to see that when Australian divorce laws were relaxed in the 1970s, that still-new second-wave feminism offered a way of labelling oneself. Such titling contrasted traditional unequal gender categorizing on various ideologically or religious grounds. It also differed for people who did not have to ask this question of continuing relationships. Ms. thus became a different thread of challenging resistance to such social change, but not without links to the backlash Faludi (1991) described.

Theme 4: Gender Socialization

The generational dialectic just described interacts with other gender socialization patterns and expectations. Although this theme is not as explicit or developed as the others identified here, brief comment is useful in tracing the social learning mechanisms and broader reproduction of conventional gender role binaries. In Figure 2 quite a number of the comments are prefaced with comments such as: "I always assumed…," "I've always believed it was a term…," "I

was always taught that you called...," "I typically was taught to use Ms. for a divorced woman," and other similar phrases.

Most of the later quotations in Figure 2 use similar introductory phrases to qualify their understanding of Ms. usage, allowing that they might be mistaken. To observe this is not to say anything newly profound, but to restate the obvious fact that individuals learn their gender expectations and rules, as for other things in life, from families, peers, schools, and other socializing influences. Since these institutions are deeply embedded in the hybrid shifts that social change and generational cycles represent, the cultural significance of Ms. and surrounding gender labelling and expectations will draw on and try and reassert past rules, as well as at various points acquire new elements. Statements such as, "I've always believed...," can thus be read as expressing learned values, but also as acknowledging other ideas might be possible.

Theme 5: Generational Shift

The interleaved process of generational change does not, however, fully mask the sense among this group of students as mostly new emerging adults that they would not use Ms., because of generational meanings of Ms. in their eyes at present. This is not at this point in their lives a single universal view, but this generational positioning of Ms. usage is the clearest theme in these findings. It does not need to be universal to be significant in sociocultural terms or to have important consequences for how gender is approached as a topic for discussion in the classroom. In some ways this takes us back to the simplicity of Table 1: most women students under thirty use the term Miss.

Today, however, this is not the simple naming matrix of centuries ago about miss and master being the youthful matching binaries to Mrs. and Mr. This is an assertion of Miss in both its new strengths, and in potential negatives of re-inscription of gender inequalities. It occurs relative to recent reconstituted gender relations in society via legislative and discursive frameworks affecting many things such as marriage and divorce, reproduction, workplace, professions, and government. It is not helpful to construe it as simply an assertion of individual Girl Power or Third-Wave feminist gender self-identity, or rejection per se of feminism. These students draw on local and mediatized available discourses of gender politics, including contested shifts in all aspects of society and including gendered dimensions of cultural change.

Almost no comments identified the flow of time. However, here is one that did, from a woman in her thirties: "For me the use of Ms. became prevalent in the late 1990s. It was never explained what it meant, so I

used Miss. Not knowing the meaning, it still doesn't faze me." The vaguer references noted earlier suggest generally absorbing recent cultural framing and stereotypes. However, in contrast to this response from someone in her twenties or late teens in the 1990s, the bulk of this group of students aged around 18 years were born in 1993, becoming teenagers in 2005. They have nevertheless—or perhaps because of this—a distinct sense of difference from what feminism and the use of Ms. means to them in generational and discursive terms (Lawton et al., 2003).

These students have only a minimal sense of historical change, seeing feminism generationally and the use of Ms. in only their own generational terms. This is their historic theoretical framing of the issue, thus, "I think it is used in older times," from one, and from another, "I think the use of Ms. is completely fine. In my opinion it is just a title for a mature-aged woman who is not married or is independent. It shows female strength." Some, such as in the preceding comment, viewed use of Ms. positively, but others viewed it negatively, as in this comment: "It is old fashioned and irrelevant to use in today's society." If the term Ms. is not formally framed using words like "generational," this does not mean a lack of generational awareness.

Responses of younger women in this cohort articulate what they deem gender-appropriate usage of Ms. in terms of age and passage of generations. This appears almost entirely framed in perceived differences from older women to their own sense of identity. Specifically, many young women operationalize this as an age horizon on appropriate usage of Ms.: "Ms. is an inappropriate term for younger women to use," but, "For unmarried and single elders the term seems to be fairly fitting." From a late-teen perspective there is a definite age threshold: "I would find it strange if used by someone under 30," and in another instance having specified Ms. for older single women, the boundary line of Miss/Ms. is clear: "It [Ms.] may also be used for single women who are older than 25 years of age."

Theme 6: Synthesising Ideas

These responses are not unsophisticated—we do not want to over-claim on the evidence. The challenge of Pomerantz and Raby (2011) in their Canadian study of sixteen-year-old smart high-school women is that such people in fact have their own feminist or gendered nuances, paradoxes, and dangers with which they are dealing, just not the same, nor in the same format, as previous generations. If we are assuming that they have simply missed the point, then even more than our students we are locked into our own time-specific academic teacher cohort.

Quotations and evidence presented above draw from the whole body of responses to avoid making the data lean one way or another, and this helps avoid over-generalizing. Many of the comments show combinations of one or more idea with another, not in the same way or with the same valuation by students. By no means do all students think the same as the vocal group remonstrating with their class instructor in this article's introduction. It is not possible to fully summarize the variety of views, but it is useful to see responses are as much about age or generation as they are about feminism. For instance, this quite comprehensive comment identifies the key feminist contention, but then submits a generational reason for not using the term, distinguishing between "young" and "single," and concluding with normative neutrality:

It is a valid term since women used to have titles based on whether they were married and therefore how they were linked to men. I don't usually use it as today I think "Miss" relates to being young, not single, but I don't really mind.

This young woman respondent "gets" the initial feminist intent, but she also succinctly states that for her today preferring Miss to Ms. is about, "being young, not single." She also shows the de-politicized and individualized language of, "I don't really mind," of younger generations about gender. In the space available to write, she does not comment on the theme that many respondents wrote about, that Ms. is today their term for divorced or separated older women.

The responses thus show limitations—lack of understanding about professional roles, ignorance of the history of second-wave feminism and of Ms., the conflation of somewhat stereotyped negative views about feminism with an older age-grouping—but they also affirm a different set of understandings and conjunction of gender with terms surrounding gender discourse. Some of this may be a retreat from the insights of feminism, but some is simply occupying the space that feminism created in verbal protocols like Ms. and in activism more generally. As such it cannot be that their feminism, their doing gender, is the same as second-wave feminism. They live in a different time and set of opportunities. Sure, risks of gender recidivism are present and active in society, but understanding differences rather than judgment on the emerging generation has been our purpose here as reflective practitioners seeking ways to enhance our teaching and our students' best learning.

Final Reflections

The study shows generational shifts in this group of rural Australian students, but it does not confirm that widespread rejection of Ms. exists in this non-metropolitan cohort. Usages and preferences

surrounding Ms. emerged from second-wave feminism in the early stages of the movement, but with the passage of time these sit differently in a number of ways. As Woodward and Woodward (2009) observe, "The second wave, although sometimes characterized by oversimplification and over-enthusiasm, was marked by engagement with inextricable links between the personal and political, a key construction" (p. 3). Inevitably each generation develops its own understanding and expression. Giffort's (2001) study of empowering young women at rock music camps reshaped her intentional feminist agenda, developing the concept of "implicit feminism":

> I define implicit feminism as a strategy practiced by feminist activists within organizations that are operating in an anti- and postfeminist environment in which they conceal feminist identities and ideas while emphasizing the more socially acceptable angles of their efforts (p. 569).

For some this feels like a "sell-out," but it is essential to engage with students' current views: otherwise students are unwilling to "hear" or believe what is being said to them. This still begs fuller elaboration of what insights or viewpoints best achieve students' learning. This teaching challenge provided an opportunity to investigate and then reflect further on current teaching practice. The data does not reveal a distinct rural response in this cohort of rural and country-town students.

This reflective exercise shows the need to continually assess teaching strategies beyond urging the importance of second-wave feminism challenges to gender inequality, since this new generation barely understands the reconfiguration of which they are a part. Two specific pedagogical applications are identified arising from this exploration. The first is the possibility of using this short survey form, or a similar one, as an intentional class exercise around which to base student learning around. Student opinion, then, is grounded in the brief history of gender and Ms. usage. Extensions, such as getting students to observe forms of address used in various media for women and men, would make this engage with the contemporary working world. Second, we have begun innovating in other classes with thumbnail sketches of feminist history (lecture slides or hand-outs) as direct inputs for class discussion (rather than starting with unformed opinions), so students quickly learn about the contestations in second-wave feminism and gains made (and unfinished) in gender inequality. This is proving beneficial in removing blame for not somehow "holding the candle" for a previous generation but providing information on the dominant inequalities in earning, status, and right to control one's own body.

New generational attitudes towards Ms. of acceptance (professional titles) and resistance (young adult personal partnering) within ideas about gender and feminism in the present data and classroom invite continuing teacher experimentation. Doing so respects the insights of feminist challenge and also the resituated lives of a new generational cohort of undergraduate women students.

References

Atkins-Sayre, W. (2005). Naming women: The emergence of "MS." as a liberatory title. *Women and Language, 28*(1), 8-16.

Bock, B. B. (2014). Gender mainstreaming and rural development policy: The trivialisation of rural gender issues. *Gender, Place and Culture, 22*(5), 731-745. doi:10.1080/0966369X.2013.879105

Charles, C. E. (2010). Supergirl scorned: Lessons about young femininity in an Australian television satire. *Critical Studies in Education, 51*(3), 265-276. doi:10.1080/17508487.2010.508803

Crawford, M., Stark, A. C., & Renner, C. H. (1998). The meaning of Ms.: Social assimilation of a gender concept. *Psychology of Women Quarterly, 22*(2), 197-208. doi:10.1111/j.1471-6402.1998.tb00150.x

Currie, D. H., Kelly, D. M., & Pomerantz. S. (2009). *"Girl power": Girls reinventing girlhood*. New York, NY: Peter Lang.

Dion, K. L., & Cota, A. A. (1991). The MS. stereotype. *Psychology of Women Quarterly, 15*(3), 403-410. doi:10.1111/j.1471-6402.1991.tb00416.x

Donkersloot, R. (2011). Gendered and generational experiences of place and power in the rural Irish landscape. *Gender, Place and Culture, 19*(5), 578-599. doi:10.1080/0966369X.2011.610095

Faludi, S. (1991). *Backlash: The undeclared war against women*. London, UK: Chatto and Windus.

Feather, N. T., O'Driscoll, M. P., & Nagel, T. (1979). Conservatism, sex-typing, and the use of titles: Miss, Mrs., or Ms.? *European Journal of Social Psychology, 9*(4), 419-426. doi:10.1002/ejsp.2420090407.

Genz, S., & Brabon, B. A. (2009). *Postfeminism: Cultural texts and theories*. Edinburgh, UK: Edinburgh University Press.

Giffort, D. M. (2011). Show or tell? Feminist dilemmas and implicit feminism at girls' rock camp. *Gender and Society, 25*(5), 569-588. doi:10.1177/0891243211415978

Harris, A. (Ed.). (2004). *All about the girl: Culture, power and identity*. London, UK: Routledge.

Karlyn, K. R. (2011). *Unruly girls, unrepentant mothers: Redefining feminism on screen*. Austin, TX: University of Texas Press.

Kleinman, S., Copp, M., & Sandstrom, K. (2006). Making sexism visible: Birdcages, Martians, and pregnant men. *Teaching Sociology, 34*(2), 126-142. doi:10.1177/0092055X0603400203

Lawton, C. A., Blakemore, J. E., & Vartanian, L. R. (2003). The new meaning of MS.: Single, but too old for miss. *Psychology of Women Quarterly, 27*(3), 215-220. doi:10.1111/1471-6402.00101

Levine, E. (2011). *Review—*Unruly girls, unrepentant mothers: Redefining feminism on screen. *The Journal of American History, 98*(3), 912-912. doi:http://dx.doi.org/10.1093/jahist/jar395

McCabe, J. (2013). Making theory relevant: The gender attitude and belief inventory. *Teaching Sociology, 41*(3), 282-293. doi:10.1177/0092055x13480153

McRobbie, A. (2004). Post-feminism and popular culture. *Feminist Media Studies, 4*(3), 255-264. doi:10.1080/1468077042000309937

Pauwels, A. (1996). Feminist language planning and titles for women: Some crosslinguistic perspectives. In M. Hellinger & U. Ammon (Eds.), *Contrastive Sociolinguistics* (pp. 251-269). Berlin, DE: Mouton de Gruyter.

Pomerantz, S., & Raby, R. (2011). "Oh, she's so smart": Girls' complex engagements with post/feminist narratives of academic success. *Gender and Education, 23*(5), 549-564. doi:10.1080/09540253.2010.538014

Ringrose, J. (2007). Successful girls? Complicating post–feminist, neoliberal discourses of educational achievement and gender equality. *Gender and Education, 19*(4), 471-489. doi:10.1080/09540250701442666

Robinson, P. (2011). Mobilizing postfeminism: Young Australian women discuss *Sex and the City* and *Desperate Housewives*. *Continuum: Media and cultural studies, 25*(1), 111-124. doi:10.1080/10304312.2011.538469.

Spender, D. (1980). *Man-made language*. London, UK: Pandora Press.

Stevenson, D., Everingham, C., & Robinson, P. (2011). Choices and life chances: Feminism and the politics of generational change. *Social Politics, 18*(1), 125-145.

Symons, E. (2012, January 21). Madamoiselle, battlecry of the French feminist. *Weekend Australian Inquirer.* Retrieved from http://www.theaustralian.com.au/news/features/

Titus, J. J. (2000). Engaging student resistance to feminism: "How is this stuff going to make us better teachers?" *Gender and Education, 12*(1), 21-37. doi:10.1080/09540250020382

Woodward, K., & Woodward, S. (2009). *Why feminism matters: Feminism lost and found*. London, UK: Palgrave Macmillan.

_____

EDGAR A BURNS, PhD is sociology lecturer in the College of Arts, Social Sciences and Commerce at La Trobe University in Victoria, Australia. His current projects include a text on theorizing professions and an historical project on settler occupations in nineteenth century New Zealand. He regularly publishes or presents on reflective teaching and research methods.

IAN TULLOCH is an Honorary Associate in the College of Arts, Social Sciences and Commerce at La Trobe University in Victoria, Australia. His current project is a history of water politics of the vast Murray Darling Basin in Australia. He has taught politics and sociology over many years including environmental socio-political issues. He is regularly interviewed on local radio stations about Australian politics.

ARDEL SHAMSULLAH, PhD, has retired from teaching politics and sociology at La Trobe University, Victoria Australia. His specialist teaching area was Victorian state politics and processes when he was an active staff member of the School of Social Sciences for many years.

Incivility Between Students and Faculty in an Israeli College:
A Description of the Phenomenon

Dalit Yassour-Borochowitz
and Helena Desivillia
Emek Yezreel College

Incivility in the classroom is offensive, intimidating, or hostile behavior that interferes with students' ability to learn and instructors' ability to teach. The present study examined incivility in faculty-student relations and presents the findings of a survey conducted in an academic college in Israel. The study was designed to examine three specific objectives: (1) to expose and analyze the nature of behaviors that students and faculty view as incivility; (2) to identify contributory factors to uncivil interactions in the classroom as reported by students and faculty; and (3) to identify practical strategies suggested by students and faculty in order to avoid or diffuse such undesirable behaviors. We collected the data using the Incivility in Nursing Education (INE) questionnaire (Clark, 2008a, b). 46 faculty members and 268 students from various departments completed the questionnaire. We present the survey's qualitative findings in accordance with the three main objectives examined. The findings indicate considerable similarity between faculty and students in identifying uncivil behaviors and both agree that the main cause (although not the only one) lies in the penetration of norms from the external culture. Means of preventing and minimizing incivility in academia are discussed.

"These interactions between students and faculty are daily obnoxious incidents for both sides. Combine this with the stress and pressure to succeed – and you can see where it [incivility] *stems from"* (Student).

As faculty members for many years, we often found ourselves engaged in conversations with colleagues about the uncivil behaviors of students nowadays. As chairs of two departments for the past three years, we quite often had to attend to students' complaints regarding teachers' uncivil treatment of them. We believe that everyone in our position has found him- or herself in similar situations.

The present study examines faculty-student relations in an academic institution in Israel in the context of sweeping societal changes and a multicultural society.

The ramifications of a neo-liberal economy and ideology penetrate all organizations, including academic institutions (Clearly, Walter, Andrews & Jackson, 2013; Hollis, 2013). Like their counterparts in the business sphere, these organizations espouse a competitive orientation and contentious marketing strategies in their relations with other academic institutions in order to entice as many students to them as they can. At the same time, within academic institutions students are treated as clients purchasing educational services (Sedivy-Benton, Strohschen, Cavazos & Boden-McGill, 2015). Concurrently with attempts to respond to the call of providing high quality service, the faculty also attempt to maintain professional standards. Presumably, the organizational culture of a free market and consumerism evolving in academic institutions may mark faculty-student relations, with each party more motivated to pursue its own interests than in the past (Clearly et al., 2013; Goldberg, 2005; Hollis, 2013).

Incivility in Student-Faculty Relations

Incivility is a general term for social behavior lacking courtesy, consideration or good manners on a scale ranging from rudeness or lack of respect for elders to vandalism and hooliganism through public drunkenness and threatening behavior. The word "incivility" is derived from the Latin *incivilis*, meaning "not of a citizen." The distinction between plain rudeness and perceived incivility as a threat will depend on a notion of "civility" as inherent to society; incivility as anything more ominous than bad manners is therefore dependent on appeal to notions such as its contradiction to the complex concepts of civic virtue or civil society. Incivility has become a contemporary political issue in a number of countries (Merriam-Webster, 2004).

The last ten years have seen a growing body of research addressing student-teacher relations (Braxton & Bayer, 2004; Clark & Springer, 2007; Clearly et al.,2013; Hollis, 2013). We believe that exploration of faculty and students' experiences of incivility may encourage self-reflection on both sides and foster positive changes in a higher education setting. It can also promote better opportunities for both sides to recognize unacceptable behaviors and improve communication patterns.

Broadly defined, classroom incivility constitutes any action that interferes with a harmonious and cooperative learning atmosphere in the classroom. Uncivil student behavior not only disrupts and negatively affects the overall learning environment for students, but also contributes to instructors' stress and

discontent. Instructors' incivility might impair students' ability to learn; it may hurt the latter's feelings and create an atmosphere of discomfort and avoidance, and for some students it might cause emotional distress and fear. Generally speaking, incivility in the classroom is offensive, intimidating, or constitutes hostile behavior that interferes with students' ability to learn and with instructors' ability to teach (Tiberius & Flank, 1999).

Accounts of students' incivility toward faculty frequently emerge in staff meetings and professional journals, and an increasing body of literature focuses on this problem (e.g., Clark & Springer, 2007; Clearly et al., 2013; Schneider, 1998; Sedivy-Benton et al., 2015). However, addressing students' uncivil behavior is generally more common than addressing that of faculty. Nevertheless, it is no less important to devote attention to incivility perpetrated by faculty members because of its impact on the academic environment. Instances of such incivility might be showing up late for class, being unprepared, exhibiting boredom, turning a blind eye to students' rude and uncivil behavior, and so forth (Amada, 1994; Clark & Springer, 2007; Hanson, 2001).

Students' Incivility

Students' academic incivility has been described as any speech or action that disrupts the harmony of the teaching-learning setting (Feldman, 2001). Examples range from trivial behaviors, such as rude comments or noises, to threats or actual physical harm. What little has been written to date about students' perceptions of classroom incivility has been mostly anecdotal (Boice, 1996), discipline specific (Clark & Spring, 2007), or written by specific institutions for their internal distribution and use (Young, 2003). However, in his five-year study of classroom incivility, Boice (1996) found that it occurred in more than two-thirds of the classes he included in his study. Bjorklund and Rehling (2010) conducted what is perhaps the largest study of its kind (3,616 students at a Midwestern public university) on students' incivility. The study's results suggest that students experience a fair amount of moderately uncivil behavior in their classes on a regular basis. Similar findings are also described by Boysen (2012), and in Australia by Clearly and colleagues (2013).

The influence of students' incivility is severe. Luparell (2004; 2007) described these incivility behaviors toward faculty as resulting in persistent psychological damage, loss of sleep, and feelings of impaired self-worth. Other faculty members described them as the cause of self-doubt regarding their teaching abilities and as the cause of early retirement decisions. Reporting on his research findings, Appleby (1990) suggested that irritating and immature student behaviors "…pose a threat to the teaching/learning process because they are time-consuming and often prevent a teacher

from dealing with important materials and issues" (p. 42). What should not be overlooked are more intense encounters (e.g., verbal abuse, physical threats, intimidating remarks) which leave faculty members stunned and shaken (Hollis, 2013; Schneider, 1998).

Faculty Incivility

Faculty incivility is also a grave matter. For example, Thomas (2003) found that students are often distressed by the manner in which they are treated by some faculty members. She identified five major themes described by students as harmful: (1) perceived faculty unfairness or discrimination; (2) unreasonable expectations; (3) unexpected changes in classroom schedules; (4) being embarrassed and humiliated by faculty; and (5) being made to feel inept and ineffective. In a study conducted by Clark (2008b), students reported physical and psychological consequences as a result of perceived faculty incivility.

We contend that faculty and students' incivility is an important issue that affects both parties and therefore warrants attention. This paper presents the findings of a survey conducted in an academic college in Israel. The study was designed to examine three specific objectives: (1) to elucidate and analyze the nature of the behaviors which students and faculty view as incivility, (2) to identify contributory factors to uncivil interactions in the classroom as claimed by students and faculty; and (3) to discern practical strategies suggested by students and faculty in order to avoid or diffuse such undesirable behaviors.

Method

Participants

The survey was conducted among faculty members and students in all of the college departments. A total of 45 faculty members and 268 students from different departments completed the questionnaire. The students' (N=268) average age is 27; 85% are female and 15% male; 89% are Jewish, 7% are Palestinian, and 4% are Druze and Christian. Also, 85% were born in Israel, and 14% are immigrants. All of them are undergraduate students. The average age of the faculty members (N=46) is 48; 70% are female, and 30% are male; 96% are Jewish, and 4% are Palestinian; 73% were born in Israel, and 27% are immigrants. The average teaching experience is 7.09 years. The classes they teach are diverse: both introductory courses, workshops and elective courses.

The Research Tool

We employed the INE (Incivility in Nursing Education) questionnaire, which was developed and

revised by Clark and Springer (2007) who granted us permission to use it. Translation of the INE employed the "back translation" technique whereby the original translation is translated back into the source language by a blind, independent translator. The two versions are then compared and revised if necessary (Sperber, Devellis, & Boehlecke, 1994). The demographic details were adapted to the context of an Israeli college. Approval to conduct the study was obtained from the Institutional Research Ethics Review Board.

The questionnaire contains quantitative and qualitative items assessing incivility from the perspective of both students and faculty. The quantitative part of the questionnaire includes faculty and students' demographic data, their perceptions of incivility, and perceived frequency of uncivil behaviors. The qualitative part includes four open-ended questions designed to examine three issues: (1) perceptions of disrespectful displays, and what the respondents perceived as disrespect; (2) the causes of disrespectful and uncivil interaction between faculty and students; and (3) potential patterns of effective coping with incivility and how it can be mitigated.

Procedure

The researchers invited (via email) faculty from all the college departments to participate in the study and return the completed questionnaire anonymously to their mailbox. To further ensure anonymity, the questionnaire did not include departmental affiliation information. The researchers also asked faculty to distribute questionnaires to their students. Data collection took place in the spring semester of 2009. Participation in the survey was voluntary. The completed questionnaires from each class were placed in a large envelope and placed in the researchers' mailbox. A total of 46 faculty members and 268 students completed the questionnaire.

Data Analysis

The data this paper relies on are mainly the qualitative data that were constructed into themes and categories through simple content analysis. Representative quotes are presented to illustrate the theme.

The quantitative data are condensed and presented in Tables 1 and 2 to describe the scope of the participants' perceived frequency and severity of uncivil behaviors.

Findings

The survey's quantitative findings are presented in Tables 1 and 2, followed by the qualitative findings that are presented in accordance with the three main research objectives.

Combining the two measures—strength of disturbance of the uncivil behavior and its frequency—facilitates ranking uncivil behaviors from the most problematic (1) to the least. In order to obtain this combined measure, the result of "degree of the disturbance" was multiplied by "frequency of the disturbance" (tables which do not appear in the article). For convenience, the result was divided by 1000.

Table 1 shows that the most problematic uncivil behavior of students perceived by faculty is students holding conversations during a lesson. Additional noteworthy problematic uncivil behaviors are coming late to class, not being prepared for class, and the using cellphones during class.

Table 2 shows that the most problematic uncivil behavior of faculty perceived by the students is ignoring students' problematic behavior during a lesson. Additional noteworthy problematic uncivil behaviors are teaching using inefficient methods, and the degree of lecturers' unavailability to students' inquiries.

Manifestations of Disrespectful Behavior

The first issue the present study sought to examine addressed the ways whereby disrespectful behaviors were manifested in the faculty and students. In addition, this category of questions examined what each group perceives as disrespectful behavior, and how both groups perceive it.

Figure 1 presents separately what faculty and students perceive as disrespectful behaviors. As can be seen in figure 1 – there are many similarities in the ways students and faculty perceive manifestations of incivility by students. Students noted precisely the same behaviors stated by faculty members, and they even added the issue of complaints about assignments and lack of concern for cleanliness.

Despite the similarities, the issue of students displaying boredom (which was mentioned by faculty) was not perceived by the students as displaying disrespect toward the faculty, but in contrast, lecturers' boredom, their lack of preparation for class, the way content is conveyed, and late arrivals and early departures were perceived as displaying disrespect by faculty towards students.

Faculty being condescending.   Many students noted racist, provocative remarks, and expressing personal opinions as offensive and disrespectful:

- "When an opinion is expressed that affects the students, it would be better to refrain from doing so because it creates tension" (207);
- "Verbal attacks and strong views that not everybody agrees with, and it creates violence"   (130);

Table 1
Faculty Perceptions of the Problematic Nature of Each Uncivil Behavior Measured

Students' uncivil behavior	Combined measure	Problematic nature of the behavior
14 hold conversations	101	1
18 come late	86	2
21 are not prepared for the lesson	80	3
17 use their cell phone	74	4
13 are not focused on the lesson	73	5
19 leave early	67	6
9 seem bored	64	7
23 cheat on tests	62	8
10 groan	56	9
24 demand benefits and changes	55	10
20 do not attend lessons	54	11
12 sleep	48	12
11 making sarcastic remarks	43	11
22 create tension, take over	42	13
16 use a computer in the lesson	40	14
15 refuse to answer	30	15

Table 2
Students' Perceptions of the Problematic Nature of Each Uncivil Behaviour Measured

Faculty uncivil behavior	Combined measure	Problematic nature of the behavior
72 ignore the behavior	73	1
60 use inefficient methods	72	2
73 are not available	65	3
62 employ tough behavior	62	4
66 refuse to answer questions	62	5
59 refuse to allow examinations	60	6
65 are distant, inaccessible	59	7
54 come late	55	8
56 cancel activities	55	9
59 do not allow discussion	52	10
67 give subjective grades	52	11
69 display superiority	49	12
61 deviate from the syllabus	48	13
68 make humiliating remarks	48	14
63 give collective punishment	43	15
55 leave early	42	16
70 threaten with a fail grade	42	17
57 are not prepared for the activity	39	18
64 declare lack of interest	38	19
71 make rude gestures	36	20

- "Students and lecturers according provocative remarks about different [ethnic] communities and religions" (82).

Another issue that gained considerable attention as displaying disrespect pertains to the faculty's arrogant and condescending behaviors toward students:

- "In remarks to one another, lack of support and encouragement, unequal attitude toward people" (230);
- "Treating questions with derision, laughing at others' questions, talking about subjects that aren't connected to the lecture (faculty and students)" (110).

Lecturers not prepared for class. Students perceive this not just as bad practice but as an act of disrespect:

- "It is not only unprofessional but it is offensive when lecturers come to 'give' a course rather than teach" (284);
- "It's offensive when lecturers come unprepared for class, and that's what the lesson looks like, both on the part of the students and the lecturers, like when a lecturer is coming late, doesn't take the class seriously, and so forth" (285).

Ignoring students' needs; insensitivity. The faculty's disregard for the students and their problems is also perceived as disrespectful behavior. There is an expectation on the part of the students that faculty members should be more attentive to their problems, more flexible with the college's rules and regulations, take all their calls, and display a certain measure of friendliness:

- "Disregard, rigidly applying the rules of the college and not seeing the individual" (183);

- "Disregarding calls and requests, a cold and disdainful facial expression" (94);
- "A contributor to disrespect is that the lecturer is not always the students' friend" (69).

Lecturer boredom. This is also regarded as offensive:

- "I say – wake up! Don't fall asleep on us in the middle of class" (43)
- "There is no chance of us being enthusiastic if the lecturer is so damn bored with himself..." (12)

Lecturer being late. Some students mentioned this as a sign of disrespect:

- "When a lecturer is almost always late it gives the feeling that he disrespects us and our time" (67)
- "He says he is sorry he's late but you can feel he couldn't care less" (37).

Figure 1
Manifestations of Disrespectful Behavior
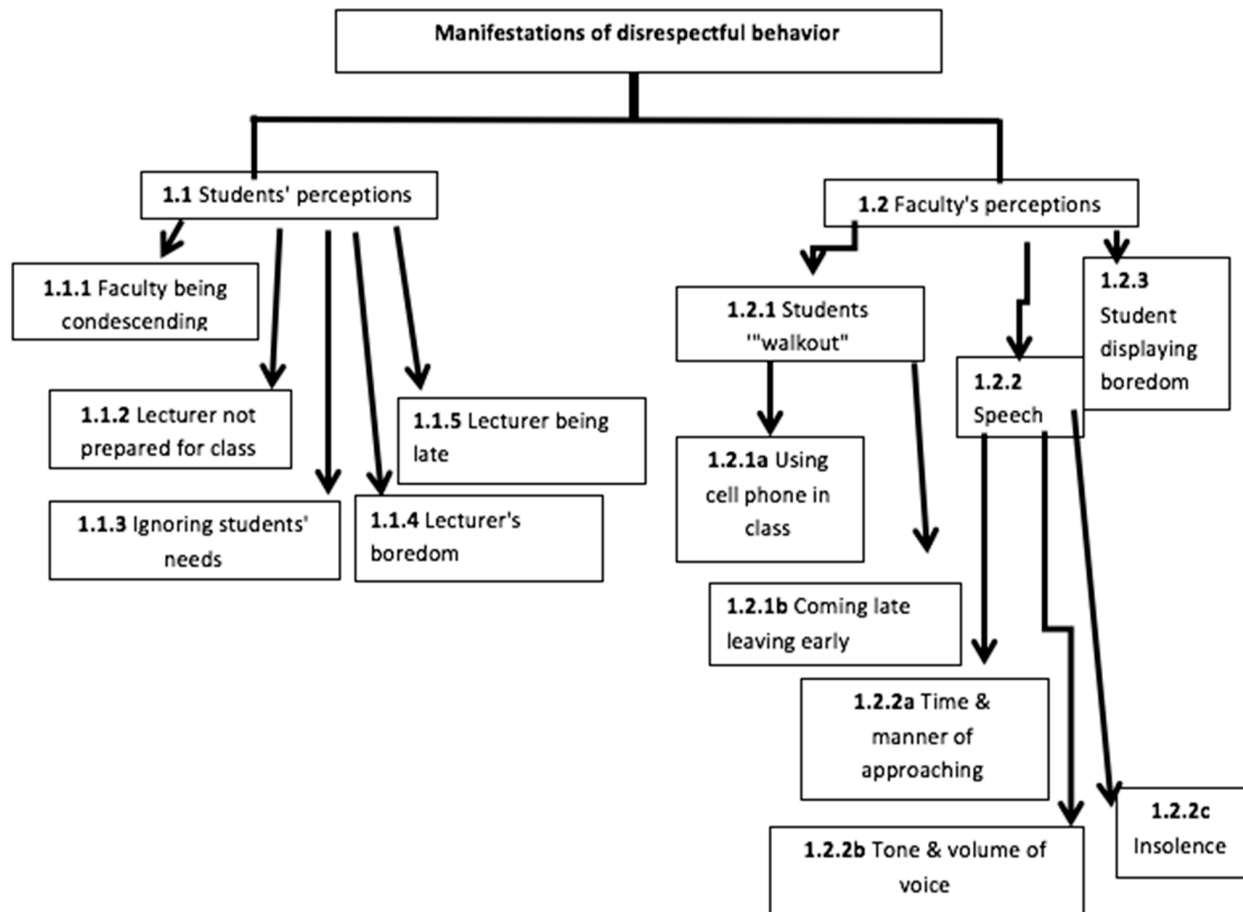
Faculty's perceptions on manifestations of incivility.

Students' walkabout. One focus of disrespect was defined as "walkabout" and general conduct during classes, and it includes coming in late or leaving early, going out to speak on the cellphone etc. As described by faculty:

- "The classroom is like a train station, [people] going out and coming in whenever they feel like it, eating and drinking during class, arriving when they feel like it, and all under the backing of the college's regulations" (32)

And as described by students:

- "Students don't come to classes on time, they're insolent, talk with friends while the lecturer is speaking, which is also offensive to the whole class and the lecturer himself (62);
- "Students who pack up their belongings before the lecturer has concluded his lecture" (285).

Faculty also commented on use of cellphones:

- "Students using cell phones, texting during lectures" (1);
- "Preoccupied with other matters during class, using cell phones" (43).

Disrespectful speech. Students' disrespect toward faculty is mainly manifested in manner of speech, a way of speaking that is perceived as inappropriate and disrespectful, and includes insolence, provocation, tone and volume of voice, and time and manner of approaching faculty members. Faculty note the following:

- "The way lecturers are addressed, when and how they are addressed is disrespectful" (15);
- "Manner of speech, tone of voice and volume. The content – insolence, provocation, and so forth" (19).

And students add:

- "Vulgar speech, disrespectful behavior, using cell phones, ignoring lecturers (73);
- "Being insolent, giggling, and talking in the middle of class, laughing at the lecturer, swearing, talking on the phone, interrupting the lecturer" (191).

Students displaying boredom. A third kind of uncivil behavior is described as "students displaying boredom," as described by faculty:

- "Disruptions during class, insufficiently serious attitude toward the studied material, no willingness to make an effort" (38);
- "Displays of boredom, sleeping during class, conversations during class" (28).

Causes of Disrespect

The data reveal considerable similarity between faculty and students' perceptions with regard to the causes of disrespect. Figure 2 illustrates the reasons for disrespect as explained by the study's participants. As Figure 2 shows – both faculty and students share the same explanations regarding disrespectful behaviors.

Faculty's attitude of overlooking it and/or not punishing it. One explanation for incivility that was raised with high intensity by faculty members and students attributes the phenomenon to the faculty's soft-handedness, namely, not confronting the problem. To a certain degree there appears to be a demand by students and faculty alike for greater firmness in confronting displays of disrespect toward faculty and students. Students said:

- "At the college, the main problem is that too few lecturers are prepared to deal with it, and mostly disregard it" (231);
- "There are a lot of threats that aren't followed through, for example a lecturer who says he'll remove [the student] from the classroom, and perhaps it would be preferable if he did" (106);
- "They've become used to treating the faculty like that, and haven't received a response that'll prevent them from treating them like that" (244).

Faculty members added: "The main reason, in my view, that the phenomenon exists is the faculty's attitude of not treating the issue of respect seriously, overlooking it, not punishing it" (43).

The issue of vague boundaries between what is and is not permissible was also raised with regard to failing to confront the problem. Students stated:

- "Leniency creates vagueness – students and faculty face a problem because authority relations are unclear; it isn't clear who is above whom" (256);
- "Perhaps there isn't sufficient boundary clarity and about the framework we're in" (195).

Faculty members claimed:

- "Greater flexibility that gives a sense that 'you can,' and sometimes unjustifiable leniency and

Figure 2
Causes of Disrespect
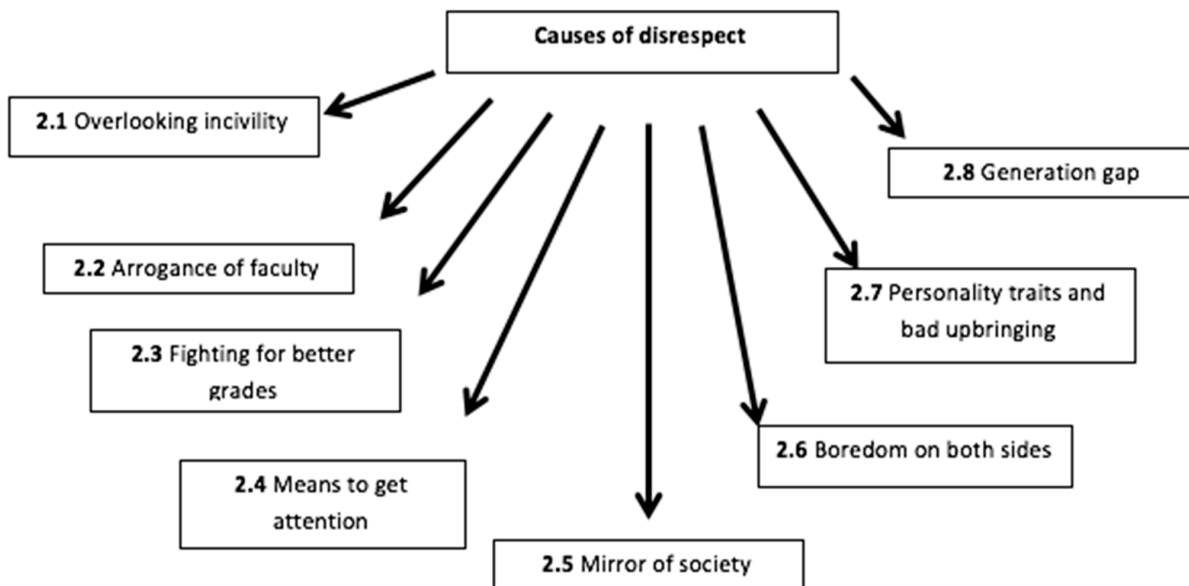
blurring of the clear boundaries and the permissible/not permissible" (25);

- "That academic behavioral norms are not set and anomalous phenomena are not confronted from the first semester of the first year" (1).

Arrogance on the part of the lecturers. A subject that was mainly raised by students, but was also mentioned by faculty members as a cause for disrespect, is the arrogance of the faculty. Many students stated that they feel that faculty members are condescending and abuse their power or discriminate unjustly between students:

- "It seems that in academe there is a feeling of superiority of the academic faculty, so there's a kind of superiority and exploitation of the hierarchy" (69);
- "There's a phenomenon of arrogance on the part of the lecturers" (297);
- "Because some lecturers look at you disparagingly and yell for no reason" (124); "Faculty – a situation in which they exploit their position of power against the students" (101).

This is referred to weakly by the faculty:

- "Faculty – mainly as a reaction to disrespect on the part of the students, but also as exploitation

of their power and authority in the absence of tools for contending with conflict" (39);

- "Lecturers – from a condescending position" (17).

"Students for grades." A common issue raised both by faculty members and especially by students attributes displays of disrespect to the pressure experienced by students due to their desire to gain achievements that are expressed in grades:

- "There's an atmosphere of studying only for grades, so it's permissible and even necessary to argue about the grade, especially for assignments" (32);
- "Because it's frequently perceived as a 'factory' for grades and people only care about the grade itself and not about the studied subjects" (110).

The students attribute disrespectful behavior toward the faculty to pressure as well: "Lecturers are under pressure to be successful in their work, students are under pressure to succeed and achieve good grades" (51).

"He wants to be the king of the class." This means to get attention. Some faculty members and students interpret displays of disrespect, both toward faculty members and toward other students, as the student's attempt to "seize" status and standing in the

group; disrespect as a way of standing out among other group members:

- "Some people think that they have greater value and that they'll be looked at differently if they behave in a way that might defeat and humiliate others. The disrespect actually stems from a desire to appear strong" (247);
- "Because of his upbringing and the environment he lives in, or that he's a racist, and by showing disrespect he shows it, or he wants to be the king of the class and shows who's in control" (153).

Faculty members stated, "Some kind of need to stand out (8); Latent power struggles" (16) .

"The college is a 'mirror' of society as a whole." As demonstrated in the above quotation, both faculty members and students consider the college a reflection of general society outside academe. The decline of the general educational system, the admiration for money and materiality over broad intellectual knowledge and the "rating culture" – all are considered to infiltrate academia. The seclusion of academe from other organizations has been breached, and thus behaviors prevailing outside have penetrated its "walls." Students described it as follows :

- "The violent social environment in Israel is manifested in reality as well. Students and faculty do not draw a distinction and don't behave differently at the college" (73);
- "Everyday behavior is penetrating academe" (99).
- "People don't want to learn, they want success and money. Preferably quickly" (57).

Faculty members similarly stated: "As part of a process Israeli society as a whole is undergoing, there is a decline in education and values, including respect for others" (27) .

Faculty members also mention the client-oriented culture and consumer entitlement: "I've paid, so I'm entitled":

- "The view whereby "I've paid money" so "I'm entitled to everything" (30);
- "The students are under the impression that since they are paying they are entitled to complain about a lecturer" (32).

"Wake up! Don't fall asleep while you teach!" Another issue that was raised quite strongly as a cause of disrespectful behavior by faculty members and students alike was boredom and lack of interest.

Students speak mainly about boredom with the content of the studied material and the way it is conveyed. Faculty members speak mainly about contempt for the profession and the students' lack of interest in studying. For example, faculty state the following:

- "Mainly boredom and a desire to invest as little effort as possible in studying while getting the best possible grade" (28);
- "Lack of interest in the studied subject. Studying as a burden – you have to get a BA socially, but it isn't really interesting and they don't want to make an effort" (30).

Students also attribute a central role to boredom in disrespectful behavior, but the emphasis is on the faculty that causes this boredom: "The faculty use teaching methods today that are not effective and not relevant and are outdated, they're not interested and only teach because they have to, which the students feel and it creates disrespect toward them. By contrast, a lecturer who makes an effort and teaches out of interest and respect for diversity – you can see a great deal of respect" (149) .

"It stems from the personality of the particular individual."   A different opinion regarding the source of disrespectful behavior shared by faculty members and students attributes the phenomenon to the individual's psychological and personality traits. Some holding these opinion associate displays of disrespect with a trigger, a cause, while others do not associate the behavior with an external factor, as articulated by faculty members and students: "In my view it stems from the students' character traits and their frustration that they have difficulties in academe" (215) .

Faculty members added :

- "The students behave disrespectfully because they feel threatened by the material, frustrated with difficulties that aren't necessarily connectedto the lesson or the lecturer" (43);
- "From lack of self-confidence" (8);
- "Due to feelings of inferiority" (39) .

This is combined, or stems from, "Bad upbringing at home, living environment, gaps in society." A considerable proportion of faculty members and students (see Tables 1 and 2) attribute displays of disrespect to improper upbringing. It appears that in their view this is not an overarching social phenomenon, but the outcome of improper education. Students describe it as follows:

- "Maybe I'm naïve, but it stems from upbringing at home" (172);

- "It might come from family outlook, a bad family background" (206).

The statements of faculty members and students alike indicate that the source of disrespect is extraneous to the college and penetrates it, either as a sweeping social phenomenon or as one that is dependent upon the student's specific environmental background.

"Generation gap." A small number of faculty members stated that in their opinion there is also a generation gap effect, that what faculty members perceive as disrespect is not perceived as such by students. The generation gap is described in terms of talking style, of over-familiarity, and as a result of different behavior-codes (especially regarding mobile-phones use):

- "It seems to me that one of the problems stemming from the generation gap is that what I perceive as insolence or rudeness, isn't perceived as such by the students. Not because of the different roles, but because of different generations" (41);
- "For the students talking to you and at the same time texting SMS is not offensive, but for me it is! I suppose it's the generation gap…" (38).

Ways of Successfully Contending with Incivility

The third question examined the perceptions of faculty members and students regarding potentially effective ways to engage with the problem; what, in their view, should be done to mitigate disrespect between faculty and students, and disrespect among peer-students. Examination of the survey responses shows that both groups hold a variety of similar views that can be presented as a sequence, from common activities of communication, dialogue and discourse , to employing a heavy-handed sanctions and uncompromising approach.

In figure 3 you can see the means of contending with incivility as suggested by students and faculty alike. We have arranged them on a "scale" moving from dialogic means to disciplinary sanctions.

"*Have relatively open communication*" – a joint, mutually binding code of conduct. A few lecturers noted that in order to overcome the phenomenon of disrespect, it is necessary to collaborate with the students on formulating a code of conduct, writing a code of ethics—clear rules—on how a faculty-student encounter is conducted, and ensuring that this code is distributed to all students. From the students there were calls for dialogue and discourse. Faculty note:

- "It is necessary to create together with the students principles and an acceptable

behavioral framework between lecturers and students" (1);
- "Collaboration in constructing a clear code of ethics" (5);
- "Rules, regulations that will be written and available" (29).

Students note: "Listen to one another, have relatively open communication, not violent, but in a positive, quiet way" (134).

A few students also noted that a third, neutral party should be included in the discourse as a mediating or arbitrating factor in the event that disagreements emerge.

- "Talk and discuss disputed issues, create an arbitration mechanism in the event that the two parties cannot reach agreement independently" (291);
- "An independent entity that will listen to the remarks of the students and those of the faculty as well" (101).

"Imposing sanctions on the perpetrator." As opposed to the call for discourse and dialogue and creating agreement, many faculty members and students feel that a clear, rigorous, and unequivocal response by the college is the means to improve the situation. Among the things they note are a rigorous and unequivocal response from the faculty, department heads, and college institutions charged with such matters, to the extent of preventing offending students from completing their studies. Additionally, a recommendation was also made to publicize extreme cases in order to create a deterrent effect ("naming and shaming").

Faculty noted:

- "A rigorous, unequivocal response by the college [by department heads and the disciplinary committee] is likely to be effective" (33);
- "Publicizing examples of cases that have been addressed, as a deterrent" (29);
- "The college can use a firmer hand in addressing problems of disrespect, for example suspension in cases of recurring insolence" (38).

Students:

- "Severe punishments, to the extent of canceling a degree or delaying it" (236);
- "Use punishment as a deterrent!" (212).

Other students expect the faculty to respond more decisively and firmly and not to allow students to

Figure 3
Ways of Contending With Incivility
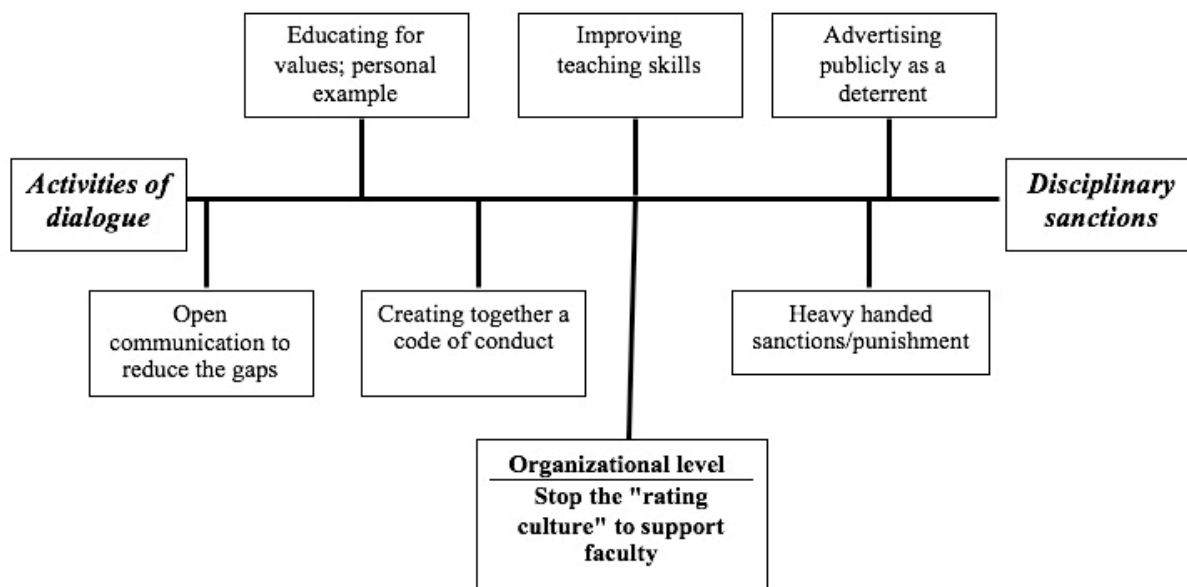
behave disrespectfully: "Adopt a stronger hand, for the lecturers to know how to handle it and not let students make remarks over and over again" (106).

"Education, personal example." Some (albeit very few) lecturers believe that change can be achieved by educating for values, and the faculty setting a personal example while creating greater interest in classes.

- "Good personal example. Treating the students with respect" (24);
- "Educating for values" (7).

A few voices were also heard among the students who believe that personal example can be beneficial:

- "The faculty has no right to express disrespect, even if it comes in the form of impatience with students' questions. They have an obligation and a binding position not to show or express any disrespect or any personal opinion about anyone" (230);
- "Set a personal example!" (57).

Action on the Organizational Level to Improve the Situation

Organizational action. A few faculty members noted that action should be taken on the organizational level. The belief is that organizational culture is dictated to one degree or another by the institution and its administrators. In order to create change they believe that the individualistic and bureaucratic culture at the college needs to be changed, greater support provided to lecturers, and the end of semester "ratings" feedback stopped since it deters lecturers from acting more strictly. On the organizational level there is also mention of holding workshops on the subject and periodic meetings to air feelings.

- "Support for lecturers" (11);
- "It needs to be understood that the organizational environment in which we live and work doesn't come into being just like that, but is the product of our construction, we create it and can influence it – but it requires behavior that runs counter to the bureaucratic and individual culture of the institution, and higher education in general" (20);
- "There's a 'ratings' situation as well, so if we're tough they'll 'stick it' to the faculty in the feedback at the end of the semester" (30);
- "At the start of each first year of study people should attend a workshop on the subject" (32).

"Make studying more interesting and meaningful." Another possible course of action that was raised by students pertains to creating greater interest in the studies:

- "Make studying more interesting and meaningfully and address anyone whose disrespect has an adverse effect on his learning environment as well" (76);
- Wake up! Don't fall asleep while you teach!" (255).

"Spread more information about respect." An original idea raised by students pertains to advancing the idea and awareness of the subject at the college:

- "Spread more information about respect with films, advertisements, lectures, and even mandatory courses" (242);
- "Greater emphasis should be placed on raising awareness on the subject of respect in an academic setting, among students and lecturers [faculty] alike" (251);
- "Open a mandatory course that teaches what respect toward people means! Nowadays people are no longer aware of the disrespect that's so deeply rooted in our country" (300).

Summary of Findings

Disrespectful behaviors. We have noticed that our findings indicate a considerable similarity between faculty and students' perception of the term "disrespectful behavior." The similarities pertain to behaviors such as lack of punctuality, manner of speech, use of cell phones, and arrogance. Displaying lack of interest and boredom are also perceived by both groups as indications of disrespect, but in this instance, each group perceives the other as being afflicted with lack of interest and boredom.

Notwithstanding the similarities, differences in perceptions of the two groups were also found, especially in the students' perceptions of the faculty's behavior as arrogant. The college's code of conduct and maintaining status differences between lecturer and student are possibly perceived by the faculty as essential and proper behavior, while students interpret them as arrogance and condescension. Another disparity in faculty and students' perceptions was evident in students' expectations regarding a lecturer's availability, considering its paucity as displaying disrespect by a faculty member.

Integration of the quantitative and qualitative data shows that for lecturers the most problematic phenomena in students' behaviors are talking and using cell phones during lectures. Additionally, the faculty's questionnaires indicate the issues they perceive as problematic in their own behaviors. In this instance too, there is congruence between the qualitative and quantitative data. Faculty members note the issue of arriving late, employment of ineffective teaching methods, and rigid conduct as causes that impair proper relations between faculty and students.

Furthermore, the issue of faculty ignoring unacceptable student behaviors was also supported by the quantitative data. Faculty members are aware of this phenomenon and its negative implications for their relationship with the students, and they yet do not take action.

Causes for incivility. It can be stated that faculty and students are in agreement regarding the causes of disrespectful behaviors, and the main reasons are the penetration of incivility from the external environment, notably Israeli culture, into academe. Another source of incivility stems from the faculty's reluctance to engage with the problem, thereby allowing its continuation. Also noted were causes that foster mutual disrespect. Students indicated that faculty members behave arrogantly and convey the studied material in a boring manner, while faculty members claimed that students have no desire to learn, but are only interested in completing their studies with minimum effort.

Ways of addressing incivility. The ways that were proposed by faculty and students are varied and diverse, revealing a great deal of similarity in faculty's and students' perceptions. In both groups there are those who advocate "soft" approaches (cooperation, dialogue, education, workshops, creating a joint code of conduct), but at the same time loud voices are heard from both groups calling for assertive, unequivocal, and uncompromising action against those who behave inappropriately. Additionally, some faculty members direct attention to the organizational culture that to some degree supports and perpetuates the phenomenon or does not enable the faculty to address the matter properly or positively. There is also a call for publicity: for putting the issue on the agenda, talking about it, holding workshops, introducing content on the subject as part of the college curriculum. There are also calls for publicizing actual cases including the outcome of action taken against people who behave unacceptably. Education was also mentioned as a way of addressing the issue, but on a very limited level.

Conclusion

The purpose of this study was to obtain a heightened understanding of incivility: its manifestations, its causes and what faculty and students think should be done to minimize it. The voices described in this article come from a specific cultural environment: an academic college in Israel. However, the phenomenon it describes is very commonly talked about both in educational institutions around the world (Boice, 1996; Boysen, 2012; Clark, 2008a; Clark, 2013;

Gonzales & Lopez, 2001) in particular, and in workplaces in general. The organizational culture of a free market and consumerism evolving in academic institutions indeed seems to mark faculty-student relations, with each party more motivated to pursue its own interests than in the past (Goldberg, 2005). This is true in most Western countries (Hollis, 2013; Sedivy-Benton et al., 2015), and it is true in Israeli society which has changed from unity to segmentation and from socialist solidarity to neo-liberal ruthless competitive ideology in the past thirty years (Rosen & Amir, 2003). Rather than seeing themselves as one community that pursues knowledge – this perception presents two groups with different, and sometimes even opposite, interests: many students want to "purchase" the degree merely to thrive in the competitive labor market, whereas the faculty want to engage them in the material, teach them critical thinking skills and maintain academic culture as they perceive it.

The participants—faculty and students alike—spoke about the emotional stress created by incivility in a place where openness and respectful relations are expected. They describe the everyday impact of incivility on their ability to perform their tasks to the best of their abilities. In fact, it seems that both parties wish to re-constitute the academic community as one community, if only for practical reasons: to be able to perform their errands better. Consequently, most of them suggested means to minimize incivility which involve some kind of an open dialogue between students, faculty, and administration, such as creating forums for mutual dialogues, allowing for different opinions and cultural diversity both in class interactions and the curriculum, encouraging and setting a personal example—by students and faculty alike—of a respectful discourse, transparency and fairness regarding grades (faculty's responsibility), and of teachers' ranking (students' responsibility). All these means were prescribed to foster better relations and prevent (or rather minimize) incivility (Braxton & Bayer, 2004; Clark, 2008a; Fuller, 2006; Morrissette, 2001). These findings actually suggest fostering a stronger sense of community in academia in order "to fend off" the social and cultural incivility that penetrated academia. They suggested forums of students and faculty where they can discuss and generate solutions for incivility, as well as actual courses about civil behavior and respect. However, when incivility does occur, some of the participants called for a firmer reaction and for punishment in order to clearly set the norms and for faculty to actually addressing the subject rather than ignoring it. All of the participants rejected the present situation in which the phenomenon is not addressed and treated.

The present study is limited since it was conducted in one academic setting only and in a specific country –

Israel. Despite these limitations, this study adds to a growing body of literature regarding the severe impact of incivility in organizations in general (Anderson & Pearson, 1999; Porath & Erez, 2009) and its particular impediments in educational settings (Bjorklund & Rehling, 2010; Boice, 1996; Boysen, 2012; Cassell, 2013; Clark, 2013; Sedivy-Benton et al., 2015). We hope that this study will have a strategic impact for faculty and management of higher education. Based on these findings it is clear that identification and prevention of incivility in academia is within reach, and it can be minimized if both faculty' students and management will adopt rigorous as well as sensitive means to eliminate it.

References

Amada, G. (1994). *Coping with the disruptive college student: A practical model*. Ashville, NC: College Administration Publishers.

Anderson, L. M., & Pearson, C. M. (1999). Tit for tat? The spiraling effect of incivility in the workplace. *Academy of Management Review, 24*(3), 452-471.

Appleby, D. (1990). Faculty and student perceptions of irritating behaviors in the college classroom. *Journal of Staff, Program, and Organization Development, 8*, 41-46.

Bjorklund, W. L., & Rehling, D. L. (2010). Student perceptions of classroom incivility. *College Teaching, 58*, 15-18. doi:10.1080/87567550903252801.

Boice, B. (1996). Classroom incivilities. *Research in Higher Education, 37*, 453-486.

Boysen, G. A. (2012). Teachers' responses to bias in the classroom: How response type and situational factors affect student perceptions. *Journal of Applied Social Psychology, 42*, 506-534. doi:10.1111/j.1559-1816.2011.00784.x.

Braxton, J. M., & Bayer, A. E (2004). Addressing faculty and students' classroom improprieties. *New Directions for Teaching and Leaning, 99*, 89-95.

Cassell, M. A. (2011). Bullying in academe: Prevalent, significant and incessant. *Contemporary Issues in Education Research, 4*(5), 33-44.

Clark, C. M. (2008a). Students' perspectives on incivility in nursing education: An application of the concept of rankism. *Nursing Outlook, 56*(1), 4-8.

Clark, C. M. (2008b). Faculty and students' assessment and experience with incivility in nursing education. *Journal of Nursing Education, 47*(10), 458-465.

Clark, C. M. (2013). *Creating and sustaining civility in nursing education*. Indianapolis, IN: Sigma Theta Tau International.

Clark, C. M., & Springer, P. J. (2007). Incivility in nursing education: A descriptive study of definitions and prevalence. *Journal of Nursing Education, 46*(1), 7-14.

Clearly, M., Walter, G., Andrews, S. & Jackson, D. (2013). Negative workplace behaviors at the University of Hard Knocks. *Contemporary Nurse: A Journal for the Australian Nursing Profession, 44*(2), 253-256.

Feldman, L. J. (2001). Classroom incivility is another of our instructor responsibilities. *College Teaching, 49*(4), 137-140.

Fuller, R. W. (2006). *All rise: Somebodies, nobodies and the politics of dignity*. San Francisco, CA: Berrett-Koehler Publishers.

Goldberg, D. T. (2005). "Killing me softly": Civility/race/violence. *The Review of Education, Pedagogy and Cultural Studies, 27*, 337-366.

Gonzales, V., & Lopez, E. (2001). The age of incivility: Countering disruptive behavior in the classroom. *AAHE Bulletin, 55*(8), 3-6.

Hanson, F. (2001). Classroom incivility: Management practices in large lecture courses. *Dissertation Abstracts International, 61*, 2618.

Hollis, L. P. (2013). *Bullying in the ivory tower: How aggression and incivility eroded American higher education*. USA: Patricia Berkly.

Luparell, S. (2004). Faculty encounters with uncivil nursing students: An overview. *Journal of Professional Nursing, 20*(1), 59-67.

Luparell, S. (2007). The effects of students' incivility on nursing faculty. *Journal of Nursing Education, 46*(1), 15-19.

Merriam-Webster online dictionary (11th ed.) (2004). Retrieved from http://www.m-w.com/dictionary/incivility.

Morrissette, P. J. (2001). Reducing incivility in the university/college classroom. *International Electronic Journal for Leadership in Learning, 5*(4). Retrieved from http://iejll.journalhosting.ucalgary.ca/iejll/index.php/ijll/article/view/497

Porath, C. L., & Erez, A. (2009) Overlooked but not untouched: How incivility reduces onlookers' performance on routine and creative tasks. *Organizational Behavior and Human Decision Processes*, *109*, 29-44.

Rosen, L. & Amir, R. (2003). The open society and its enemies: Changing public discourse in Israel. In L. Z. Eisenberg, N. Caplan, N. B. Sokoloff & M. Abu-Nimer (Eds.). *Traditions and transitions in Israel studies* (pp. 159-181). Albany, NY: State University of New York Press.

Schneider, A. (1998). Insubordination and intimidation signal the end of decorum in many classrooms. *The Chronicle of Higher Education*, *44*(29) A12-A14.

Sedivy-Benton, A., Strohschen, G., Cavazos, M. A. & Boden-McGill, C. (2015). Good ol' boys, mean girls, and tyrants: A phenomenological study of the lived experiences and survival strategies of bullied women adult educators. *Adult Learning, 26*(1), 35-41.

Sperber, A. D., Devellis, R. F., & Boehlecke, B. (1994). Cross-cultural translation methodology and validation. *Journal of Cross-Cultural Psychology, 25*(4), 501-524.

Thomas, S. P. (2003). Handling anger in the teacher-student relationship. *Nursing Education Perspectives, 24*(1), 17-24.

Tiberius, R. G., & Flank, E. (1999). Incivility in dyadic teaching and learning. *New Directions for Teaching and Learning, 77*, 3-12.

Young, J. (2003). Sssshhh. We're taking notes here. *Chronicle of Higher Education, 49*(48), A29-A30.

_____

DALIT YASSOUR-BOROCHOWITZ is the head of the Criminology Department and an associate professor in the Human Services department in Emek Yezreel College, Israel. A social worker by profession and a feminist researcher, she teaches and study issues of gender, violence against women and ethics. She has published several articles in different israeli and international journals and a book titled "Intimate violence – the emotional world of batterers".

HELENA DESIVILYA SYNA is an associate professor of social and organizational psychology, currently the chair of MA studies department in Organizational Development and Consulting at the Max Stern Yezreel Valley College. She conducts research on social conflict, organizational behavior and diversity management in organizations and communities. She has published articles in international peer reviewed journals, book chapters, and edited 2 books: *A paradox in partnerships: the role of conflict in partnership building* and recently *Women's Voices in Management: Identifying Innovative and Responsible Solutions* published by Palgrave Macmillan. She is a member of editorial boards in *Conflict Resolution Quarterly, International Journal of Conflict Management, Negotiation and Conflict Management Research and EuroMed Journal of Business*.

Students Knowledge Progression: Sustainable Learning in Higher Education

Airi Rovio-Johansson
University of Gothenburg

The purpose of this phenomenographic study is to examine students' knowledge progression in a three-year Bachelor program in Business Administration. Theoretical sampling was used to select nine students from a group of 200 university students admitted to the program. The students were interviewed on three occasions: Year 1, after their Management Accounting course; Year 2, after their Financial Accounting course; and Year 3, after they had written their thesis. The interviews focused on the same financial concept presented in various ways, with increasing complexity, in each of the three years. This longitudinal study analyses the students' knowledge progress in terms of sustainable learning. The findings reveal that knowledge progression was very good by the end the program for one-half of the students; one-third of the students did not achieve satisfactory knowledge progression. The study's research methods and its findings contribute to education and international studies on students' sustainable learning in higher education. The study suggests a model for future research in ascertaining how higher education students learn as well as in examining issues and areas for further research and development.

An issue of great concern in education at present is the widening gap between classroom teaching and classroom research. In addressing this issue, a number of researchers have offered solutions intended to bridge that gap. Nuthall (2004), for example, has called for more research linked directly to classroom realities. He points to the need to realize "that the teacher requires an explanatory theory of how different ways of managing the classroom and creating activities are related to student learning outcomes" (p. 274). Other researchers call attention to the research on didactics that focuses on engaging students and teachers at all compulsory school levels (Fensham, 2009; Holmqvist, 2006, 2011; Kullberg, 2010; Maunula, Magnusson, & Echevarria, 2011; Mårtensson, 2015; Runesson, 2006; Vikström, 2014). Still other researchers think the focus should be research on students´ achievements on national tests because of the importance of international and global assessments of student learning (Jacobsson, Davidsson, Karlsson, & Oskarsson, 2013; Jerrim & Micklewright, 2014; Lundgren, 2011; OECD, 2010; Popkewitz, 2011).

This paper, in responding to Nuthall's (2004) call, deals with the research gap between higher education teachers' instruction and students' learning. At present, research that bridges this gap in higher education is rather limited. This paper reports on students' understanding of a financial concept that was taught in three accounting courses in a three-year Business Administration program at the university level in Sweden. To investigate this understanding, the research team posed the following research question: How is the student's understanding of the same financial concept sustained during a three-year program?

Lecturers in higher education typically follow course curricula and syllabi when preparing their classes. These curricula and syllabi present generally agreed-on program and course goals and may even suggest lecture structure, student assignments, and evaluation methods. However, there is often less agreement on, as well as understanding of, students' learning progression, learning outcomes, and retention of subject content. In particular, this lack of understanding is evident in the evaluation of students in multi-year programs when different lecturers teach the various courses. It is quite rare that the same lecturer presents continuation courses in higher education programs at the Bachelor degree level. Yet few longitudinal studies exist on students' learning progression (i.e., the sustainability of their learning) in which a particular idea or concept is introduced, explored, and developed in a series of courses.

Researchers and educators increasingly refer to "Education for Sustainable Development" (ESD) to describe the movement to rethink and revitalize education programs and systems. However, "sustainability" is somewhat widely interpreted in higher education. In this paper the word is used in relation to university students' learning outcomes as they strive to develop the competencies they will need in their future occupations (Bowden & Marton, 1998).

The discourse on sustainable learning (Burns, 2013) and "effective teaching" implies that educators can effectively address well-known sociocultural and ecological problems in ways that transform and enhance learners' awareness of the need to stabilize the relationship between the society and the living world (see also Dewey, 1910/1991). Hopkinson and James (2010) recognize the importance of these sustainability skills and competences but also observe, "[…] progress within individual modules and lectures is unlikely to achieve the level or rate of embedding ESD that is frequently discussed but rarely achieved" (p. 374). While many curriculum change recommendations unfortunately thrive only at the rhetorical level, the ESD concept has relevant content and meaning for

everyday teaching in higher education (Anderberg, Nordén, & Hansson, 2009).

This study uses the theoretical framework of phenomenography and variation theory (Marton, 1981, 2015) to examine the sustainability of university students' learning when taught using qualitatively different ways of experiencing, perceiving, understanding, and conceptualizing a basic financial concept.

Theoretical Framework: Phenomenography and Variation Theory

In recent years various researchers have used phenomenography and variation theory in studies of the relationship between teaching and student learning outcomes (Booth & Ingerman, 2002; Holmqvist, 2006; Ingerman, 2003; Ingerman, Berge, & Booth, 2009; Marton & Booth, 1997; Maunula et al., 2011; Mårtensson, 2015; Rovio-Johansson & Lumsden, 2012). Several studies deal with learning study practices based on variation theory (Marton, 2015). According to this theory, teachers collaboratively organize learning instances of specific phenomena in order to enhance students' learning as well as advance their own professional development (Akerlind, 2008; Kullberg, Mårtensson, & Runesson, 2015; Pang & Lo, 2012; Phan, 2014; Rovio-Johansson & Lumsden, 2012; Runesson, 2008; Tan & Nashon, 2013; Tait, 2009; Vikström, 2014).

Almost forty years ago Marton (1976) used a phenomenographic approach to study students' understanding of scientific concepts in higher education (see also Dahlgren, 1975; Johansson, Marton, & Svensson, 1985; Rovio-Johansson, 1999). Phenomenography is a qualitative, explorative research approach that aims to describe how students experience, perceive, and conceptualize a phenomenon (Marton, 1981, 1986, 1992). In the phenomenographic approach, which builds on a non-dualistic ontology, the meaning of a phenomenon derives from the relationship between the student and the phenomenon.

Phenomenographic studies on students' learning and understanding in various subjects take various approaches. Some studies focus on the qualitative differences among students' ways of conceptualizing a phenomenon (Dahlgren, 1975; Marton, 1981, 1986, 2015; Svensson, 1976; Säljö, 1975). Still other studies investigate students' approaches to learning (Marton & Säljö, 1976; Prosser & Trigwell, 1997, 1999) and teachers' approaches to teaching and learning (Phan, 2014; Trigwell & Prosser, 1991, 1996). For example, Biggs (1979) studied individual differences among students, and Entwistle (1988) investigated students' motivation and perception of teaching and the learning environment. Ramsden

(1988; 1992), Prosser, Trigwell, and Taylor (1994), and Prosser and Trigwell (1999) conceptualized academics' understanding of the science of teaching.

Variation theory, a general learning theory, has emerged from the phenomenographic research approach (Marton, 1981, 2015). Variation theory claims that learning involves an increase in the student's capability for simultaneously discerning critical aspects of the object of learning (Marton & Booth, 1997; Marton & Morris, 2002). Discernment presupposes that students experience variation in certain critical aspects of the object of learning. Learning is defined as a change in students' awareness of the object of learning (Marton & Booth, 1997).

For example, if a teacher wants students to learn certain critical aspects of the object of learning, the teacher has to vary the object of learning so that students perceive the critical aspects. It is unlikely that students can simultaneously perceive all aspects of an object of learning in focal awareness. However, those aspects that are discerned and kept in focal awareness simultaneously give meaning to the object of learning and help students decide which meaning they have experienced and ascribed to the object of learning. The lecturer plans the content of the lecture, specifies the intended object of learning, and creates variation in critical aspects of the object of learning by systematically varying one aspect at a time while other aspects are kept constant (invariate). The enacted object of learning, which the researcher observes, is the result of the classroom interaction between the students and the lecturer during the lesson (Marton & Tsui, 2004). The learning object that the student creates as a result of this learning is the lived object of learning. The learning outcomes are the qualitative differences in the focused aspects of the lived object of learning as explained by students in interviews with researchers (Marton, 2015).

In variation theory, critical aspects of the object of learning are those that students must discern in order to learn the subject content they have studied. The differences in how students experience the same object of learning depend on which aspects of the learning object they discern (Lo, 2012; Marton, 2015). Kullberg et al. (2015), Lo (2012), and Lo and Chick (2016) have investigated teachers' learning and their understanding of the inner and outer horizons of the object of learning.

This paper takes a phenomenographic and a non-dualistic approach and uses variation theory and critical aspects of a financial concept in its exploration of students' meaning making of a subject or idea (see Wittgenstein, 1953/1997). In this study, the students' meaning making (of a financial concept) may differ because they interpret, perceive, and experience it in different ways. The research team for this study investigated the qualitative changes in the students' understanding of a particular financial concept (the

phenomenon; in this case return on investment, hereafter ROI) during their three-year program (that is, their knowledge progression) as assessed in interviews at the end of each year in the program.

Method

This research is part of a larger research project on student learning in higher education that was conducted from 2001 to 2004. The research team for the study consisted of the course lecturers and one researcher with a background in educational sciences and research experience in didactics and education. Subsequent reorganisation of the students' program because of national and local requirements had no effect on the research question of this study.

Business Administration Program

The university students in the study were enrolled in a three-year undergraduate program (a Bachelor degree program in either Business or Economics). Two accounting courses are required in the students' first two years: a Management Accounting course in Year 1 and a Financial Accounting course in Year 2. In both courses, the concept of ROI is discussed, although framed differently. In their third year, the students write a thesis on individually selected accounting topics. At the end of each year, the students were interviewed about their understanding of ROI. They were asked to explain how they solved the examination problems on ROI in two written course examinations (in Years 1 and 2) and in a specially prepared case study and questions on ROI (in Year 3).

Selection of a Concept

Among possible alternatives, the concept of ROI was selected as the learning object. In addition to formal study of ROI in the first and second years of their program, many students use the concept in their thesis research in their third year. Course lecturers (who were also involved in the study's design) recommended this concept for research. They also prepared the examination problems for Years 1 and 2 and the case study for Year 3.

Research Design and Participants

Approximately 200 students are admitted to the program yearly. From this enrolment in September of 2000, a "theoretical sampling" technique (Siegel & Castellan, 1956/1988) was used to form three student groups. The students were assigned to the groups on the basis of the lecturers' evaluations of their first accounting examination. Using the Swedish grading system, students were assigned to one of the following groups: "fail," "pass," and "high pass" (interpreted as low achieving, mid-achieving, and high achieving performance). Then students were randomly selected from each group to form the sample of nine students. Patton (1990, p. 179) states that this form of sampling in qualitative studies is called "purposeful random sampling," which means that a small sample size is chosen for an in-depth qualitative study and "does not automatically mean that the sampling strategy should not be random." The same nine students were interviewed after year of the three-year program.

The ROI Problems

The students had studied ROI in their two accounting courses as they analyzed various financial issues in the "real world" of business. The course examinations in Years 1 and 2 asked students to solve a problem related to ROI. These problems, which increased in difficulty from Year 1 to Year 2, simulated complex company issues. Because students write a thesis in Year 3 and do not take an examination, they were given a case study. This problem used real world financial data from Ericsson, a large Swedish telecommunications company.

The problem in the Management Accounting examination (Year 1) presented numbers from a company's balance sheet and income statement and various key ratios/numbers such as return on total assets, profit margin, and budgeted capital expenditures. The students were asked to explain how these ratios/numbers were calculated and to describe their importance with respect to ROI.

The problem in the Financial Accounting examination (Year 2) presented similar financial statement numbers for a different company. The students were asked to explain how two alternative ways of accounting for research and development costs (expense or capitalize) would affect ROI.

Ericsson was selected for the Year 3 case study because of the company's erratic history, its interest to the financial media, and the effect its financial results have on the Swedish economy. For example, after some very profitable years, the company suddenly lost some 29.1 billion Swedish crowns in 2001 (approximately 3 billion US dollars). Students received the company's balance sheets and the income statements for the years 1999 to 2002, as well as some key figures including ROI. Students were asked four questions that required explanation of the ROI calculation and of its importance.

Interviews

A researcher who was not involved in the course planning, instruction, examinations, or the case study conducted the 27 interviews (3 interviews each for the 9 students). A semi-structured question format was used with the students. Follow-up questions were asked as needed to clarify their responses. Each interview lasted between 40 and 90 minutes. The third year interviews were longer than the first and second year interviews because the students needed more time to read and analyze the case study. The audiotapes were subsequently transcribed verbatim (Linell, 2009).

The nine students in the sample were interviewed after their examinations in Years 1 and 2 and after they had completed their thesis in Year 3. In the first interview, after the interviewer had described the research project and its goals, the interviewer asked the students to talk freely about their experiences in their courses and various examinations in the program. The intent of this introduction was to make students feel comfortable with the interview situation (Kvale, 1996).

Alvesson (2003, p. 22) states, "Interviewees are then not seen—as in the moral storytelling metaphor—just as eager to save or improve their egos or their organization's reputation through more or less routinized and unreflective self-promoting (or organization-promoting) statements but as *politically aware and politically motivated actors* [emphasis in the original]. Actors may use interviews for their own political purposes." Czarniawska (2007, p. 13) also concludes that interviewee responses to questions cannot be regarded as "the windows into the depth of reality." Accordingly, the researcher must differentiate between the interviewees' experiences, based on the collected data, and the stories they tell.

In the Year 1 interview, the researcher-interviewer used the students' examination solutions (course: Management Accounting) to stimulate their recollection of how they understood ROI. They were shown their examination solutions and were asked to explain how they arrived at the calculation of ROI. The same procedure was followed in the Year 2 interview (course: Financial Accounting). Bloom (1953) calls this interview technique "stimulated recall."

A different procedure was used in the Year 3 interview. The students, who were presented with a case study they had not seen before, were asked to examine the financial data in the problem and then to calculate ROI and explain its importance as an evaluation metric for companies.

Analyzing the Interviews

The 27 interviews were transcribed, categorized, translated, and analyzed. The students' interview statements were compared, year-to-year, to learn if and how their statements changed in the three-year period. To identify the qualitative differences among students' answers and the different categories of descriptions (the hierarchy), the students' statements were iteratively compared in the analysis. In the analysis of the interviews, critical aspects are the analytical tools used to analyze the students' understanding and the qualitative differences among their answers.

The comparison of the students' statements required an iterative process of interpretation in which the context (the students' learning level) shifted from year to year. The idea that words receive their meaning from their context originates with Wittgenstein's (1953/1997) reaction to linguists' atomistic view of "language meaning."

Based on the differences in structure and content of the students' interview statements, the analysis yielded three categories of description for their understanding of ROI. The interview statements in each category have the same structure and content. The categories of descriptions (Categories A, B, and C) have an ascending order of calculation complexity and content originality; that is, Category B builds on Category A, and Category C builds on Category B.

Findings

The study shows that it is possible to detect the critical aspects of a concept, as well as the difficulties related to the conceptualization of the concept (Ingerman et al., 2009; Kullberg, 2010; Mårtensson, 2015; Pang, Linder, & Fraser, 2006; Rovio-Johansson, 1999; Runesson, 1999). This knowledge can be useful in education in areas other than accounting and related financial courses. Teachers should carefully examine the students' discerned critical aspects of the concepts they teach because they form the basis for learning; these aspects are essential for developing the capability for learning the intended content.

In general, the results may contribute to the development of the curriculum in higher education. The analysis of the students' qualitatively different ways of understanding the concept ROI indicates *how* they understand the concept, *which aspects* they discern, and in *what way* they use their knowledge for problem-solving. This study reveals some difficulties students have in understanding a basic accounting/financial concept.

The following excerpts from the three interviews (labelled by Category and Interview) illustrate this progression of students' knowledge.   A brief commentary on the students' statements follows each interview group. The numbers in parentheses indicate the student number and the interview year. The interview excerpts selected for inclusion are those that are most representative of the students' comments.

Table 1
Students' Interview Statements by Categories of Description

Category of Description	Interview I	n*	Interview II	n*	Interview III	n*
A	A1	5	A2	5	A3	3
B	B1	3	B2	3	B3	4
C	C1	1	C2	1	C3	2

*= number of students per category of description

Table 2
Students' Statements in Interviews in Year 1

Category	Interview answers in Year 1
A1	The turnover rate illustrates there is a rather high return on the capital in the company for a forest company. (Student 6, I)
B1	It [ROI] depends a bit on what kind of business you're working in, if it is good or bad. Preferably you should have a rapid return of capital as high as possible … that makes it [the capital] work all the time …it is a measure of how well the invested capital has been working during the specific time period, what you get in return on the capital invested … the owners want to get as high a return on total assets as possible. (Student 9, I)
C1	It [ROI] shows how well they have managed the assets to produce earnings … a high return on capital. They have pulp mills and paper mills. Here you see how they have financed their assets. It [ROI) will be a claim from the owners… they want to get earnings from the money that they have invested in the business…[…] It [ROI] is the earnings of the whole business. You have the results before financial costs divided by total capital. You do not consider the financial part or the debt-equity ratio […] Results, the profitability … are affected by many factors, for instance, the market's ups and downs. (Student 5, I)

Students' knowledge between the interviews may increase or change as the result of many activities and factors outside their classroom instruction. However, phenomenographic research does not investigate external contextual factors.

Table 1 gives an overview, on group level, of the number of students in the sample (n=9) and their distribution, in vertical columns as Categories of description and horizontal the interview year, I, II and III (corresponding to year 1, 2 and 3 in the educational program). As mentioned previously, the Categories indicate students' level of knowledge, A the lowest level, C the highest level and B the intermediate level. For example, in Category A (horizontal) students' knowledge progression is shown as well as the number of students at the lowest level; in Interview I (n=5), in Interview II (n=5) and Interview III (n=3). Finally, there is, on group level, a *horizontal knowledge progression* on this level, in Category A1 and Interview I, in Category A2 and Interview II, and in Category A3 and Interview III; the same progression is observed in Category B and Category C. Accordingly, there is also, on group level, a *vertical knowledge progression* each year among the

students in the sample, which will be explained below in Table 2, Table 3, Table 4 and Table 5.

In the student statements and in the analyses of their statements, the year is indicated by a number (1, 2, or 3) and a Category of Description by letter (A, B, or C). Interview I, Interview II and Interview III indicate interviews carried out the first, the second and the third year of the students' educational program.

Table 2 shows the students' knowledge progression the first year, illustrated by their answers in each Category A, Category B and Category C. The answer A1, selected among the answers (n=5) in Category A1 in year 1, is assessed as the best representative of the Category A1 (among the five answers). The same count for the answer B1 and C1. Put together, Category A1, Category B1 and Category C1 represent and illustrate the students' knowledge progression in year 1(vertical column).

In A1, the student discerns one critical aspect of the concept ROI: the turnover rate. The company in A1 is only vaguely described as "a forest company." In B1, the student discerns three critical aspects of ROI: turnover rate, management of capital employed, and the kind of company and its market. ROI in B1is discerned as "as rapid a return

Table 3
Students' Statements in Interview in Year 2

Category	Interview answers in Year 2
A2	Return on investment refers to Retained Earnings, which are the total earnings of the company. Figure 10 is operating profit plus financial income divided by total capital, which then is on the balance sheet […] This is a way to find out how well business operations have been managed… the quality of the management of capital employed. (Student 4, II)
B2	If you are going to look at the return on total assets, then you look at the profit before financial income and expenses. You then compare these ratios between different companies. You have to consider how they [companies] are financed. These figures show the company has high financial expenses because they have borrowed a lot, but this should not affect this ratio when you are comparing companies […] Later you should add the financial revenues […] financial revenues should be included and then you should divide by total capital. (Student 8, II)
C2	It ROI] depends a bit on different things … what type of industry and the degree of risk you take. There is a high risk in this industry. Of course, with higher risk, a higher turnover rate is needed. As for the capital, it is not possible to say that there is a specific amount and that it has to be that amount. Rather it is a bit dependent on the phase the company or the business is going through. If you are just at the beginning you may not expect to have an enormously high earning capacity. Different factors affect it [ROI]. (Student (5, II)

Table 4
Students' Statements in Interviews in Year 3

Category	Interview answers in Year 3
A3	They [the company] have decreased their debt so you can hope for a positive development. You probably want a return on investment that exceeds the interest cost. But I don't know how to relate it [ROI] to the profit and loss. I mean numerically. (Student 8, III)
B3	It is very difficult to say. The business has to manage without debt […] The company wants long-term profit, but it may not succeed […] In some years the company has had very large amounts of debt. […] In this industry there is a high risk when investing money in such a company, so you really want to have a good return on capital. (Student 4, III)
C3	There are many different factors that have an influence [on ROI] such as industry conditions, business cycles, and management […] The company's debt has decreased. The owners want a positive return on their investments […]. One must compare alternative investments. You may get maybe 3.0 % or 3.5 % on bank savings, with little risk. For more risk, you should have a higher return, perhaps 6 % or 7 %, even 8 %. I don't think it is reasonable for the company's owners to expect such a return from this company. (Student 7, III)

of capital," which indicates that "rapid return" is a critical aspect of ROI. In C1, the student discerns three critical aspects of ROI: turnover rate, management of capital employed, and the kind of business and its market. In C1 the student suggests a fourth aspect of ROI (the owners' perspective on profitability) as shown by the statement, "They want to get earnings from the money that they have invested in the business."

Table 3 shows the students' knowledge progression in the second year, shown by Category A2, Category B2 and Category C2. The same principle is used to select student answers to each Category, as in Table 2 (described above). Taken together, Category A2,

Category B2 and Category C2 show the students' knowledge progression in year 2 (vertical column).

In A2, the student discerns one critical aspect of ROI: the quality of the management of capital employed. The student describes the calculation ROI and its effect. In B2, the student discerns the following critical aspects of ROI: the kind of company and its market and stage of development. The student focuses on the arithmetic calculation of ROI even if the understanding of profit (income and expenses) initially seems somewhat hesitant. After calculating ROI correctly, the student adds that financial revenues must also be considered. This is

critical because the student now understands that ROI is used to compare companies in the same industry sector. In C2, the student identifies several critical aspects of ROI: the turnover rate, the company stage (e.g., a new start-up or an established company), and the risk associated with investments. This student also comments on the many different factors that affect companies' results and their ROI.

Table 4 shows the students' knowledge progression in the third year, shown by Category A3, Category B3 and Category C3 (vertical column). The selection of students' answers is done the same way as in Table 2 and Table 3 (see above).

In A3, the student (who takes the owners' perspective) discerns three critical aspects of ROI: the company's debt level, comparative interest rates, and the size of the capital employed. In a comparison of bank interest rates with required rates of return for companies, the student indicates an awareness of the risk the company faces with its investments. In B3, the student (who focuses on profitability as an arithmetic exercise) discerns the critical aspects of the market, the risk, and the time perspective related to investments. In C3, the student recognizes that several factors influence

ROI and discerns several critical aspects of ROI: kind of industry (market), the business cycle, owners' demands, the risk of investments, and profitability (as a positive development of the company's activities).

Table 5 presents students' understanding of the critical aspects of ROI, the phenomenon experienced by the students. Each of students' statements, in Table 2, Table 3 and Table 4, is a description of a student´s understanding of ROI and contains the critical aspects of ROI, discerned and experienced by the student.

In Table 5, the *horizontal knowledge progression*, in students' statements, A1 to A3, B1 to B3 and C1 to C3, is shown as a change in students' meaning making and as a change in student's knowledge of the concept ROI in each year (Interview I, to Interview II to Interview III). In Table 5, the interviews indicate a progression among the students: from being able to understand and calculate ROI; to predict ROI; and finally, to calculate achievable and favourable ROI. It can be argued, that it is a knowledge progression of the concept ROI from a less complex level to a most complex level where all critical aspects are included (from the students' perspective).

Table 5
Students' Qualitatively Different Ways of Understanding ROI in Interviews I, II, and III

Ways of under-standing / Influential factors	Interview I To understand and calculate ROI	Interview II To predict ROI	Interview III To calculate achievable and favourable ROI
Category A: Elements used in the calculation of ROI	• turnover rate	• turnover rate and company comparison • management of capital employed	• turnover rate • cost of capital • amount of capital employed
Category B: An interpretative process of understanding business activity and ROI	• company and its industry • company and its market	• stage of the company • type of company and its market	• market • profitability • time perspective
Category C: An extended, "real life" interpretative process of understanding business activity and ROI	• owners' demands	• risk level of investment • other factors influencing profitability	• situation of the industry • market risk • risk of investment • profitability and other influential factors

The vertical columns, in Interview I, Interview II and Interview III, show the students' *vertical knowledge progression*. This is a knowledge progression among the students from (vertical): locating elements used in the calculation of ROI; to an interpretative process of understanding business activity and ROI; and finally, to making an extended "real life" interpretative process of understanding business activity and ROI. This vertical knowledge progression, also indicate a knowledge progression of the concept ROI from a less complex level to a most complex level where all critical aspects are included each year in Interview I, Interview II and Interview III.

These results, in particular, may provide valuable didactic knowledge for lecturers in accounting classes, such as Management Accounting and Financial Accounting, when planning or revising curricula, courses, and teaching sequences. Given that variation theory as a learning theory is used to enhance the quality of teaching and learning, these aspects are important from the students' perspective (Ingerman et al., 2009; Lo, 2012; Marton, 2015; Rovio-Johansson, 2013) on problem-solving processes (Rovio-Johansson, 1999; Rovio-Johansson & Johansson, 2006; Runesson, 1999, 2005, 2006) and for support of teachers' professional development (Holmqvist, 2011; Kullberg et al., 2015; Pang & Lo, 2012; Rovio-Johansson & Lumsden, 2012). To understand the relationship between teaching and learning outcomes are important for teachers' professional development in higher education (Allan & Clarke, 2007; Burns, 2013; Kullberg et al., 2015; Marton, 2015; Pang & Lo, 2012; Phan, 2014; Rovio-Johansson, 2013; Rovio-Johansson & Lumsden, 2012; Tait, 2009).

To establish the credibility and trustworthiness of the research, the research team paid special attention to the context: the environment in higher education as evidenced by the program and course levels and the complexity of the student ROI problems. After the analysis of the data and the creation of the three categories of description, an external coder (a colleague of the lecturers and the researcher) analyzed the students' interview statements in order to confirm the accuracy of the categorizations. Some differences were found between the coder's categorizations and the research team's categorizations, but these differences were very minor. Marton (1986, p. 35) states: "The original findings of the categories of descriptions are a form of discovery, and discoveries do not have to be replicable."

Discussion

In the study's design, conduct, and analysis (based on intersubjective agreement by the research team of lecturers and researcher) respect for the credibility and trustworthiness of the qualitative and phenomenographic research approach was paramount (see Kvale, 1996; Patton, 1990; Merriam, 1998). As Kvale (1996) writes, credible research generally derives from the (a) the correspondence between the results and what is known from previous research studies, (b) the likelihood of the categories, and (c) the distinctiveness and exclusiveness of the categories. Trustworthy research depends on how the data were collected and analyzed and on how the conclusions are derived from these data. The students' identities were protected in this study by adherence to generally accepted rules for ethical research (Kvale, 1996). The research was also guided by the code of *Good Research Practice* adopted by the Swedish Research Council (2011). This code requires that the Ethical Review Board approve the background information for the research project. The anonymity of the research participants must also be protected. In addition, the participation of the students in this study was voluntary; students could leave the interviews and the research project whenever they wished.

In Interview I, after the examination in Year 1, some students had a fragmented understanding of ROI while a few had a relatively good understanding. In Interview II, after the examination in Year 2, the students' statements featured the calculation of ROI, although some confusion remained about its relevance. In Interview III, when the case study was presented, about one-half of the students had achieved an understanding of ROI equal to entry-level accountants. According to the lecturers on the research team, these students were qualified to make some decisions, estimates, and evaluations in the professional financial/accounting environment. They had a fundamental understanding of ROI (its calculation, influences, and importance) that laid the foundation for further development. In brief, the students had achieved the level of sustainable learning.

The results of this study show that the critical aspects that are discerned and kept in focal awareness are of decisive importance for students' knowledge progression. More results from different subject matter areas increase the possibilities for teachers to revise and reorganize teaching, curricula, syllabi, and instruction materials so that student learning and knowledge progression in higher education are enhanced.

In order to improve the quality of student learning, students must be trained to perceive the critical aspects of the object of learning as their studies progress. In the interviews for this study, the problem-solving process was important in revealing the critical aspects of the students' knowledge. These discerned aspects were revealed in the analyses of the interviews. In the problem-solving process, the less successful students

discerned fewer critical aspects than the more successful students. Therefore, it is suggested that teachers be especially aware of the difficulties students encounter with studied concepts in the subject matter. These findings can show lecturers how to effectively reorganize teaching to enhance students' understanding of subject matter and to achieve sustainable learning.

The possibilities for generalization from this qualitative study are necessarily somewhat restricted since the study focuses on one concept taught in accounting courses and how nine students, selected by theoretical sampling, understood that concept over a time period of three years. However, while the results of this study are specific for the one phenomenon, the research approach is general. Therefore, more studies, using the approach applied in this study, are needed that can test and validate these specific results due to the scarcity of longitudinal studies on students' sustainable learning in higher education.

Conclusions

The purpose of this study was to explore students' knowledge progression in accounting studies in a three-year university business program. How is the student's understanding of the same financial concept sustained during a three-year program? To answer the research question, a sample of nine students was followed for the three years. Their knowledge progression was studied based on analyses of their descriptions of their understanding of ROI as presented in two examination problems and a case study.

Students' knowledge progression was assessed by their understanding of the critical aspects of ROI. Using categories of description, the study finds variations in how students perceive these aspects and in their knowledge progression (Rovio-Johansson & Johansson, 2006). The study supports previous research that looks at the qualitatively different ways students experience economic concepts (Dahlgren, 1978; Marton & Pang, 2013a, b; Pang, 2002; Pang & Marton, 2005; Pong, 2000).

The study shows the capability for learning has to be sustainable (Rovio-Johansson & Johansson, 2006). Students who find employment in the fields of accounting and finance will enter a world in which accounting rules and regulations, financial and accounting instruments, and political and social structures are all in constant flux (Lo, 2012; Marton, 2015). The student who has learned how to acquire and develop scientific knowledge has the greatest chance to understand and manage this changing environment (Burns, 2013; Ingerman et al., 2009; Lo, 2012; Marton, 2015; Rovio-Johansson & Johansson, 2006; Rovio-Johansson & Lumsden, 2012; Vikström, 2014). Creating the conditions for sustainable learning in higher education is a responsibility of the highest order.

Future research

The study confirms that the phenomenographic approach and variation theory are powerful tools that can be used to enhance students' learning outcomes in higher education (Akerlind, 2015; Ingerman, 2003; Marton, 2015; Rovio-Johansson, 2013; Tait, 2009; Wood, 2000) and at the compulsory school level (Holmqvist, 2011; Ingerman et al., 2009; Kullberg, 2010; Kullberg et al., 2015; Mårtensson, 2015; Runesson, 2008; Vikström, 2014). This study may be used as a model for other studies of student learning in various subject matter areas. Even though the subject content in this study is specific, the methodology of variation theory is applicable to other disciplines.

The relationship between teaching and learning outcomes is an issue of great importance to researchers and educators alike (Allan & Clarke, 2007; Burns, 2013; Holmqvist, 2011; Kullberg et al., 2015; Marton, 2015; Nuthall, 2004; Pang & Lo, 2012; Phan, 2014; Rovio-Johansson, 2013; Rovio-Johansson & Lumsden, 2012; Tait, 2009). However, more research is needed to improve the understanding of the relationship between teaching and students' learning and to enhance higher education teachers' professionalization. More research is also needed in different subject matter areas so that teachers have more possibilities to revise their teaching, curricula, syllabi, and other instruction materials. These revisions can help teachers advance students' knowledge progression.

References

Akerlind, G. (2008). A phenomenographic approach to developing academics' understanding of the nature of teaching and learning. *Teaching in Higher Education, 13*(6), 633-644.

Akerlind, G. (2015). From phenomenography to variation theory: A review of the development of the variation theory of learning and implications for pedagogical design in higher education. *HERDSA Review of Higher Education, 2*, 5-26.

Allan, J. & Clarke, K. (2007). Nurturing environments in Higher Education through teaching study skills: To embed or not to embed? *International Journal of Teaching and Learning in Higher Education, 19*(1), 64-76.

Alvesson, M. (2003). Beyond neopositivists, romantics, and localists: A reflexive approach to interviews in organizational research. *Academy of Management Review, 28*(1), 13-33.

Anderberg, E., Nordén, B., & Hansson, B. (2009). Global learning for sustainable development in higher education: Recent trends and a critique. *International Journal of Sustainability in Higher Education, 10*(4), 368-378.

Biggs, J. B. (1979). Individual differences in study processes and the quality of learning outcomes. *Higher Education, 8*(4), 381-394,

Bloom, B. S. (1953). Thought-processes in lectures and discussions. *Journal of General Education, 7*(3), 160-169.

Booth, S., & Ingerman, Å. (2002). Making sense of Physics in the first year of study. *Learning and Instruction, 12,* 493-507.

Bowden, J., & Marton, F. (1998). *The university of learning. Beyond quality and competence*. London, UK: Kogan Page.

Burns, H. (2013). Meaningful sustainability learning: A study of sustainability pedagogy in two university courses. *International Journal of Teaching and Learning in Higher Education, 5*(2), 166-175.

Czarniawska, B. (2007). *Shadowing and other techniques for doing fieldwork in modern societies.* Malmö, SE: Liber.

Dahlgren, L. O. (1975). Qualitative differences in learning as a function of content-oriented guidance. *Gothenburg Studies in Educational Sciences, 15*. Acta Universitatis Gothoburgensis. University of Gothenburg, Sweden: University of Gothenburg.

Dahlgren, L. O. (1978). *Effects of University Education on the Conception of Reality*. Paper presented at the Fourth International Conference on Improving Teaching, July 26-29, 1978, Aachen, Germany. Reports from the Institute of Education, 65. University of Gothenburg, Sweden: University of Gothenburg.

Dewey, J. (1910/1991). *How we think.* New York, NY: Prometheus Books.

Entwistle, N. J. (1988). Motivational factors in students' approaches to learning. In R. R. Schemeck (Ed.), *Learning strategies and learning styles* (pp. 21-51). New York, NY: Plenum.

Fensham, P. J. (2009). Real world contexts in PISA Science: Implications for context-based science education. *Journal of Research in Science Teaching, 46*(8), 884-896.

Holmqvist, M. (2011). Teachers' learning in a learning study. *Instructional Science, 39*(4), 497-511.

Holmqvist, M. (Ed.) (2006). *Lärande i Skolan. Learning Study som Skolutvecklingsmodell.* [Learning in school. Learning study as a model of school development]. Lund, SE: Studentlitteratur.

Hopkinson, P., & James, P. (2010). Practical pedagogy for embedding ESD in science, technology, engineering and mathematics curricula. Special issue: Competences for sustainable development and sustainability: Significance and challenges for ESD. *International Journal of Sustainability in Higher Education*, *11*(4), 365-379.

Ingerman, Å. (2003). Expounding on physics: A phenomenographic study of physicists talking of their physics. *International Journal of Science Education, 25*(12), 1489-1508.

Ingerman, Å., Berge, M., & Booth, S. (2009). Physics group work in a phenomenographic perspective – learning dynamics as the experience of variation and relevance. *European Journal of Engineering Education, 34*(4), 349-358.

Jakobsson, A., Davidsson, E., Karlsson, K-G., & Oskarsson, M. (2013). Exploring epistemological trends in students' understanding of science from the perspective of large-scale studies. *ISRN Education. 13*(1), 4-18. (Open access: Article ID 196014).

Jerrim, J., & Micklewright, J. (2014). Socio-economic gradients in children's cognitive skills: Are cross-country comparisons robust to who reports family background? *European Sociological Review, 30*(6), 766-781.

Johansson, B., Marton, F., & Svensson, L. (1985). An approach to describing learning as a change between qualitatively different conceptions. In L. Pines & T. West (Eds.). *Cognitive Structures and Conceptual Change* (pp. 233-257). New York, NY: Academic Press.

Kullberg, A. (2010). What is taught and what is learned: Professional insights gained and shared by teachers in mathematics. *Gothenburg Studies in Educational Sciences*, 293. Acta Universitatis Gothoburgensis. Göteborg, Sweden: University of Gothenburg.

Kullberg, A., Mårtensson, P., & Runesson, U. (2015). What is to be learned? Teachers' collective inquiry into the object of learning. *Scandinavian Journal of Educational Research, 60*(3), 309-322.

Kvale, S. (1996). *InterViews. An introduction to qualitative research interviewing.* Thousand Oaks, CA: Sage Publications.

Linell, P. (2009). *Rethinking language, mind and world dialogically: Interactional and contextual theories of human sense-making.* Charlotte, NC: Information Age Publishing.

Lo, M. L. (2012). Variation theory and improvement of teaching and learning. *Gothenburg Studies in Educational Sciences*, *323*. Göteborg, Sweden: University of Gothenburg.

Lo, M. L., & Chick, P. M. (2016). Two horizons of fusion. *Scandinavian Journal of Educational Research*, *60*(3), 296-308.

Lundgren, U. P. (2011): PISA as a political instrument – One history behind the formulating of the PISA programme. In M. Pereyra, H-G. Kotthoff, & R. Cowen (Eds.), *PISA under Examination – changing knowledge, changing tests, and changing schools*, (pp. 17–30). The Netherlands: Sense Publisher.

Mårtensson, P. (2015). *Att Få Syn På Avgörande Skillnader. Lärares Kunskap om Lärandeobjektet* [Learning to see distinctions. Teachers' knowledge of the object of learning]. Dissertation Series No.

29. Jönköping, Sweden: University of Jönköping: School of Education and Communication.

Marton, F. (1976). *Skills as an aspect of knowledge. Some implications from research on students' conceptions of central phenomena in their subject.* Paper presented at the Second International Conference on Improving University teaching, July 13-16, 1976, Heidelberg, F.R., Germany. Reports from the Institute of Education, Göteborgs University, No. 55. Göteborg, Sweden.

Marton, F. (1981). Phenomenography – Describing conceptions of the world around us. *Instructional Science, 10*, 177-200.

Marton, F. (1986). Phenomenography – A research approach to investigating different understandings of reality. *Journal of Thought, 21*(3), 28-49.

Marton, F. (1992). Phenomenography and "the art of teaching all things to all men". *International Journal of Qualitative Studies in Education, 5*(3), 253-267.

Marton, F. (2015). *Necessary conditions of learning*. New York, NY: Routledge.

Marton, F., & Booth, S. (1997). *Learning and awareness*. Mahwah, NJ: Lawrence Erlbaum.

Marton, F., & Morris, P. (Eds.), (2002). *What matters? Discovering critical conditions of classroom learning*. Göteborg Studies in Education Sciences, 181. Göteborg, Acta Universitatis Gothoburgensis.

Marton, F., & Pang, M. F. (2013a). Meanings are acquired from experiencing differences against a background of sameness, rather than from experiencing sameness against a background of differences: Putting a conjecture to test by embedding it in a pedagogical tool. *Frontline Learning Research, 1*(1), 24-41.

Marton, F., & Pang, M. F. (2013b). Interaction between the learners' initial grasp of the object of learning and the learning resource afforded. *Instructional Science, 41*, 1065-1082.

Marton, F., & Säljö, R. (1976). On qualitative differences in learning. Outcome and process. *British Journal of Educational Psychology, 46*(1), 4-11.

Marton, F., & Tsui, A. B. M. (2004). *Classroom discourse and space of learning*. Mahwah, NJ: Lawrence Erlbaum.

Maunula, T., Magnusson, J., & Echevarria, C. (2011). *Learning study – Undervisning Gör skillnad*. [Learning study – teaching makes difference]. Lund,SE: Studentlitteratur.

Merriam. S. B. (1998). *Qualitative research and case study applications in education.* [Revised and expanded from *Case study research in education]*. San Francisco, CA: Jossey-Bass Publishers.

Nuthall, G. (2004). Relating classroom teaching to student learning: A critical analysis of why research has failed to bridge the theory-practice gap. *Harvard Educational Review, 74*(3), 273-306.

OECD (2010): *PISA results 2009. What students know and can do. student performance in reading, mathematics, and science (Volume I)*. Paris, FR: OECD Publications.

Pang, M. F. (2002). *Making learning possible. The use of variation in teaching of school economics* (Unpublished doctoral thesis). The University of Hong Kong, Hong Kong.

Pang, M. F., & Lo, M. L. (2012). Learning study: Helping teachers to use theory, develop professionally, and produce new knowledge to be shared. *Instructional Science, 40*(3), 589-606.

Pang, M. F., & Marton, F. (2005). Learning theory as teaching resource: Enhancing students' understanding of economic concepts. *Instructional Science, 33*, 159-191.

Pang, M. F., Linder, C., & Fraser, D. (2006). Beyond lesson studies and design experiments: Using theoretical tools in practice and finding out how they work. *International Review of Economics Education, (5)*1, 28-45.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2ⁿᵈ ed.). London, UK: Sage Publications.

Phan, H. (2014). Enhancement of quality learning: Capitalizing on the SAL framework. *International Journal of Teaching and Learning in Higher Education, 26(1*), 112-121.

Pong, W. Y. (2000). *Widening the space of variation: Inter-Contextual and intra-contextual shifts in pupils' understanding of two economic concepts* (Unpublished doctoral thesis). The University of Hong Kong, Hong Kong.

Popkewitz, T. (2011): PISA – Numbers, standardizing conduct, and the alchemy of school subjects. In M. Pereyra, H-G. Kotthoff, & R. Cowen (Eds.), *PISA under examination – Changing knowledge, changing tests, and changing schools* (pp. 31-46). The Netherlands: Sense Publisher.

Prosser, M. Trigwell, K., & Taylor (1994). A phenomenographic study of academics' conceptions of science teaching and learning. *Learning and Instruction, 4*(3), 217-231.

Prosser, M., & Trigwell, K. (1997). Relations between perceptions of the teaching environment and its relation to approaches to teaching. *British Journal of Educational Psychology, 67*(1), 25-35.

Prosser, M., & Trigwell, K. (1999). *Understanding learning and teaching. The experience in higher education*. Buckingham, UK: The Society for Research into Higher Education & Open University Press.

Ramsden, P. (1988). *Improving learning. New perspectives*. London, UK: Kogan Page.

Ramsden, P. (1992). *Learning to teach in higher education*. London, UK: Routledge.

Rovio-Johansson, A. (1999). *Being good at teaching. Exploring different ways of handling the same subject in higher education.* Gothenburg Studies in Educational Research, 140. Acta Universitatis Gothoburgensis. Gothenburg, Sweden: University of Gothenburg.

Rovio-Johansson, A. (2013). An application of variation theory of learning in higher education. In J. Huisman & M. Tight (Eds.), *Theory and method in higher education. international perspectives on higher education research* (pp. 261-279). United Kingdom: Emerald.

Rovio-Johansson, A., & Johansson, I-L. (2006). Lärandets kontextualitet: Hur utvecklas ekonomstudenters förståelse av ett grundläggande ekonomiskt begrepp under utbildningen? [The context dependency of learning: How do undergraduate students' understandings of a basic economic concept develop during their study programmes?] *Nordic Journal of Teaching and Learning for Practitioners and Researchers, 16*(2-3), 63-92.

Rovio-Johansson, A., & Lumsden, M. (2012). Collaborative production of pedagogical knowledge: Enhancing students' learning. *Journal of Applied Research in Higher Education, 4*(1), 72-83.

Runesson, U. (1999). Variationens pedagogik: Skilda sätt att behandla ett matema-tiskt innehåll. [The pedagogy of variation: Different ways of handling mathematical subject content]. *Göteborg Studies in Educational Sciences*, 129. Göteborg, Acta Universitatis Gothoburgensis. University of Gothenburg, Sweden.

Runesson, U. (2005). Beyond discourse and interaction. Variation: A critical aspect for teaching and learning mathematics. *Cambridge Journal of Education, 35*(1)*, 69-87.*

Runesson, U. (2006). What is it possible to learn? On variation as a necessary condition for learning. *Scandinavian Journal of Educational Research, 50*(4), 397-410.

Runesson, U. (2008). Learning to design for learning: The potential of learning study to enhance learning on two levels: Teachers' and students' learning. In T. Wood & P. Sullivan (Eds.), *Knowledge and Beliefs in Mathematics Teaching and Teaching Development*, (pp. 153-172). West Lafayette, IN: Purdue University.

Säljö, R. (1975). Qualitative differences in learning as a function of the learner's conception of the task. *Gothenburg Studies in Educational Sciences*, 14. Acta Universitatis Gothoburgensis. Göteborg, Sweden: University of Gothenburg.

Siegel, S., & Castellan, N. J., Jr. (1956/1988). *Nonparametric Statistics for the Behavioural Sciences*. New York, NY: McGraw-Hill.

Svensson, L. (1976). Study skill and learning. *Gothenburg Studies in Educational Sciences*, 19. Acta Universitatis Gothoburgensis. Göteborg, Sweden: University of Gothenburg.

Svensson, L. (1985). *Contextual analysis – The development of a research approach.* Paper presented at the 2nd Conference on Qualitative Research in Psychology, August 1985, Leusden, The Netherlands. Reports from Institute of Education University of Göteborg. Göteborg, Sweden.

Swedish Research Council (2011). *Good research practice*. Reports 3: 2011. Stockholm, SE: Swedish Research Council.

Tait, K. (2009). Understanding tertiary student learning: Are they independent thinkers or simply consumers and reactors? *International Journal of Teaching and Learning in Higher Education, 21*(1), 87-107

Tan, Y. S. M., & Nashon, S. M. (2013). Promoting teacher learning through learning study discourse: The case of science teachers in Singapore. *Journal of Science Teacher Education, 24*, 859-877.

Trigwell, K., & Prosser, M. (1991). Relating approaches to study and quality of and learning outcomes at the course level. *British Journal of Educational Psychology, 67*(3), 265-275.

Trigwell, K., & Prosser, M. (1996). Changing approaches to teaching: A relational perspective. *Studies in Higher Education, 21*(3)*, 275-284.*

Vikström. A. (2014). What makes the difference? Teachers explore what must be taught and what must be learned in order to understand the particular character of matter. *Journal of Teacher Education, 25*(6), 709-727.

Wittgenstein, L. (1953/1997). *Philosophical investigations* (2nd ed.). Translation by G. E. M. Anscombe. Oxford, UK: Blackwell Publishers.

Wood, K. (2000). The experience of learning to teach: Changing student teachers' ways of understanding teaching. *Journal of Curriculum Studies*, *32*(1), 75-93.

_____

AIRI ROVIO-JOHANSSON is Professor of Educational Sciences at the Gothenburg Research Institute (GRI), School of Business, Economics, and Law at the University of Gothenburg, Sweden. Her research interests are: 1) the relationship among students' learning and teaching in general, and students' learning outcomes and teaching in Higher Education; 2) methods for Institutional Quality assessment, assurance, and management in Higher Education, 3) organizational change processes and institutional discursive practices in public and

private organizations. She has published books, chapters and articles in international journals and contributed to several books on various topics.

Teaching and Learning Health Justice: Best Practices and Recommendations for Innovation

Christy A. Rentmeester
American Medical Association

Helen S. Chapple, Amy M. Haddad, and John R. Stone
Creighton University

We describe the development and implementation of an online graduate bioethics program that weaves a theme of health justice throughout the curriculum. Our account relies on a constructionist model of curriculum development and adult teaching and learning theory. Our curriculum draws upon core values of Jesuit higher education, including content with particular attention to justice for marginalized and vulnerable members of society and pedagogical strategies that cultivate students' capacities for critical thinking and engagement with ethics and justice issues in the context of healthcare. We propose four major contributions from the health justice literature as key content areas for inclusion in bioethics programs interested in focusing on health justice. We identify gaps in the literature and suggest how they might be addressed. Finally, we give examples of content, pedagogy, and preliminary findings from specific courses in our program, all in hopes of stimulating more conversation about how students learn about health justice.

Many, if not all, health science and related educational programs provide foundational content in bioethics. Professionals in these fields often wish to move beyond basic content in bioethics to courses at the graduate level, as indicated by increase in numbers and growth of new graduate bioethics programs over the past ten years. The student population in graduate bioethics programs differs from traditional undergraduate and entry-level health professions programs because it is composed of adult learners who are generally employed full time, experienced in life and in their respective disciplines, and engaged in many roles. The need for flexible graduate programs in bioethics that fit the schedules of working adults has motivated development of fully online and hybrid programs, which combine on-site and on-line methods of content delivery, to increase learning opportunities and options available to students.

In light of students' needs for flexibility, how might we assess pedagogical practice for teaching bioethics, and particularly justice, to adult learners? What should be the scope of the content? In fully online and hybrid programs, what are strategies for teaching adult learners about ethics with an emphasis on justice? Using our program as a case study, we attempt to answer these questions based on our review of best practice standards for adult learning and for teaching health justice. We describe gaps in these practices which relate to adult learning, justice content, and online curricular development in graduate bioethics education. Finally, we share three course descriptions, strategies for teaching about justice in bioethics, and preliminary findings on the effectiveness of these courses and strategies.

Designing a Bioethics Graduate Program for Adult Learners

All educational endeavors involve content and pedagogy, the "what" and the "how" of any learning activity. Shulman describes these basic components of teaching when he suggests, "The teacher has special responsibilities in relation to content knowledge, serving as the primary source of students' understanding on the subject matter. The manner in which that understanding is communicated conveys to students what is essential about a subject and what is peripheral" (Shulman, 1987, p. 9). One thing Shulman's idea suggests is that the curriculum of any degree program in higher education should be shaped by content knowledge, what is "essential about a subject," of a discipline. So, for example, formal accreditation standards guide health professions programs' curricular development. There are currently no comparable accreditation standards specific to graduate programs in bioethics. However, some professional bioethicists have offered guidance regarding what core content in graduate programs should include.

Dudzinski, Rhodes, and Fiester (2013), for example, recently summarized some of the most important curricular and pedagogical goals for bioethics programs:

> [A] central mission [of bioethics education] is to expand the vocabulary and analytical tools of its learners, expose them to new approaches and ideas, strengthen their skills in moral reasoning, and broaden their perspectives on bioethical issues and dilemmas. Its hallmarks are exposure to different disciplinary approaches and interactions with students and faculty from diverse disciplines (Dudzinski et al., 2013, p. 288).

Dudzinski and colleagues (2013) also suggest that bioethics students of all disciplines must "develop a clear understanding of their distinctive professional responsibilities" (p. 287). Lee, Viers, and Anderson (2013) reiterate the value of moral reasoning, in

particular, and suggest that whether and how well graduates of bioethics education in undergraduate, graduate, or health professions programs can "reason about situations" (p. 16) is one measure of curricular success. Furthermore, the cases and situations bioethics students are given to hone their reasoning skills should be ones they are "most likely to encounter" in their practices and lives (Lee et al., 2013, p. 16).

Another source to guide curricular development and design for bioethics education programs is the report of the American Society of Bioethics and Humanities Health Care Ethics Consultation Core Competencies (American Society for Bioethics and Humanities, 1998). Additionally, the experiences and expertise of diverse bioethics faculty inform and shape curricula in important ways, whether regarding a general bioethics focus or one particular area of bioethics such as human subject research or clinical ethics consultation.

Curriculum: What, Why, and How?

The Master of Science in Health Care Ethics (MSHCE) at Creighton University currently has about 50 students and was built to provide maximum flexibility for students in a fully online, asynchronous mode with thematic emphasis on health justice and vulnerable populations throughout the curriculum. Our curricular design followed best practice recommendations from the education literature by beginning with an identification of end-point educational goals and objectives. We then developed learning activities and assessment strategies to motivate those goals and objectives (Biggs & Tang, 2011; Diamond, 1998; Fink, 2013; Wiggins & McTighe, 2001). Determining what students should understand at the end of an educational experience, whether it is a program of study or a single course, can be a daunting task, partly because so much material could be included on any single topic. To address this challenge, we developed one strategic focus on content and one on pedagogy.

Focus on Content: What and Why. One way to follow Shulman's advice for identifying essential content in a discipline—bioethics, in our case—is to focus on the field's "big ideas" (Wiggins & McTighe, 2001, p. 23) that have enduring value beyond the classroom. Big ideas require a great deal of uncoverage; that is, they are complex, abstract, and often misunderstood by learners. *Health justice* and *vulnerability* in health care are two big ideas for the MSHCE program at Creighton.

These concepts are important for five reasons. First, we believe that preventable, remediable inequalities in health and in health services delivery adversely affect the most vulnerable among us, and that lack of opportunities for well-being among members of vulnerable populations are egregious moral failures that bioethics should address (Powers & Faden, 2006). Second, bioethics education (for health professions students and graduate students) insufficiently addresses such health injustices, what they are, how to understand them, and what should be done about them. Therefore, there is need in bioethics curricula to highlight health justice. Third, in the MSHCE program, the phrase "health care" refers to care of people's health generally rather than the narrower and more common assumption that "health care" and "health services delivery" are synonymous. Fourth, we emphasize social justice teachings of the Catholic tradition, including prioritization of needs of people who are poor. Fifth, the focus on health justice exemplifies Creighton University's Jesuit value of educating men and women with and for others in all of its programs, including the health sciences (Welie & Kissell, 2004). As former Superior General of the Society of Jesus, Kolvenbach (2001) stated, "Jesuit universities have stronger and different reasons than many other academic and research institutions for addressing the actual world as it unjustly exists and for helping to reshape it in the light of the Gospel" (p. 28).

Thus, the focus on health justice and people who are vulnerable is a central organizing principle for the learning goals of our program. In other words, the learning goals of our program reflect what we think is essential regarding health justice and vulnerability, such that students can better understand and value these elements throughout their personal and professional lives.

Focus on Pedagogy – How. The "how" of the MSHCE program, or pedagogy, supports students' achievement of our program's goals and specific courses' learning objectives. Through this "how," teachers of bioethics can transform content knowledge "into forms that are pedagogically powerful yet adaptive to the variations in ability and background presented by the students" (Shulman, 1987, p. 15). Because it is fully online, the MSHCE program follows best practice standards for online education (Quality Matters, 2014). For example, one important adaptation from onsite to online learning environments regards sequencing and pacing of content. To assist students in scaffolding their learning and managing their time efficiently, the program builds on content presented in prior courses. Additionally, we designed the program using principles derived from Knowles (1980) in order to cultivate the following:

- Safe, active, and collaborative learning forums with peers that include individual and social construction of knowledge.
- Learning experiences that invite and engage the insights of learners' prior life experiences.

- Essential and meaningful activities, in which students practice reasoning skills in situations they are "most likely to encounter" (Lee et al., 2013, p. 16).
- Learning activities about vulnerability and injustice that encourage exploration of alternative personal perspectives and critical reflection (Clapper, 2010; Grow, 1991; Mezirow, 1983; Milligan, 1995).

These structural and environmental features of our online learning sites meet students' needs for schedule flexibility and are grounded in the educational literature on best practices.

Four Major Contributions from the Literature on Bioethics Education about Health Justice

This section presents major concepts and questions from the best thought on justice teaching in the context of healthcare. Certainly justice issues that touch the realms of health and healthcare practices encompass clinics, hospitals, healthcare systems, states, regions, nations, and the globe. The predominant influences on health are pre-clinic or "upstream:" interactive social and cultural determinants such as income and wealth, education, and the social and physical environment (Geiger, 2006; Powers & Faden, 2006; U. S. Department of Health and Human Services, 2014; World Health Organization, 2012). These upstream social and cultural domains are central content areas in our program.

People experiencing health injustice can be poor, marginalized, oppressed, dislocated, language-disadvantaged, and ill or injured. Health injustices express in two major ways for members of these vulnerable populations: inferior access to healthcare services and lower quality of healthcare services. Members of these vulnerable populations also suffer diminished overall health status. Given the nature, extent, and outcomes of these injustices, we recommend specific content and pedagogy for health justice in bioethics education. Overall, the content should emphasize people who are vulnerable and disadvantaged. The pedagogy overall should stress affective learning, which focuses on students' attitudinal and emotional orientations to members of those groups. Our recommendations arise from our review of the literature on justice theory and are filtered through our experience teaching these concepts to our students. Each recommendation that follows includes a rationale and offers both a "what" (content) and "how" (pedagogy).

1. Teaching health justice should motivate understanding of our individual and collective

responsibilities for responding to inequalities in health status and healthcare service delivery.

Most students in our program are nurses, physicians, chaplains, and other health or health-related professionals with little formal education about interactive social and cultural determinants of health. Also, generally they have had minimal to no exposure to the causes or scope of health justice problems.

Along with exposing students to structural inequities that impact health, we agree that professors and teachers need to present and model "cultural work" (Freire, 2005, p. 121). Friere defines one affective result of such work as *critical consciousness,* self-awareness of one's own identities, of one's stance or orientation to others' identities, and of broader systemic trends and patterns of oppression that cause and exacerbate health injustices. In the context of health professions education, one use of Friere's concept of *critical consciousness* has been to advance the medical education literature on cross-cultural communication (Kumagai & Lypson, 2009). This concept also has broader applicability in bioethics education about health justice. As we all learn about the scale and extent of both institutionalized and unconscious health injustices, we must acknowledge with our students our own roles both as oppressors and oppressed. Otherwise we further contribute to both categories as dehumanized and dehumanizing (Freire, 1970). One way to teach this content both conceptually and affectively is to model, in classroom-based as well as practice-based settings, strategies for coming to terms with our membership, at different times, in both of those categories.

2. Complementary critical perspectives are lenses for analyzing injustices in health status and healthcare service delivery.

Examples of complementary critical perspectives used in our program are feminist justice theory and postcolonial theory. Both promote critical thinking about and responsiveness to vulnerability, including oppression and multigenerational trauma (Rentmeester, 2012; Young, 1990). Feminist justice theory and critical race theory are complementary approaches for assessing systematic injustices because they address how gender, "race[,] and racial power are constructed and represented in American legal culture and, more generally, in American society as a whole" (Crenshaw, Gotanda, Peller, & Thomas, 1995).

We draw strongly on feminist and postcolonial conceptions of oppression and the continued influences of oppression on health status among members of traditionally underserved populations. We have found that doing so cultivates students' historical

perspectives, dynamism, and creativity in responding to present-day health justice problems.

> [P]ostcolonial bioethics generates a vocabulary useful for considering important conceptual and temporal connections (1) between historical trauma suffered by people of color and current racial and ethnic inequalities in healthcare access and health status and (2) between colonial domination of people of color, epistemic violence, and underservice to people of color with mental illnesses (Rentmeester, 2012, p. 366).

When students learn to use such critical analytical perspectives, they draw upon a vocabulary that enables specific identification of what's unjust about a structure or situation. For example, applying justice theory to healthcare contexts requires that students understand that health justice is structural, not just distributive, and that modifying oppressive structures requires collaboration and collective action.

3. **Teaching health justice means helping students use theory to illuminate their practices of formulating and executing professional responsibilities.**

Along with our students we want to consider what justice theories and principles may require of health professionals (Beauchamp & Childress, 2009; Braveman et al., 2011; Powers & Faden, 2006). A health justice focus should include health professionals' obligations to promote health justice in arenas varying from the clinic to upstream social influences. One of the most important expressions of injustice in the context of health care involves oppression and the question of complicity in that oppression. How does one untangle individual obligations from collective professional responsibilities here? One of us (Stone, 2010) has tried to develop a robust justification of physicians' general obligations regarding social influences on health that would extend their duties upstream from and long prior to clinical encounters.

In other words, Stone argues that physicians' obligations to patients are population-based and not focused only on clinical encounters with individual patients. In contrast to Stone's view, Gruen, Pearson, & Brennan (2004) argue that physicians' obligations to advocate for patients are closer to their specific spheres of practice, which are conceived as "downstream" and nearer to actual clinical encounters with individual patients. Health professionals' obligations are a major focus in our program for two reasons: (1) many or most bioethics graduate students are health professionals who will consider what they should do regarding health justice problems, and (2) many graduates will be positioned to educate and advise health professions students, post-doctoral trainees, and fellow practitioners about what health justice demands.

4. **Specific moral values play a role in health justice education, skill development, and collective responses to health justice problems.**

Stewardship is one key value (Lee et al., 2013, p. 17) in justice theory and ethics education that relates importantly to affective learning. That is, the United States (U.S.) healthcare system, its personnel, and its resources must be carefully and deliberately stewarded to respond consistently to inequalities in health status and healthcare access. Another key value in justice theory and ethics education is *solidarity* because it can motivate collective action (Reichlin, 2011). One strategy for helping students learn about *solidarity* as a value is to help them cultivate an appreciation of the historical contexts for the problems that situate some patients' poor health. "History," for example, "illustrates both how tenacious and variable systems of oppression are and how dynamic and creative we must continue to be to rise to the challenges they pose" (Bell, 2007, p. 1).

One affective feature of the values of *stewardship* and *solidarity* is how one orients oneself to the project of collective action. Although individual growth and action are important in health justice work, modifying oppressive and unjust system-level structures generally requires collaborative leadership and collective action. Students need facilitated formal learning opportunities to become familiar with this skill set (Earnest, Wong, & Federico, 2010; Gruen et al., 2004; Kanter, 2011; Rich, 2011; Stone, 2010). They also need support and direction when they struggle with the reality that such a small proportion—only about 10%—of a person's overall health is influenced by direct health services (Schneider, 2011, p. 490).

So, we've just canvassed the four domains that we have defined as important to a bioethics graduate program that emphasizes health justice. Next, we describe how further scholarly attention to these domains can generate innovations in health justice pedagogy.

Important Areas for Innovation in Health Justice Pedagogy

The kinds of health justice situations students study and prepare themselves to encounter need to be frequently updated because important variables—such as government policies, social and cultural trends, and best practice standards, for example—can change over time. For instance, broad and pervasive racial and ethnic inequalities in access to health services were not recognized in the health literature prior to the 1970s, except by those with rare foresight. As another

example, the routinization of costly biotechnological and pharmaceutical advances to screen for and treat cancers such as cervical and breast cancer (Partridge, 2013), and unequal access to those advances, suggest that these kinds of injustices in healthcare should now be considered foundational content in health justice teaching. Also, in keeping with recommendations from Lee and colleagues (2013), students need practice in moral reasoning about real-life situations (p. 17). Accordingly, in the next section, we map interesting and important avenues for further scholarship into the future of health justice pedagogy.

Critical Pedagogy Regarding Solidarity in Health Justice Studies

As we've suggested above, *solidarity* is one important educational value in health justice teaching and learning. But if we are to effectively motivate collective responses to health injustices, there is still a need for health justice scholars and teachers to help students clarify the nature and scope of healthcare professionals' responsibilities and public roles in modeling and exercising this value regarding health and healthcare.

Expressing solidarity through collective action is one theme to explore more deeply as one strategy for helping students productively integrate this value and to respond to their frustrations about patients who seem to "fall through the cracks" in our healthcare system. These cases happen at the intersection of the clinical encounter and systemic social injustices. For example, healthcare professionals can organize to draw upon their social power, authority, and solidarity (Reichlin, 2011) to try to improve the upstream social, cultural, and environmental conditions that influence health status and health outcomes over the long-term. The pedagogical literature on justice teaching can evolve to explore questions such as these: How can bioethics students—undergraduate, graduate, or health professions—become involved in such organizing? What does the value *solidarity* mean for them?

Energizing Collective Action

Currently, few pedagogical resources exist for teachers trying to help students navigate their way through the limitations of clinical encounters with patients who "fall through the cracks." That is, students often struggle with how to help people whose most critical vulnerabilities come from factors, such as poverty, which are beyond what can be dealt with in clinical encounters. If students feel too overwhelmed by that reality, they might become alienated or demoralized and dismiss health justice problems as intractable. Some of us have turned to literature on leadership to learn how best to help students with this

feature of learning about and responding to health justice problems.

There are numerous useful resources for how to be leaders in motivating structural changes that could promote better health on a community level (Earnest et al., 2010; Gruen et al., 2004; Kanter, 2011; Rich, 2011; Stone, 2010). Often, however, learners can still wonder how to forge links between leadership, solidarity, and energizing collective action to address structural injustices that affect health. As mentioned, bioethics students need opportunities to cultivate historical perspectives regarding the origins of structural injustices to help manage their frustrations with the limits of clinical expertise in solving patients' problems. When cultivated, these historical perspectives can help foster affective learning and offer motivation for addressing injustices.

We have argued that teachers of bioethics are well-positioned to help learners develop critical consciousness and long-term investment in identifying and problematizing one's own and one's profession's biases in social encounters. A remaining question is, *which strategies help students establish awareness of their own patterns of perception and behavior that might undermine their effectiveness with patients and others?* This ethical and empirical question is an example of the kind of inquiry into affective learning that health justice scholars and teachers should investigate further.

Narrowing the Gap between Conceptual and Affective Learning

Curricular content in health justice typically focuses on theory. This is important conceptual content, but it should be complemented with efforts to challenge and support students' affective learning about their personal motivations to respond to injustice. We've suggested that one way to narrow the gap between conceptual and affective learning about health justice is by cultivating more historical perspective on oppression and its influences on health in order to generate students' greater sense of connection with historically entrenched sources of health injustices. Another strategy we've suggested is to critically examine one's ancestral or one's own membership in groups that are oppressed, oppressors, or both. Such self-reflection can promote realizations about one's roles in perpetuating health injustices. More strategies need to be developed about how to investigate and explore these kinds of group memberships.

Toward this end of narrowing the gap between conceptual and affective learning, one of us (Rentmeester) invites students in her course to articulate multiple ways in which our identities are constituted. For example, a person might be a

member of an oppressed group (or several) and a member of a privileged group (a poor white man, a wealthy white woman, a wealthy woman of color, a child with a disability).   This exercise sounds straightforward. But explaining how multiple layers of oppressed and empowered identities can constitute a person's moral, social, and cultural identities and group membership is challenging.

One source of this challenge is that our identities are created not only through the subject's viewpoint, a first-person perspective, but also through third-person perspectives that can misrepresent others' identities. Misrepresentation needs to be problematized when it happens, and it needs to be done in ways that take a long view of affective learning. That is, constructively approaching misrepresentation of minoritarian identities, in particular, should avoid threatening or alienating students because some perspectives (particularly those with a tendency to misrepresent minoritarian identities) might have been identity-constituting over long durations. Identity-constituting views (even those that are misrepresentational and problematic) will often not change quickly or within the span of one course, even a good one.

Students (and teachers) need support and time to explore the pluralistic features of identities, their sources of fallibility, and their sources of misrepresentation. Students (and teachers) can have intense emotional responses to learning about (and teaching about) the complex and multi-layered nature of biases, attitudes, and habits of perception that percolate and bubble up during identity-explorations related to health justice. Continued theoretical and practical work on these questions about identities can help us cultivate self-understanding and help us to determine whether and how our actions ameliorate or exacerbate health injustice.

One Program's Curricular Design to Teach Health Justice

As we've suggested, our program can be used as a case study for considering content and methodological innovation in health justice pedagogy.   The health justice and vulnerability themes begin in the first required course, as seen in Table 1, and continue throughout the program.

As seen Table 1, our Practicum is a later course, which moves students from theoretical levels of inquiry to practical experience in care settings for vulnerable patients. This course is one part of the curriculum in which students consider ways in which theory influences practice and ways in which practices illuminate important merits and drawbacks of justice theory. The focus, in the next section, however, is three key non-experiential courses in our program and how

they respond to the imperatives of health justice pedagogy we've just described.

Setting the Foundation: *Health Policy and Ethics*

In the Health Policy and Ethics course, students are assigned readings and videos that emphasize the health care challenges for people who are vulnerable. We consider how health policy is formed, how resource allocations are made, and many attempts at health care reform in the U.S. and in other countries. We notice intersections among ethics, health justice, cumulative disadvantage, public health, and social and cultural determinants of health.   Students view the documentary, *Sick Around the World,* which describes health care systems and policies in several countries including the U.S. (Palfreman, Neuburger, & Reid, 2008).   One student's comment in end-of-term evaluations of the course suggests an appreciation of an opportunity to consider justice in healthcare contexts: "The class . . . helped me see how justice applies to healthcare." Specifically, students are led to see, learn, and reflect upon value differences among populations in the world, particularly those concerning solidarity and health justice.   They further reflect on one another's reactions to course content as they engage in weekly discussions with their colleagues about how solidarity and health justice are expressed in health care systems in the U.S. and other countries. This approach lays the foundation for the concept *solidarity* as a core moral value in health justice studies.   Course evaluations report that 90% of students strongly agreed or agreed that the course readings and assignments contributed to their meeting the course objectives.

Preparing Students for Critical Analysis: *Social and Cultural Contexts of Bioethics*

In the Social and Cultural Contexts of Bioethics course, we consider how meaning is made and who is in charge of controlling how that is done. The course introduces students to anthropological approaches to globalization, U.S. health care, power issues, and autonomy. Students learn to look for what is not overt in many bioethics discussions, to focus on the margins, and to understand why the unobvious is crucial to making meaning. They discover that autonomy is neither the exclusive property of the individual nor under her control, but rather a dynamic negotiation among factors such as the present circumstance, emotions, relationships, past experiences, interdependency, and various kinds of power. This course disrupts the dominant cultural tendency to focus on individual patients in health decision-making. It reveals new and complex interactions that influence

Table 1
Master of Science in Health Care Ethics Curriculum with Abbreviated Course Goals and Descriptions

Core Courses	#	Abbreviated Descriptions (Course prerequisites are noted with 'P'.)
Scholarly Reading and Writing	600	Generate clear, precise writing that accurately credits and incorporates others' work.
Health Policy	601	Explore health policy in light of social justice and human rights.
Research Ethics	602	Consider historical abuses to present global research with special attention to research subjects from populations that are vulnerable.
Law and Health Care Ethics	603	Explore ethical and legal themes in landmark cases in bioethics and distinctions between ethical and legal approaches to reasoning.
Social & Cultural Contexts of Healthcare	604	Consider social and cultural constructions and interpretations of major themes in bioethics, such as identity, autonomy, and power.
Philosophical Bioethics	605	Explore critical approaches to ethical reasoning and epistemological challenges in moral judgment in healthcare contexts. P: 601 or 602.
Theories of Justice	606	Explore macro-level critical approaches to ethical reasoning in healthcare and health policy with a focus on oppression and marginalized groups and identities. P: 601, 605.
Practical Ethics	607	Apply basic concepts and deliberative methods of institutional ethics committees.
Practicum	608	Analyze and develop responses to ethical issues shaped by organizational, community-based, or policy-based structures, focus on populations with vulnerability. P: 601-607.
Capstone	609	Apply insights and skills acquired in prior courses to a compelling ethical or justice problem identified in the Practicum, generate a scholarly paper. P: 601-608.
Sample Elective Courses		
Ethical Aspects of End-of-Life Care	614	Critical analysis of end-of-life care practices, such as life-sustaining interventions, physician-assisted suicide, euthanasia, palliative care, and terminal sedation.
Rescue and Transplantation: Manifestations of Scarcity and Power in US Health Care	619	Considers an anthropological point of view of the impact on society of a rescue-based health care system and the promotion of transplantation as a popular expression of acute-care-oriented ritual in health care.
Public Health Ethics	622	Explores the discipline of public health from an ethics perspective, including human rights, social justice, and health policy in global, national, and community contexts.
Catholic Bioethics	623	Introduces theological and philosophical foundations key to Catholic Church teachings on Magisterium, human dignity, and justice related to current controversial issues.
Oral Health Care: Intersection of Professional and Business Ethics	624	Considers dentistry's historical development as a health profession, oral healthcare and underserved populations, aesthetic treatments, advertising, and error management.
Health, Ecology, and Ethics	625	Considers intersections of justice, environmental ethics, and healthcare ethics related to the material conditions of human health, such as clean water, clean air, and habitable climate.

Note. All courses are 3 credits except 600, which is 1 credit.

students' understandings of the role of bioethics and health justice.

Averaging course evaluations from three different offerings of the course over three years indicates that 89% of students believed that the readings and assignments in the course were useful in achieving the course objectives. One student's comment in end-of-term evaluations suggests her integration of the course's theoretical content into her professional life: "Engaging content was very relevant to my professional role." Specifically, students explore the meaning of "us" and "other" from several different viewpoints such as eugenics, ill health, conformity, and projections of personal failings. They write about the concept *autonomy* using Anne Fadiman's *The Spirit Catches You and You Fall Down* as background (Fadiman, 1997). These approaches address context as a critical feature of health and identity.

Preparing Students to Think about How Policies Create Structures: *Theories of Justice*

This course manifests the content recommended in the literature for teaching about justice, and it addresses shortcomings in this literature that we've identified in an earlier section of this article. It focuses on two major points: (1) responsiveness to injustice requires being able to operationalize a vocabulary that can be used to specifically identify and name what's unjust about a structure or situation, and (2) such response often requires actions of collectives, not just individuals. The course evolved to address the conditions of health injustice that can directly undermine the therapeutic nature of clinical encounters. This course applies justice theory to healthcare contexts in ways that motivate students' understanding that health is structural, not just about the distribution of goods and services. This course also facilitates students' understanding that modifying oppressive structures requires collaborative stewardship, solidarity among healthcare professionals, and collective action.

Discerning intersections of an individual's obligations with collective responsibilities regarding oppression is one strategy for illuminating some of the most interesting, important, and complex expressions of injustice in the context of healthcare. As noted previously, the course draws upon feminist justice theory and postcolonial theory to focus on affective dimensions of struggling with one's own roles in perpetuating injustices that influence both health status and access to healthcare which may exacerbate the vulnerabilities of marginalized group members. According to overall course evaluation data among the last three iterations of this course during the last year, about 90% of students agreed or strongly agreed that the course's readings and written assignments effectively motivated their achievement of the course objectives. One student's comment in an end-of-term evaluation expressed her appreciation of the complexity of this material: "[This course] [m]aterial was important for students to be exposed to. Concepts presented were difficult subjects to reconcile in 8 weeks." Such a project of "reconciling" important major concepts illuminates another important affective dimension of learning: the cultivation of critical consciousness—*a la* Friere—and rigorous, but student-centered and supported interrogation of the multiplicity and simultaneity of our identities as oppressed and oppressors. Another student's reflection expressed her view that the course offered an opportunity to integrate her own personal and professional orientations to her life: "The information concerning justice, equality, actually the entire course[,] is applicable to everyday life in [s]ociety."

Preliminary Program Assessment and Outcomes

In addition to data gathered after each course, we also invite student's free narrative responses to questions in surveys when they graduate from the program. Graduates' comments from these exit-surveys over the past three years consistently demonstrate how they value the health justice content and pedagogy in the curriculum. We've culled graduate's comments from these surveys that specifically demonstrate their content-based and affective learning about justice. One graduate's comment is worth quoting here:

I knew that there were ethical concerns in my work in the hospital setting, but I did not know how to categorize or approach the issues. I now understand the influence of whiteness in health care delivery and policy-making, how systematic disadvantage and oppression influence health care outcomes, and the effect policies, law, and money can have on available medical treatment.

Other graduates commented that the program had made them more aware of health justice issues. One in particular noted, "It has awakened me to justice issues I had never before considered." Another important theme from program exit surveys were students' self-reports of affective learning, as expressed in terms of their attitudes toward those whom they serve. For example, one graduate noted the curriculum's positive impact on her attitude in working with and for persons who are vulnerable; she remarked that the program "enhanced and validated the social justice concerns for [vulnerable] populations that I had already begun to develop."

Conclusion

In this article, we have explored best practices in teaching with an emphasis on teaching about health justice. We offered rationale for the focus on health justice in graduate ethics education and advanced four recommendations for educators interested in designing graduate course work with a health justice focus: 1) teaching should motivate understanding of the causes of health inequalities; 2) complementary critical perspectives are helpful tools for analyzing injustices; 3) theory is used to frame conceptions of professional responsibility; and 4) moral values of *stewardship* and *solidarity* should play a role in health justice education. We have also identified three critical gaps in the literature regarding teaching health justice that include: 1) critical pedagogy regarding solidarity and stewardship, 2) energizing collective action, and 3) narrowing the gap between theoretical and affective learning.

Through sharing this description and analysis of the state of health justice teaching, we are committed to what Shulman describes as "putting an end to pedagogical solitude" (Shulman, 1993, p. 6). We've tried to show ways in which our curricular priorities express important points for which Shulman advocates: (1) sharing one's teaching, (2) documenting one's pedagogical work with one's colleagues, and, (3) contributing to on-going peer review by colleagues outside of one's university (Shulman, 1993). We agree with his articulation of the need for changing one's pedagogy from private to communal in orientation (Shulman, 1993). Thus, we share our approach to the "what," "why," and "how" of health justice teaching and learning.

References

American Society for Bioethics and Humanities: Task Force on Standards for Bioethics Consultation. (1998). *Core competencies for health care ethics consultation*. Chicago, IL: American Society for Bioethics and Humanities.

Beauchamp, T. L., & Childress, J. F. (2009). *Principles of biomedical ethics* (6th ed.). Oxford, UK: Oxford Press.

Bell, L. A. (2007). Theoretical foundations for social justice education. In L. A. Bell, & P. Griffin (Eds.), *Teaching for Diversity and social justice* (pp. 1-14). New York, NY: Routledge/Taylor & Francis Group.

Biggs, J. B., & Tang, C. (2011). *Teaching for quality learning at university: What the student does*. New York, NY: McGraw-Hill International.

Braveman, P. A., Kumanyika, S., Fielding, J., Laveist, T., Borrell, L. N., Manderscheid, R., & Troutman, A. (2011). Health disparities and health equity: The issue is justice. *American Journal of Public Health,*

Supplement   1(S1),   S149-S155. doi:10.2105/AJPH.2010.300062

Clapper, T. C. (2010). Beyond Knowles: What those conducting simulation need to know about adult learning theory. *Clinical Simulation in Nursing, 6*(1), 7-14.

Crenshaw, K., Gotanda, N., Peller, G., & Thomas, G. (1995). *Critical Race Theory: The key writings that formed the movement*. New York, NY: The News Press.

Diamond, R. M. (1998). *Designing and assessing courses and curricula: A practical guide*. San Francisco, CA: Jossey-Bass.

Dudzinski, D. M., Rhodes, R., & Fiester, A. (2013). Pedagogical goals for academic bioethics programs. *Cambridge Quarterly of Healthcare Ethics,   22*(3),   284-296. doi:http://dx.doi.org/10.1017/S0963180113000108

Earnest, M. A., Wong, S. L., & Federico, S. G. (2010). Perspective: Physician advocacy: What is it and how do we do it? *Academic Medicine, 85*(1), 63-67.

Fadiman, A. (1997). *The Spirit catches you and you fall down: A Hmong Child, her American doctors, and the collision of two cultures*. New York, NY: Farrar, Straus, and Giroux.

Fink, L. D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses*. New York, NY: Wiley.

Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY: Continuum.

Freire, P. (2005). *Teachers as cultural workers: Letters to those who dare teach*. Boulder, CO: Westview Press.

Geiger, H. J. (2006). What do we know? What do we need to know? What should we do? In A. J. Schulz, & L. Mullings (Eds.), *Gender, race, class, & health: Intersectional approaches* (pp. 261-288). San Francisco, CA: Jossey-Bass.

Grow, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly, 41*(3), 125-149.

Gruen, R. L., Pearson, S. D., & Brennan, T. A. (2004). Physician-citizens--public roles and professional obligations. *JAMA, 291*(1), 94-98.

Kanter, S. L. (2011). On physician advocacy. *Academic Medicine, 86*(9), 1059-1060.

Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. New York, NY: Cambridge Books.

Kolvenbach, P. (2001). An address on the commitment to justice in Jesuit higher education. *Studies in the Spirituality of Jesuits, 33*(1), 1-29.

Kumagai, A. K., & Lypson, M. L. (2009). Beyond cultural competence: Critical consciousness, social justice, and multicultural education. *Academic Medicine, 84*(6), 782-787.

Lee, L. M., Viers, H. W., & Anderson, M. A. (2013). The   presidential   bioethics   commission:

Pedagogical materials and bioethics education. *Hastings Center Report, 43*(5), 16-19.

Mezirow, J. (1983). A critical theory of adult learning and education. In M. Tight (Ed.), *Education for adults: Adult learning and education* (pp. 127-138). London, UK: Croom Helm.

Milligan, F. (1995). In defence of andragogy. *Nursing Education Today, 15*(1), 22-27.

Palfreman, J., Neuburger, J., & Reid T. R. (Directors). (2008). *Sick around the world.* [Video/DVD]. United States: PBS Video.

Partridge, E. (2013). Our failure to deliver and what we can do about it. *Distinguished Lecture Series,* Creighton University, Omaha.

Powers, M., & Faden, R. R. (2006). *Social justice: The moral foundations of public health and health policy*. New York, NY: Oxford University Press.

Quality Matters. (2014). Quality matters inter-institutional quality assurance in online learning. Retrieved from http://www.educause.edu/eli/events/eli-annual-meeting/2013/quality-matters-interinstitutional-quality-assurance-online-courses

Reichlin, M. (2011). The role of solidarity in social responsibility for health. *Medicine, Health Care and Philosophy, 14*(4), 365-370.

Rentmeester, C. A. (2012). Postcolonial bioethics: A lens for considering the historical roots of racial and ethnic inequalities in mental health. *Cambridge Quarterly of Healthcare Ethics: The International Journal of Healthcare Ethics Committees, 21*(3), 366-374.

Rich, E. C. (2011). Clinicians and health care advocacy: The reasons why. *Health care advocacy: A guide for busy clinicians* (pp. 1-12). New York, NY: Springer.

Schneider, M. (2011). *Introduction to public health*. Burlington, MA: Jones and Bartlett Publisher.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-23.

Shulman, L. S. (1993). Teaching as community property: Putting an end to pedagogical solitude. *Change, 25*(6), 6-7.

Stone, J. R. (2010). Saving and ignoring lives: Physicians' obligations to address root social influences on Health—Moral justifications and educational implications. *Cambridge Quarterly of Healthcare Ethics, 19*(4), 497-509.

U. S. Department of Health and Human Services. (2014). *Healthy people 2020: Topics and objectives: Social determinants of health.* Retrieved from http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=3

Welie, J. V. M., & Kissell, J. L. (2004). *Jesuit health sciences and the promotion of justice: An invitation to a discussion*. Milwaukee, WI: Marquette University Press.

Wiggins, G. P., & McTighe, J. (2001). *Understanding by design*. Upper Saddle River, NY: Education/Prentice Hall: Association for Supervision and Curriculum Development.

World Health Organization. (2012). *Social determinants of health: Report by the Secretariat.* Retrieved from http://www.who.int/social_determinants/B_132_14-en.pdf

Young, I. M. (1990). Five faces of oppression. *Justice and the Politics of difference* (p. 39-65). Princeton, NJ: Princeton University Press

_____

CHRISTY A. RENTMEESTER, PhD is the Director of the Ethics Resource Center at the American Medical Association and the Editor of the *AMA Journal of Ethics*. She was a professor for many years at the Creighton University School of Medicine, teaching health professions students and graduate students, and has published numerous chapters and articles in the areas of moral psychology and health professionalism, clinical ethics, mental health ethics, public health ethics, and justice theory.

HELEN CHAPPLE is an Associate Professor at Creighton University. Her bedside nursing experience includes home hospice, research, and critical care. She teaches ethics both online and on the ground to nursing seniors and to graduate students in the Masters in Health Care Ethics program. In 2010 her research on how dying happens in the hospital was published by Left Coast Press in a book called *No Place for Dying: Hospitals and the Ideology of Rescue*. Her research interests include dying persons as an underserved population n, the social implications of rescue and transplantation, hospital culture, and state policies regarding end of life care.

AMY HADDAD, PhD is the Director of the Center for Health Policy and Ethics at Creighton University and a Professor in the Department of Pharmacy Sciences. She holds the Dr. C.C. and Mabel L. Criss Endowed Chair in the Health Sciences at Creighton University. Her research interests include best practices in teaching and learning in the online learning environment, patient and health professional communication, and ethics in ambulatory clinical settings. She has taught in a variety of health professions programs and at the graduate level in health care ethics.

JOHN R. STONE, MD, PhD, is a physician (cardiologist) and philosopher/bioethicist; Professor, Graduate Faculty, Master of Science Program in Health Care Ethics of Creighton

University's Center for Health Policy and Ethics; and Co-Director of Creighton's Center for Promoting Health and Health Equality. John targets health inequities through scholarship, programs, and teaching. See his profile at: http://www.creighton.edu/chpe/people/facultystaff/johnstone

Oral History as an Innovative Language Teaching Technique for Spanish Heritage Language Learners

Clara Burgo
Loyola University Chicago

Oral history is presented in this article as an interpretative exercise for historical events in a Spanish course for heritage language learners at the university level. Through the interview of a Latino immigrant family, students re-examined the history of their own families and increased their linguistic self-esteem. They were guided to become good researchers and good interviewers so that they could lead the informants into offering other perspectives when telling their stories. At the same time students were engaged in the practice of oral history, they were initiated into research while improving their oral and writing skills in a formal setting. This article describes each stage of the oral history project and the advantages and limitations of this technique with the purpose of assessing this project in a Spanish course for heritage language learners' course.

In 2010 16% of the U.S. population was Hispanic or Latin@, and in Chicago 29% of the population was identified as Hispanic or Latin@ (U.S. Census Bureau Quick Facts, 2010). This data suggested that Spanish speakers are the largest immigrant group in the United States, and, therefore, there is a demand for Spanish courses for heritage language learners that our institutions have been trying to satisfy through curriculum development and creation of specific programs for this student population across the country. Additionally, most higher education institutions in the United States have a foreign language requirement. Due to the increase of this population, there are institutions that have advocated for rigorous placement methods for these students (as in L2 Spanish courses) via interviews, questionnaires, or even online placement exams (Burgo, 2013; Potowski, Parada, & Morgan-Short, 2012). Most of the Spanish heritage language learners in Chicago belong to the first or second generation of immigrants and have been exposed to Spanish to a certain degree, so they were placed into courses at an intermediate or advanced level. In this article, the use of oral history is proposed as an innovative teaching technique for a Spanish course for heritage language learners at the university level. This course was intended to connect the students with their heritage as they were developing communication skills in a formal register such as the discourse of the interview in the oral history project.

Oral History as an Innovative Teaching Technique to Assess Communicative Skills

Students who were placed in an intermediate or advanced level usually spoke Spanish at home or had some kind of earlier formal instruction in the target language. They tended to have native-like pronunciation and showed high competence in their conversational skills in informal settings, but they struggled with their oral and especially writing skills in formal or educational settings. One of the main objectives of this course was to expose students to the diverse dialectal variation in the Spanish-speaking world and to reinforce their reading and writing skills in order to facilitate the transfer of their literacy skills from English. They were also provided with opportunities to develop their communicative skills and to improve their vocabulary in academic settings through formal oral presentations of topics concerning Latin@ communities. In a course of these characteristics, there is a significant cultural component in which students learn about their heritage through readings of Latin@ and Latin American literature and by watching and discussing Latin American films. Due to the importance of increasing their cultural awareness, an important factor for assessing their linguistic skills (oral and written) while reconnecting with their community was through their final project: an oral history interview with a Latin@ immigrant family (their own family, if possible), one of the most important topics affecting the community.

Oral histories have a cross-disciplinary nature since narrative research has infiltrated many areas such as the humanities and social science disciplines as well as medicine (Ehlman, Ligon, Moriello, Welleford, & Schuster, 2011) and law. In fact, many world issues are described through the perspective of personal trauma stories. They become an encounter between politics and history with the ultimate objective of creating social change (Schuman, 2003). It has become a crossover methodology: widespread, practical, political, or historical. In the oral history project, the interview has become an innovative methodology since oral history became very popular across the humanities, bringing together experts from a variety of perspectives. The results were innovative findings via the interview from many contexts outside history, borrowing analytical techniques from other areas such as linguistics or literature. Ultimately, the process of interviewing cannot be separated from the outcome (Abrams, 2010).

How Can Oral History Be Implemented in the Classroom?

This methodology was presented as an innovative technique to make the students researchers of their own families' stories as a means to study recent history from a reliable source of information. The main objective of this project within the format of this course was to establish a link between their heritage and the classroom since the oral history of the community become a shared social identity (Shopes, 2002). We as educators are in search of life experiences of our students and their families that can be integrated in our curriculum. Oral history allows filling in blanks in history through the testimonials of the social aspects of history that are less documented (Swain, 2003). But what is oral history? It is a collection of individual recollections of the past or spoken memories based on an interview conducted by a researcher (Huerta & Flemmer, 2000).

The topic of this oral history project was the immigration experience of Latin@ families in Chicago. It focused on the causes and consequences of this kind of migration. Through this method, informants offered perspectives of how communities were constituted in a new environment (Olmedo, 1997). Students ended up engaged in the practice of oral history through their family testimonials, while at the same time strengthening their oral and written skills, by establishing a dialogue that allowed them to recover their experiences and write a report to communicate the testimonials.

Benefits of Using Oral History in a Spanish Course for Heritage Language Learners

During the course, students were trained to develop a research project using the following steps: outline the interview, select the questions, design the informed consent form, learn and use tips about how to perform a good interview, and write the final report. These aspects will be developed in the following sections. We will start explaining the main advantages for our students of this innovative teaching technique:

The interview resulted in an emotional journey through which students were given the opportunity to get engaged in the practice of history when interviewing the main characters of the recent history of their communities. Fortunately, this journey worked both ways: families were also thrilled to know that their stories were of interest. In linguistic terms, they improved their writing and personal communication skills at the same time that bridges were built across generations and across universities and families (Lyons, 2007).

Oral history has been shown to be an efficient vehicle for students to increase their knowledge of Latin@ immigration in the United States. Valenciana (2006) claimed that it was an underused teaching strategy that helped students reveal their families' stories and the development of the four communication skills: speaking, writing, reading, and listening. They acquired a deeper knowledge of the subject and of local and national history. In short, the interviewees' voices were heard, and histories were told in the first person.

Additionally, students felt comfortable with this method to develop an interpretation of history. They were expected to get a new understanding of history by seeing it as an active process with a continuous development of new questions to answer and new perspectives to research (Nix, 2009).

In Spanish courses for heritage language learners, immigration was one of the most relevant topics. Thus, students used the narratives created with oral histories to discuss and debate immigration issues. They worked to place historical events in the appropriate temporal frame as they were fighting against intolerance and violation of human rights (Valenciana, 2006). Furthermore, they ended up acquiring a critical perspective towards the history written in textbooks, understanding there was a conflict between memory and history (Whitman, 2000). The experiences of the families were a vivid example of history, and students created narratives to explain it. These experiences served the purpose of trying to eradicate stereotypes. For example, Olmedo (1997) conducted a study on Puerto Rican women who took leadership roles in immigration movements against stereotypes of submission.

There were other gains for students when this methodology was chosen. At a research level, students learned how to analyze data, select and summarize relevant information, and contextualize and increase their knowledge of historical events. In addition to becoming familiar with doing fieldwork and being trained as researchers, they could also improve their communication skills in order to perform successful interviews and to write their report.

In this course, culture and identity were integrated into the curriculum. Hence, a new perspective was offered by understanding culture through the use of direct sources. It was a rare opportunity to learn about culture through those who directly had experienced it in their own words; the human voice could convey more than the written page (Weatherford Stevens & Lathan, 2009). In fact, this was an antidote toward apathy for textbooks (Sitton, 1983). Students were excited about their oral presentations, PowerPoints, and any opportunities in the classroom to display their work (Huerta & Flemmer, 2000). By validating their families' knowledge as a part of history, students felt

more confident and proud of their heritage since they appreciated that their families' knowledge became part of the university curriculum.

Furthermore, a new conceptualization of multicultural education emerged through the collection of immigrants' history (Olmedo, 1997). Then, they were trained to become active producers of historical knowledge. Oral history gave them access to distinctive information to complement traditional materials. That is, they aimed to experience history in action (Weatherford Stevens & Latham, 2009). This experience resulted in high engagement of students in documenting history (Huerta & Flemmer, 2000).

The interviewing process seemed more effective in order to learn tolerance since it allowed students to establish a dialogue with those who make history and made them responsible for transmission of their testimonials (Sepúlveda, 2000). A bridging point was then established between narratives of identity and narratives of history. In the earlier, we lived with the past as part of our identity; in the latter, we lived with the past as it was (Gardner, 2003).

The Power of the Interview: How to Accomplish a Good Interview

Oral history interviews were understood as a window into our students' stories at the same time they became a strong link connected to local history (Hostetter, 2009). Due to the power of the interview as a method to collect memories, we recommended students to become familiar with the topic of immigration. Most of our students were second generation, so this was a topic that was by no means new to them. Then they started working on the design of a consent form so that they could use the interviews for classroom purposes. We started with the information that the consent form might include: objectives and description of the project, informants' rights and their identity protection, the use of the interviews, the researcher's contact information, signatures of both the researcher and the informant, and the date. Then, students had to develop a plan with questions to think about following Taylor's methodology (2011). Some of them were already included in the consent form: the objective of the project, the selection of the Latin@ immigrant family, the reason that the selected family was a good representative of their community, and the information that was needed to be collected about the family. After doing this, we were able to proceed to the interview. Lyons (2007) provided a few tips to achieve a successful interview: the interviewer should make the informant relax by engaging in a casual conversation and establishing a personal rapport. He/she could also take notes during the interview and should be ready to

improvise and ask follow-up questions encouraging personal stories that could not be found in the textbooks: that is, information about the daily life of ordinary people that was not available through any other sources. This exercise gave voice to the community. On one hand the interviewer found an answer to his/her questions, and, on the other hand the informant found someone who was interested in what he/she had to say and responded to his/her human need of finding meaning to his/ her existence.

According to Legard, Keegan, and Ward (2003), in the first phase the interviewer had the difficult task of establishing a good rapport with the informant until he/she felt comfortable, which was key to achieving a successful interview. In order to achieve this, the setting must be satisfactory: in a quiet room with minimal background noise. Then, the research topic and the purpose of the study were introduced. We taught students how to compile all the demographic information they could obtain from their informants at the beginning of the interview in order to contextualize their experience and to interpret their testimonials. The data were collected in form of warm-up questions. From then on, thoughtful questions could be formulated so that informants could tell narratives and life experiences. The interviewer's task was leading the informant to discuss the crucial topics at a deeper level. Students had to keep in mind that one of the main objectives of the interview was obtaining detailed stories from the informants, giving them the opportunity to clarify contradictions and to reflect over what their life experiences meant in the past and what they mean now. The interview could take the form of a casual conversation or an exercise of reflection. What really mattered were both this new knowledge of the past and the interpretative perspective. Close to the end of the interview, it was very important to indicate in a subtle way that the interview was coming to the end so that the informant could finish with all the details he/she wished. Finally, the last phase referred to what happened when the voice recorder was off: thanking the informant and explaining how his/her testimonial contributed to making history. Sometimes there were conclusions, and the final remark consisted of taking care of the informant's well-being after the interview.

During the last weeks of the course, students selected short clips of these videotaped interviews, which were each approximately one hour long, to be presented to the rest of the class. Since we had a video recording of the interview, it was necessary to pay attention to the verbal and non-verbal language. In short, what really mattered was the dialogue. Throughout the process of the interview and the preparation of the oral presentation in class, we focus

students on working on the outcomes of the course: using the oral history project to improve their communication skills, as well as building their linguistic self-esteem at the same time they reconnected with their heritage culture.

Leading Students to Create Questions to Be Included in the Interview

In the middle of the course, we started working on the modules of questions the students needed to ask in order to achieve a successful interview. These questions mostly had to do with the daily life of the informants.

This is the list of modules that students were offered so that they could use them as a start point (see Appendix):

1. Family, childhood, school, first job
2. Experiences at work
3. Your life in the U.S.
4. Cultural assimilation
5. Final reflections

Training Students to Be Good Interviewers

The interviewer should understand what being a good interviewer entailed: he/she had a moral and ethical responsibility with the informant so he/she should be a good listener, have a logical mind and, finally, have a good memory (Legard et al., 2003). Whitman (2000) recommended becoming familiar with the principles and standards of the Oral History Association to develop these qualities before starting the project.

Since oral history depended on a well-structured interview, the role of the interviewer was to act as the guide of the content and context of the interview (Taylor, 2011). As Taylor explained, it was essential to be familiar with the equipment and make sure it worked properly to avoid any technology issues during the interview. Also, the set of modules and questions had to be very well prepared with little room for improvisation, above all for those inexperienced in these kinds of interviews. The questions should be open-ended so that stories were elicited. In order to become a good interviewer, one has to be a good researcher. Thus, we urged students to get all the information they could about the topic so that they could prepare relevant questions. If they were able to transmit their interest on the interviewee, he/she would feel special and important and would be more willing to tell more stories.

It was necessary to begin with a pre-interview with the purpose of getting to know the informant and making him/her aware of his/her rights and the purpose of the project. Informants should feel comfortable enough to trust the interviewer in order to be honest to speak their minds (Rings, 2006). As part of the training, students not only had to be familiar with the

demographic information of the informants, but also had to work on their social skills and qualities such as empathy and sensitivity (Bornat, 2003). In Clinchy's words, they had to "refrain from judgment" (1996. p. 216). Fears from both sides had to be overcome, and also their desires had to be met (Garrett, 1942). They also had civic responsibilities as interviewers whose goal was to transmit the message that informants' stories were worth being told (Whitman, 2000).

One of the most delicate tasks for the interview to be successful was that students managed to ask difficult questions without upsetting the informants (Behar, 1996). As it was mentioned earlier, a good interviewer was a good listener and chose the right questions to elicit a good testimonial. Silence was okay, and time was not an issue for the interviewer or interviewee (Taylor, 2011). Once the interview was over, it was time to analyze the historical value of the project to keep writing history.

Teaching Students to Write the Report

As part of the research process, the consent form was included at the beginning of the report where the agreements between the interviewer and the subject were displayed in terms of protection of his/her identity and rights. The report had to have an organized structure. The first part provided the description of the methodology, the setting of the interview, and the selection of the questions. Then, after providing the subject's demographic information, the most rigorous part of the project, the interview, was described with intellectual honesty.

When assessing the interview, the following factors had to be considered: who the interviewer was, who the narrator was, what was being told, and what the purpose of the interview was (Shopes, 2004). Lastly, it is recommended to remind students that the most important part of the project was assessing the historical value of the interview and its placement in the recent history of the Latin@ communities in the United States. We can summarize the steps for leading students to conduct the oral history project as shown in Figure 1.

Shortcomings of Oral History

Oral history is a transformative process of listening and retelling. Since it was impossible to transmit the story precisely when speaking in the name of somebody else, it was very important to be faithful to the testimonial and avoid the distortion of history (Pollock, 2006). In order to achieve this goal, the interviewer attempted to understand the informant's perspective. Therefore, he/she needed to ask for clarification or follow-up questions as needed. On the other hand, there were subjective factors (e.g., the psychological

Figure 1
Steps of the Oral History Research Project

1. Consent Form

2. List of Modules for the Interview

3. The Interview

4. The Written Report

characteristics of the interviewer and his/her political ideologies, his/her attitudes towards the topic of the interview, or the opinions and experiences of the informant) that might influence the interpretation of the story (Sepúlveda, 2000). As a consequence, the selection of the informants should be performed rigorously, and the sample must be representative of the community.

One important limitation was to overcome the gap between the culture and circumstances of the interviewer and those of the informant. The interviewer was usually in a more privileged situation, at least in terms of immigration status, since most of them were U.S. citizens. Therefore, he/she had to do his/her best to make the informant comfortable to narrow down this gap. Another point worth mentioning was the lack of clarity about the historical questions this methodology was expected to address. Narrative identity had a central role in individual memory, the primary goal of which was coherence instead of factual accuracy (Gardner, 2003).

Regarding the setting, the presence of other people during the interview might be an important problem. This factor could influence the informant by making him/her feel intimidated to express his/her mind about the topic. Due to the Observer's Paradox, the "artificiality" of the interview might intimidate the informant when trying to achieve a natural conversation. Therefore, we faced a difficult task by making him/her forget he/she was being recorded..

In order to achieve this, the selection of the questions was very important. The objective was that they could relax and speak their minds with honesty. Since the interview was video-recorded, the interviewer was responsible for the editing and organization of the story. Thus, the interviewer had a big responsibility in being faithful to the story: that is, being objective before, during, and after the interview (Taylor, 2011). Students had to bear in mind that the main character was the informant, so the interviewer had to give him/her that place. One way of doing so was by avoiding interruptions or corrections. As a resource for studying testimonials, they could count on databases. Despite the enormous advantage of the existence of

databases, the context of the words might change, and much is lost in the process (High & Sworn, 2009).

One disadvantage that could be found was the information told by the people who were interviewed. Many informants confused events and were not very accurate in the practice of oral history. This implied selective memory or mistakes in the their memories (Lyons, 2007). Despite the vitality of the human element that added the oral history methodology, it could be used as a supplementary teaching tool, but not as the only one (Huerta & Flemmer, 2000). Oral history had to be understood with its limitations. That is, it could not be the only historical source to recreate the past (Whitman, 2000). Even when original interviews were unanalyzed, an oral historian should evaluate the interviewee's background to understand the potency of the interview. The interviewer had to be careful with the questions he/she asked and the outline he/she planned to follow so that they did not restrict the interviewee too much by maintaining a listening approach (Taylor, 2011).

Assessment of the Oral History Project

Since this was a conversation course, a high percentage of the grade for the final project involved the oral presentations which the students did for their classmates during the last two weeks of the course. During this presentation, students could show clips of the interview with the most relevant parts. Here the content and the form of their presentation had equal weight. Regarding the content, the presentation was required to have an organized structure (i.e., introduction, relevant ideas of the interview, and conclusion), a good selection of questions, and a synthesis providing a summary of their experience as researchers and of the main ideas of the testimonial. Concerning the form, their use of language was assessed (i.e., grammar, appropriate vocabulary for a formal register), their use of the audiovisual equipment, and their non-verbal language during the presentation.

The remaining percentage of the grade was dedicated to the written report. This report was turned in a day after the presentation and was expected to be a

Figure 2
Evaluation Criteria for the Oral History Project

Oral Presentation (75%)
1. Content
2. Organization (Introduction, Cohesion and Development of Ideas, Conclusion)
3. Discussion (Interpretation of the Interview)
4. Language

Oral History Report (25%)
1. Content
2. Organization (Introduction, Cohesion and Development of Ideas, Conclusion)
3. Discussion (Feedback from Instructor and Peers, Interpretation of the Interview)
4. Language

critical reflection including a good summary of the interview and their oral presentation and the feedback provided from the instructor and their classmates. Additionally, language use was also taken into consideration. A CD with the video of the interview had to be attached to the report. As Taylor (2011) suggested, a documentation sheet of the CD should include the following information: names of the interviewer and interviewees, place and date of the interview, and field notes with a summary or abstract of the interview. An assessment of the oral history project is proposed in Figure 2.

As mentioned in a previous section, there are plenty of benefits for students in using oral history in a Humanities course. Fortunately, since oral history is applied across disciplines, there is also research in other areas that predicted positive assessment by students as well. In a study conducted by Ligon, Ehlman, Moriello, and Welleford (2009) on students' attitudes towards using oral history in a gerontology classroom, they found more positive reactions after using this technique with older adults and the aging process. Therefore, Ehlman and colleagues (2011) argued that it was a successful method of addressing attitudinal changes in the classroom because of its transformational learning experience.

Pedagogical Implications of Oral History Projects in the Latin@ Community

A community history describes a group of people with a common identity looking at its social, political, and historical development, as well as other social factors such as economic growth, educational backgrounds, ages, and religious beliefs. Through family histories, each member contributed to the community history (Taylor, 2011). Since we have been going through anti-immigrant times and with an immigration reform that is still on hold, it was important to give voice to the Latin@ community in a

city like Chicago, where the population is significant in number but the community is still struggling for its rights. Through oral history, we could contribute to empower the community; memory became the subject and the object and it could be studied through different approaches such as linguistic, cultural, or ethnographic ones when analyzing the interviews (Thomson, 2007). This multidisciplinary facet made oral history an incredible tool to implement in the classroom and an opportunity for including the community in the university curriculum. Oral history could serve as a significant resource for making transformative histories along the line of the mission of some institutions, and therefore, having a significant impact in a community that had been silenced in the past since it did not follow the mainstream ideology by promoting social change. As Mendoza (2012) pointed out, Latin@s not only adapted as needed, but also strived to change the world in many ways through community advocacy, art, or teaching among others. They did not only aspire to aiding the survival of the community, but also to finding an equal position in the democracy by assuming these roles of change facilitators: collective action was needed to preserve the well-being of the community.

According to Bischoff and Moore (2007), oral history projects also serve many other purposes such as: creating a forum to share interviewees' emotional life stories; giving value to their lives in the background of their communities, which is usually undervalued in the larger society; revealing the details of social movements; and stirring courage for action for the sake of protecting their human rights. Overall, teaching through oral history cultivates a spirit for justice and peace. In fact, oral histories generally have an explicit social agenda, and oral historians tend to be biased in the relationships they establish with the people they interview and how they plan to use their work. Making histories is a craft formed by cultural and political conventions (Schuman, 2003). Since oral histories can be used interdisciplinary, educators should consider

creative and innovative ways of applying them inside and outside the classroom. One way of doing so could be through service learning. Reising and Spivey (2005) provided a service learning opportunity in a sociology class with a Center for Community Action; it involved local subjects recollecting stories of the social changes in their county for the last 50 years. Students had the task of recording and transcribing data that were going to become the basis for a book. In this way, students could provide service to their community, and, from a pedagogical perspective, they could gain experience in social changes and in research methodology.

Concerning pedagogical implications beyond language and culture, this method could bring students from different disciplines and interests together and could allow them to apply assorted analytical tools in order to make their own interpretation of history.

Conclusions

Oral history is an interpretive event rather than a search for historical events. Therefore, this methodology had pedagogical as well as linguistic implications. Our expectation as educators was to make our Spanish heritage language learners reconnect with their culture and heritage through the oral history process. As they interviewed Latin@ immigrant families, they re-examined the history of their own families and raised a respect for their community and ultimately for themselves. This project extended to the community when incorporated in the university curriculum.

In sum, this article attempted to provide a description of the step-by-step oral history process in a Spanish course for heritage language learners and the benefits of choosing this methodology at linguistic, cultural, and multi-disciplinary levels in order to understand its assessment and pedagogical implications in the Latin@ community.

References

Abrams, L. (2010). *Oral history theory*. London, UK: Routledge.

Behar, R. (1996). *The vulnerable observer: Anthropology that breaks your heart*. Boston, MA: Beacon Press.

Bischoff, C., & Moore, M. E. M. (2007). Cultivating a spirit for justice and peace: Teaching through oral history. *Religious Education*, *102*(2), 151-171.

Bornat, J. (2003). A second take: Revisiting interviews with a different purpose. *Oral History, 31*(1), 47-53.

Burgo, C. (2013). Spanish in Chicago: Writing an online placement exam at the university level. *Borealis-An International Journal of Hispanic Linguistics, 2*(1), 199-207.

Burgo, C. (2014). Sobre la historia oral como recurso de representación en cursos de conversación para hablantes de herencia. In C. Leco, M. Beltrán-Vocal, & J. Lazú, (Eds.) *Latin@/ American Images: Transnational Identities. Imágenes Latinas y latinoamericanas: identidades transnacionales* (pp. 23-36). Morelia, Mexico: Escuela Nacional de Estudios Superiores UNAM.

Clinchy, B. M. (1996). Connected and separate knowing: Toward a marriage of two minds. In N. R. Goldberger, J. M. Tarule, B. M. Clinchy, & M. E. Beienky (Eds,), *Knowledge, difference, and power* (pp. 205-247). New York, NY: Basic Books,

Ehlman, K., Ligon, M., Moriello, G., Welleford, E. A., & Schuster, K. (2011). Oral history in the classroom: A comparison of traditional and on-line gerontology classes. *Educational Gerontology*, *37*(9), 772-790.

Gardner, P. (2003). Oral history in education: Teacher's memory and teachers' history. *History of Education, 32*(2), 175-188.

Garrett, A. (1942). *Interviewing: Its principles and methods*. New York, NY: Family Service Association of America.

High, S., & Sworn, D. (2009). After the interview: The interpretive challenges of oral history video indexing. *Digital Studies/ Le champ numerique, 1*(2). Retrieved from http://www.digitalstudies.org/ojs/index.php/digital_studies/article/viewArticle/173/215

Hostetter, D. (2009). Reflections on peace and solidarity in the classroom. *Peace & Change*, *34*(4), 504-509.

Huerta, G., & Flemmer, L. (2000). Using student-generated oral history research in the secondary classroom. *The Social Studies, 91*(3), 110-115.

Legard, R., Keegan, J., & Ward, K. (2003). In-depth interviews. In J. Ritchie & J. Lewis (Eds.), *Qualitative Research Practice: A guide for social research students and researchers* (pp. 138-169). Thousand Oaks, CA: SAGE.

Ligon, M., Ehlman, K., Moriello, G., & Welleford, E. A. (2009). Oral history in the classroom: Fostering positive attitudes toward older adults and the aging process. *Journal of Aging, Humanities, and the Arts*, *3*(1), 59-72.

Lyons, J. F. (2007). Integrating the family and the community into the history classroom: An oral history project in Joliet, Illinois. *The History Teacher*, *40*(4), 481-491.

Mendoza, L. G. (2012). *Conversations across our America: Talking about immigration and the Latinization of the United States*. Austin, TX: University of Texas Press.

Nix, E. (2009). Constructing public history in the classroom: The 1968 riots as a case study. *The*

Public Historian, 31 (4), 28-36.

Olmedo, I. (1997). Voices of our past: Using oral history to explore funds of knowledge within a Puerto Rican family. *Anthropology & Education Quarterly, 28*(4), 550-573.

Pollock, D. (2006). Memory, remembering and histories of change. A performance praxis. In D. S. Madison & J. Hamera (Eds.), *The Sage handbook of performance studies* (pp. 87-105). London, UK: Sage Publishing.

Potowski, K., Parada, M., & Morgan-Short, K. (2012). Developing an online placement exam for Spanish heritage speakers and L2 students. *Heritage Language Journal*, *9*(1), 51-76.

Reising, B., & Spivey, M. (2005). Service learning: Service through oral history projects. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *79*(2), 69-70.

Rings, L. (2006). The oral interview and cross-cultural understanding in the foreign language classroom. *Foreign Language Annals*, *39*(1), 43-53.

Schuman, A. (2003). Oral history. *Oral tradition, 18*(1), 130-131.

Sepúlveda, P. G. (2000). Historia oral en el aula. *Clío, History and History Teaching, 15, Retrieved from http://clio.rediris.es/clionet/articulos/oral. htm*

Shopes, L. (2002). Oral history and the study of communities: Problems, paradoxes, and possibilities. *The Journal of American History*, *89*(2), 588-598.

Shopes, L. (2002). Making sense of oral history. History matters: The U.S. survey course on the web. Retrieved from http://historymatters.gmu.edu/mse/oral/

Sitton, T. (1983). *Oral history: A guide for teachers.* Austin, TX: University of Texas.

Swain, E. (2003). Oral histories in the archives: Its documentary role in the twenty-first century. *The American Archivist, 66*(1), 139-158.

Taylor, E. (2011). *Conducting oral histories: A student's guide to a successful interviewing experience.* Bloomington, IN.: AuthorHouse.

Thomson, A. (2007). Four paradigm transformations in oral history. *Oral History Review*, *34*(1), 49-70.

U. S. Census Bureau Quick Facts.   (2010). Retrieved   from https://www.census.gov/quickfacts/table/PST12 0215/1714000,00

Valenciana, C. (2006). Unconstitutional deportation of Mexican Americans during the 1930s: Family history and oral history. *Multicultural Education*, *13*(3), 4-9.

Weatherford Stevens, K. & Latham, B. (2009). Giving voice to the past: Digitizing oral history. *OCLC Systems & Services, 25*(3) 212-220.

Whitman, G. (2000). Teaching students how to be historians: An oral history project for the secondary school classroom, *The History Teacher, 4*(33), 469-481.

_____

CLARA BURGO is an Assistant Professor of Spanish at Loyola University Chicago. Her teaching and   research   interests   are   sociolinguistics and Spanish for heritage language learners.

Acknowledgements

Appendix

Modules for the oral history interview

Family, childhood, school, first job:
Tell me about your family and childhood.
What are the memories you have about your school years?
How was the neighborhood where you grew up?
Do you remember your first job?

Experiences at work:
How do you like your job?
How many jobs have you had since you arrived here?
Describe your work experience in your country of origin and compare it to United States.

Your life in the U.S:
Tell me about your life here. Do you like it here? How many years have you been living here?
Do you miss the country where you were born?
What does it mean for you to be an immigrant?

Cultural assimilation:
What have been the positive and negative aspects of your life in the U.S.?
What have been the biggest challenges for you and your community? How could they be solved?
Would you like to eventually move back to your country of origin?

Final reflections:
What advice would you give to other immigrants in your situation?
Can you compare your life as an immigrant when you moved to this country and the life of recent immigrants now?
Is it easier or harder to be an immigrant nowadays?

(Adapted from Burgo, 2014)

Effective Instruction for Engaging Culturally Diverse Students in Higher Education

Lois A. Yamauchi and
Kazufumi Taira
University of Hawai'i

Tracy Trevorrow
Chaminade University

Engagement is related to important student outcomes such as persistence, retention, and grades. It is key to all students' learning, but it may be particularly important for culturally diverse students who may have fewer models and other resources for keeping themselves engaged. As the institutions of higher education become increasingly culturally and linguistically diverse, instructors are challenged to engage a more diverse student population. This paper describes how three university instructors applied the Center for Research on Education, Diversity, and Excellence (CREDE) Standards for Effective Pedagogy to their instruction in courses of general psychology, educational psychology, and statistics in order to increase students' cognitive and social engagement. The CREDE Standards are strategies of instruction that incorporate small group discussions and making connections between students' prior experiences and abstract concepts.

The purpose of this paper is to present strategies to engage culturally diverse students in higher education. Academic engagement is multidimensional (Carini, 2012), consisting of behavioral, cognitive, emotional, and social investment (National Research Council, 2004). Behavioral engagement includes observable actions, e.g., coming to class, completing assignments, and persisting in academic programs. Cognitive engagement includes students paying attention and problem solving. When students are emotionally engaged, they show interest and enthusiasm and view the curriculum as relevant. Social engagement includes students feeling connected to classmates and teachers, and perceiving the school climate to be supportive. Engagement also includes students' involvement in extra-curricular activities.

A synthesis of over ten years of research on engagement in higher education indicated that academic and social engagement had indirect effects on student persistence through institutional commitment, the degree to which students were committed to staying at a particular school (Pascarella & Terenzini, 2005). Harper and Quaye (2009) emphasized a dual responsibility for engagement such that students have a responsibility to be engaged in meaningful activities, while educators are responsible for providing activities that engage them.

Educators may attempt to increase cognitive engagement by applying active learning strategies in their courses. For example, Goldberg and Ingram (2001) compared student engagement and performance in two sections of a botany course. The active learning section was designed as a combination of mini lectures and activities, such as concept map-making, problem solving, and categorization tasks. Students in the active learning section performed better on the final exam and also reported being more cognitively engaged. Mazur and colleagues developed Peer Instruction, a method to actively engage students in their lecture classes. Peer Instruction involves asking conceptual questions throughout the class period that students answer individually first and then engage in discussions with classmates who have solved the problem in different ways to come up with revised and improved solutions (Crouch & Mazur, 2001; Fagen, Crouch, & Mazur, 2002; Mazur, 2009). During the peer discussions, the instructor and teaching assistants circulate to participate in the discussions. Mazur (2009) reported that students' conceptual understandings increased, often threefold, through use of Peer Instruction. Jakee (2011) described providing modified lecture notes to students that did not include the conceptual understandings or conclusions of the lectures. Students filled in the important details during the lecture, promoting more active learning and lecture attendance. Fatokun and Fatokun (2013) applied problem-based learning, another active learning strategy, in their chemistry and mathematics classes. Working in small groups, the students solved "real world" problems that integrated the two subjects, identifying concepts, brainstorming possible solutions, and interpreting results. Ahn (Ahn & Class, 2011) described students constructing sample exam questions that assessed conceptual, rather than rote learning. Although the task was challenging, it promoted active learning and peer collaboration.

Some instructors use technology, such as clickers, to promote students' cognitive engagement (e.g., Blasco-Arcas, Bull, Hernández-Ortega, & Sese, 2013; Gauci, Dantas, Williams, & Kemm, 2009; Han & Finkelstein, 2013). Clickers are electronic devices that students use to answer questions posed by the teacher. In general, students reported enjoying using clickers in courses (Crossgrove & Curran, 2008; Powell, Straub, Rodrigues, VanHorn, 2011) and suggested that it increases their engagement and learning (Powell et al, 2011). In one study, students who used clickers received better grades

than those who did not, and those who benefitted most had received lower grades in a related previous course (Gauci et al., 2009). Crossgrove and Curran (2008) studied the effects of using clickers in two large section biology courses, one for biology majors and another for non-majors. They found that students in both courses expressed positive attitudes toward clicker use, but its effects on learning were more dramatic for the non-majors. Sullivan (2008/2009) pointed out that clickers are best used when instructors pose questions that engage a higher level of thinking and require students to go beyond rote memorization to apply, analyze, or synthesize information. Mazur and colleagues used clickers in this way to implement the Peer Instruction described previously (Crouch & Mazur, 2001; Fagen, Crouch, & Mazur, 2002; Mazur, 2009).

Instructors may also design course activities that increase social engagement through classroom interactions. Research suggests that peer support is related to college persistence, retention, and grades (Dennis, Phinney, & Chuateco, 2005). The timing of students' social engagement and perceptions of support may also make a difference. Berger and Milem (1999) found that students' perceptions of faculty and peer support early in their college careers were strong predictors of persistence. A perceived *lack* of peer support was more predictive of academic outcomes among first-generation college students than actual support (Dennis et al., 2005).

Thus, engagement can be considered the first step in the learning process for students. Although this is the case for all students, higher education instructors may find it especially important to consider effective strategies to engage culturally diverse students, for example, immigrant students and those who are the first in their families to attend college. These students may have fewer models and other resources to sustain their own engagement in higher education. Instructors' attempts to design instruction for effective engagement may have particular influence on the retention and achievement of culturally diverse students.

The Increasing Diversity of Higher Education

Across the globe, higher education classrooms are becoming more culturally and linguistically diverse. As countries like the U.S. become more multicultural, institutions of higher education tend to reflect those trends (Laden, 2004). Of the 18.6 million undergraduates enrolled in American universities in 2011, 45% were non-White (Knapp, Kelly-Reid, & Ginder, 2012). Educators have attempted to increase the diversity of their universities to parallel their national populations. For example, Dutch universities have tried to increase the enrollment of minority groups while maintaining a high level of academic achievement (Reumer & van der Wende, 2010).

The growing numbers of international students have also increased the diversity of higher education. Between 1990 and 2011, the number of students studying outside of their home countries tripled, with an annual increase of 6% (OECD, 2013). Nearly 4.5 million students studied in international settings in 2013. In 2011, the largest numbers of students studying abroad were from China, India, and Korea, with 53% of all international students arriving from Asia. Although the U.S. and U.K. continue to have the largest share of international students, other countries are increasing their international enrollments. For example, 18% and 11% of higher education graduates in Australia and New Zealand respectively were international students, as were half of all PhD candidates in Switzerland (OECD, 2014). Spain, Russia, and Korea are new to this arena, with increasing numbers of international students (OECD, 2013).

Jiang (2010) observed that many universities are operating within a broad, global context and serving an increasingly diverse student population. The increase in students studying outside their country of citizenship has been attributed to a number of factors, including students' perceptions of the benefits of cultural understandings, language learning, and a competitive advantage of a foreign degree (OECD, 2013; Sawir, 2013). Some students from less developed countries, for example, those from Africa, report that their home countries do not have the capacity to provide the advanced education they desire (Maringe & Carter, 2007). Other students, for example, from China, are encouraged to attend a university abroad in order to build the capacity of their own countries (OECD/World Bank, 2007).

Increasingly, universities and colleges view international students as a form of revenue as public funding for higher education continues to decrease, and those institutions are more reliant on tuition dollars (Sawir, 2013; Trilokekar & Kizilbash, 2013). In Japan, a decreasing birth rate has threatened the continuation of a number of higher education institutions, and this has promoted the recruitment of international students (Rivers, 2010).

As their student bodies become more multicultural, higher education faculty are challenged to use strategies to better engage them. This may be particularly problematic for new faculty, as most doctoral programs do not require teaching preparation (Jensen 2011), and those new to teaching report being unprepared for the instructional demands of an academic position (Golde & Dore, 2001). Thus, many professors were not prepared to teach, much less to consider the needs of diverse students. Some universities now provide pedagogical training for faculty once they are hired. One study found that those who participated in such training indicated positive changes, including the use of more student-

centered strategies and increased teaching self-efficacy (Postareff, Lindblom-Ylänne, & Nevgi, 2007).

Without adequate preparation, professors may perpetuate instructional models that they were exposed to as students, using strategies that are not suited to diverse student populations. Close relationships and support that students perceive from teachers and peers are related to persistence by minority students (e.g., Dennis et al., 2005; Jackson, Smith, & Hill, 2003). However, reliance on lecturing, particularly in large classes, often prevents professors from getting to know their students. Many have criticized lectures for their resulting in student passivity and low levels of engagement and understanding (e.g., Rodd, 2003; Yoon, Kensington-Miller, Sneddon, & Bartholomew, 2011).

Using The CREDE Standards for Effective Pedagogy to Promote Engagement

This paper describes how the Center for Research on Education, Diversity, and Excellence (CREDE) Standards for Effective Pedagogy can promote students' engagement in learning. We reflected on our adaptation of the CREDE Standards for Effective Pedagogy for our university classrooms, their effect on engagement, and the challenges posed. Below we describe the CREDE model and research on its effectiveness.

The CREDE Standards

The CREDE Standards are strategies to create interaction-rich classrooms that integrate classroom dialogue to promote conceptual understanding (Tharp, Estrada, Dalton, & Yamauchi, 2000). CREDE was a U.S. national research center for eight years (1996-2004) (CREDE, n.d.). The Center funded 31 research projects across the nation that focused on how best to teach culturally and linguistically diverse students from kindergarten through 12th grade. From that research and previous work from the National Center for Research on Cultural Diversity and Second Language Learning and the Kamehameha Early Education Program, CREDE researchers identified five strategies of effective instruction that appeared to be important for all groups of students. These five became known as the CREDE Standards. Researchers working with American Indians, Native Hawaiians, and Alaska Natives identified two additional Standards that appeared to be important for indigenous groups (Tharp, 2006); however, most of the research on CREDE has focused on the first five. Researchers later adapted the seven Standards for preschoolers (Yamauchi, Im, & Schonleber, 2012). Although some have used the CREDE model in higher education (e.g., Stoddard,

Bravo, Solis, Stevens, & Vega de Jesus, 2009), little has been written on their adaptation for adult learning.

The CREDE Standards

The CREDE Standards are based on Vygotsky's (1978) theory and over 40 years of research on effective instruction for diverse students (Tharp et al., 2000). They are the following:

- Joint Productive Activity: Teachers and students working together to create shared understandings and tangible products.
- Language and Literacy Development: Promoting language goals and skills.
- Contextualization: Connecting new information to what students already know from their previous home, community and cultural experiences.
- Complex Thinking: Developing students' high-level thinking and problem solving skills.
- Instructional Conversation: Using small group discussions to develop conceptual understandings.

Effectiveness of the CREDE Standards

Researchers have found positive relationships between use of the CREDE Standards and student achievement in K-12 settings (e.g., Doherty, Hilberg, Pinal, & Tharp, 2003; Saunders & Goldenberg, 2007). The US Department of Education reviewed 73 studies focused on language development for English language learners and ranked the CREDE Standards as the most effective method for promoting reading achievement and the second most effective for improving English language literacy (Institute of Educational Sciences, 2006).

Use of the CREDE model may improve engagement of culturally diverse post-secondary students. An analysis of over 42,000 students at 137 institutions of higher education indicated greater engagement and learning when instructors interacted with students (Joint Productive Activity, Instructional Conversation), provided experiential learning opportunities (Contextualization), used active and collaborative strategies (Joint Productive Activity, Complex Thinking) and emphasized higher order thinking (Complex Thinking) (Umbach & Wawrzynski, 2005). In this paper, we define engagement as students' sustained attention to tasks requiring mental effort (Corno & Mandinach, 1983); students' enthusiasm, interest, and enjoyment (Skinner, Kindermann & Furrer, 2008); and their emotional connections to teachers and peers.

Our Instructional Contexts

We are three instructors who collaborated to understand how the CREDE Standards could be applied in higher education to increase student engagement. The three of us taught at universities in Hawai'i, an American state with no ethnic majority. The institutions in which we worked have been rated among the top 10 most ethnically diverse universities in the nation (US News and World Report, 2015a; 2015b). Students in all three courses were ethnically and linguistically diverse and from the US and other countries. Tracy taught an undergraduate survey of psychology class at a small Catholic university where there was an undergraduate enrollment of just over 1,300 students, of whom 66% were from Hawai'i, 22% from the U.S. continent, and 9% from the Pacific Islands. The racial/ethnic background of the university included 37% Asian, 17% Hawaiian or Pacific Islander, 15% Caucasian, and 17% mixed ethnicity.

Lois and Kazufumi taught at a large public university with an undergraduate enrollment of 14,500 students, of whom 71% were from Hawai'i and 21% from the continental U.S. The racial/ethnic background of full-time students at this university included 28% Asian, 24% Caucasian, 15% Hawaiian/Part Hawaiian, 14% mixed ethnicity, 2% Pacific Islander, and 18% other. Lois, a professor in educational psychology, taught introductory graduate-level educational psychology. Kazufumi, a doctoral student from Okinawa, taught undergraduate statistics. Although the statistics course was designed for undergraduates, a few graduate students also enrolled.

CREDE in Higher Education

In this section, we describe how we used each Standard in one of the courses and provide shorter examples from the other classes. We also discuss challenges presented by the model.

Joint Productive Activity

Joint Productive Activity refers to teachers and students collaborating to create tangible or intangible products. At its highest level, the instructor collaborates with a small group of students for at least 10 minutes (Luning, Wyatt, & Im, 2011). Collaboration occurs between the teacher and students, with the majority participating and the teacher assisting in different ways.

Undergraduate introduction to psychology. In Tracy's course, there were multiple opportunities for students to work collaboratively on tangible products. For example, in groups with four or five members, students discussed what humans need to live, and they wrote each item on a Post-it note. Tracy rotated through several of these groups to monitor their discussion, encourage them to think broadly, and promote the engagement of quieter students. Participation was encouraged by the simplicity of the task. It did not require self-disclosure or depend on whether students had read the chapter on motivation, yet it drew on their past experiences. Students then left their groups, moved to the front of the classroom, and placed their Post-it notes on the whiteboard. Tracy asked the class what they noticed about the many "needs" on the board. Students noted that there was considerable redundancy as the small groups had generated similar lists. Tracy then asked the students to come up to the board and group similar needs. These grouped needs were then labeled by the class and placed in a hierarchy from what was most "basic" to the most sophisticated need, essentially duplicating Maslow's (1943) Hierarchy, a pyramid depicting physiological and safety needs at the bottom that are essential before other needs at higher levels (e.g., love, esteem, self-actualization) can be realized.

Students appeared to enjoy the exploratory nature of this activity and that there were no "correct answers." At the same time, the parallels between Maslow's concept and their class-created hierarchy were striking and increased the credibility of the Hierarchy of Needs construct. Tracy challenged the class to come up with exceptions to such a hierarchy, such as the life of Nelson Mandela, whose basic needs were severely limited while satisfying higher levels, such as self-actualization. This prompted a class discussion of other exceptions, and students suggested other examples such as soldiers and religious pilgrims.

This activity exemplified Joint Productive Activity at the highest level in that the students collaborated with each other and the instructor to develop both tangible products (the list of needs and the eventual composite hierarchy) and intangible products (understanding of Maslow's ideas and exceptions to an established motivation hierarchy). Tracy assisted students' collaboration by questioning, rephrasing what was said, and modeling how concepts could be grouped and how established and well-known theories may be challenged.

Joint Productive Activity in the other courses. Kazufumi implemented Joint Productive Activity when he covered the topics of statistical analyses and estimation. Like Tracy, Kazufumi's students worked on the same task in small groups while he circulated among them. For example, students discussed how to create four steps of hypothesis testing and summarized their discussions on chart paper as a tangible product that was created while the students also built their intangible understandings. Lois structured her class into small groups and planned a different collaborative activity for each "center." Students rotated through each of the centers throughout the class period with

the composition of the centers changing so that they worked with different members for each rotation. At each center, both peer-led and teacher-facilitated, students discussed questions posed, creating intangible products and sometimes creating tangible products together. For a session focused on theories of learning, Lois met with her small group to discuss contexts in which students had learned something intentionally or unintentionally, while a peer-led group created a visual representation of the main ideas of the reading, and a third group worked in pairs to teach each other something new.

Language and Literacy Development

Language and Literacy Development refers to teachers promoting the language of their subject matter. At the highest level, one of the goals of the class session is for students to write or speak in ways that are specific to that subject (Luning et al., 2011).

Graduate introduction to educational psychology. Lois designed the activity centers with a goal of developing students' skills in reading, writing, or talking about research and theory in educational psychology. Students wrote a short paper responding to a prompt about the assigned readings and in class, read each other's papers, and wrote comments on them. Then, in one of the centers, they discussed the papers. The students enjoyed reading each other's papers, and this also gave them ideas for their discussion. This promoted the engagement of quieter students who might have tended to remain silent in discussion. They participated by writing comments to their peers, and other students also asked them questions more directly based on what the quieter students had written. The peer paper sharing and discussion groups is considered Language and Literacy Development, but not at the highest level because the teacher was not there to provide assistance.

At her Center that day, Lois sat with each small group of students and discussed their literature review questions. Lois had told students to bring one or two of their ideas. At that Center, the students took turns presenting their ideas and the group provided feedback. Language and Literacy Development was enacted at the highest level because Lois modeled use of psychological language and assisted students through questioning and rephrasing what they had said using psychological terms. The goal was for students to be able to articulate a question they could pursue for their final paper. For example, one of the students, Jana, was a teacher who had been out of school for a while and was intimidated by having to write a long research paper. Jana wanted her paper to be relevant to her classroom practice and was unsure how to frame her

ideas as an appropriate literature review question. Lois asked Jana questions to clarify what she wanted to know: "What do you want to find out to help you improve your instruction? How is that psychological?" Other students in the small group made suggestions, and Jana eventually stated the focus of her paper as, "How is family engagement related to student outcomes?"

Designing the class activities so that students had many opportunities to communicate with each other and with the instructor increased engagement because students were expected to take an active rather than passive role in learning. One of the international students in class told Lois that the emphasis on language and literacy was especially helpful to the development of her English writing and speaking skills, as she was required to speak and write a lot and for many purposes. She also felt that the intensive interaction promoted students getting to know each other and created a socially engaging class, which further supported students' development.

Language and Literacy in the other courses. After a mini lecture on difficult statistical terms and concepts, Kazufumi posed a question that small groups of students discussed as he moved among them to assist with comprehension of terms. The question for one day was, "What are differences and similarities between hypothesis testing and interval estimation?" These were two concepts that were difficult for students. When Kazufumi worked with each group, the students explained the concepts to show their understanding, applying appropriate and technical language.

Tracy required students to work in small groups on a research project that included writing a term paper. Students brought sections of the paper to class to share with group members. As students provided feedback on each other's writing, Tracy rotated through the groups to monitor this process and model how to give constructive feedback. Students received a group score rather than an individual grade for the paper, so there was incentive and a high level of engagement to provide productive feedback to each other.

Contextualization

This Standard focuses on the notion that instruction is most engaging and successful when new information is connected to what learners already know from prior home, community, and school experiences. At its highest level, teachers integrate students' prior knowledge with new and abstract understandings (Luning et al., 2011).

Undergraduate introduction to psychology. Tracy found that there were many opportunities to connect students' prior experiences to course concepts. To promote such connections, he required journal assignments in

which students connected how the topic of the week related to their own lives. For example, as a means of exploring the nature versus nurture debate in development, students reflected on aspects of their personality and the extent to which they considered themselves to be more like their parents or more like their friends.

To demonstrate classical conditioning, Tracy showed students an empty bag of *li hing mui*, a salty Chinese snack that is popular in Hawai'i. Those students who were raised in Hawai'i and recognized the bag salivated upon seeing it, demonstrating a conditioned response, whereas, those who were unfamiliar did not. This demonstration was both an example of the involuntary nature of conditioned responses and provided relevancy to the typical review of Pavlov's research. Students were then challenged in a whole class discussion to come up with other ways in which they experienced conditioning. Students volunteered that the smell of a perfume or cologne could make them feel good as it reminded them of a boyfriend or girlfriend.

Tracy used students' everyday experiences to illustrate a concept and assisted students in understanding the abstract ideas by questioning and modeling the connections. Student engagement increased when they were required to relate concepts to their own lives and share these insights. Contextualization was at the highest level of enactment when Tracy could assess student understandings and assist them in making connections between their personal experiences and abstract concepts (Luning et al., 2011).

Contextualization in the other courses. In the other courses, the instructors made many attempts to connect students' prior experiences to concepts being taught. For example, when they discussed student assessment in the graduate educational psychology course, Lois asked the students to think of an example of an assessment they had experienced as a student and to relate that experience to what they had read in the text.

When a student in the statistics course had difficulty understanding the concept of correlation, Kazufumi gave an example of the correlation between GPA in college and the likelihood of gaining a well-paid job. Contextualization increased students' cognitive engagement in that it required students to actively apply the abstract concepts to previous experiences.

Complex Thinking

Complex Thinking goes beyond rote memorization such that students use skills of analysis, synthesis, and application (Tharp et al., 2000). Instructors emphasize Complex Thinking when they teach students metacognitive skills, such as how to organize and revise a paper or when they provide a template for an assignment. At the highest level, teachers design instructional activities that require complex thinking and assist students with these strategies (Luning et al., 2011).

Undergraduate statistics. Kazufumi provided lecture-style instruction for half of the class and group activities for the remainder of the session. He divided the students into small groups for a 10-minute session at the beginning of class to work in small groups to discuss their homework. A 20-minute group discussion followed to assess students' understanding of those ideas. Kazufumi checked in with each group, asking students about the meaning of statistical concepts and encouraging them to apply prior knowledge and experience to understand the ideas.

For small group discussions on statistical hypothesis testing, Kazufumi posed two questions: "What is the level of significance or α level and what are typical probabilities at that level?" He joined each group in their conversations, asking questions, rephrasing, and clarifying. One group's discussion went beyond answering the questions. They talked about the social consequences of setting an α level for one's research. A student suggested that a significance level of .05 and .01 could be too high in certain areas, such as physics. Kazufumi joined this group, and they discussed how setting an α level at .05 or .01 in physics, medical science, and other areas could be problematic because of the consequences of error. Researchers would want to be more stringent in their decision-making. Kazufumi asked the students to consider the importance of assessing whether the significance level fit the particular area of research and to consider aspects of practical significance and the social consequences of research, in addition to statistical significance.

This example of a small group discussion can be considered Complex Thinking at the highest level because students and Kazufumi developed shared understandings and applications of statistical concepts that went beyond providing definitions and calculating formulas. By designing small group discussions in which he participated, Kazufumi assessed students' knowledge and assisted through clarification, questioning, and modeling use of concepts. Complex thinking is itself cognitive engagement. By having students tackle questions that were complicated and required discussion in small groups, Kazufumi promoted an environment in which students got to know one another, felt comfortable asking questions, and engaged in conversations on complex topics.

Complex Thinking in the other courses. Instructors in the other two courses engaged their students in many activities that required higher-level thinking, rather than memorizing facts. Students in the graduate educational psychology class were required to apply criteria of what made for quality research to critique an empirical article.

In the undergraduate psychology course, students listened to an audio recording of a conversation between Tracy and a professional telephone psychic. Tracy asked students to reflect on a number of features of the conversation, such as the specificity of predictions, the clarity of terms, and the model of causation reflected by what the psychic said about planetary movement and Tracy's future. This exercise promoted students' critical thinking, consideration of causation, and reflections on the nature of truth and limits to understanding. The phone call was very amusing, so students were interested and enjoyed the activities.

Instructional Conversation

Instructional Conversation (IC) involves the teacher and a small group of students in sustained conversation about an academic topic (Tharp & Gallimore 1988). Students talk to each other, as well as to the teacher, and ideally, students speak more than the teacher. At the highest level, IC occurs for at least 10 minutes, and teachers listen carefully, foster students' understandings, and question them on their judgments and rationales (Luning et al., 2011).

Graduate introduction to educational psychology. As described in the section on Joint Productive Activity, Lois designed her class as a series of small group rotations. At her Center, Lois deliberately chose a topic that the students would likely have difficulty understanding and designed an IC around those concepts. For one class, students each brought an article for which they were writing critiques based upon criteria in the readings that described quality educational research. In their small group with Lois, the students summarized the articles they had chosen and discussed their strengths and weaknesses. Lois questioned students by referring to the articles the class had read on standards for judging educational research: "How does that relate to the articles we read on good research?" She asked other students in the group what they thought: "What are other strengths and weaknesses that you can think of?" Student engagement in the discussion was generally high as students worked to understand their classmates' arguments. Students asked each other to clarify their points and suggested other strengths and weaknesses of the papers. One student pointed out that what a peer had suggested as a negative aspect of the article he was analyzing could also be conceived of as a strength: "The article you chose is a qualitative study, so maybe you can also think of the small sample size as appropriate for that kind of study. The point wasn't to go broad, but instead having a small sample size allowed the researcher to go into more in depth and to explore what people thought."

One of the strengths of these ICs was that, in general, student engagement was high and students talked to each other, as well as the teacher. However, as it was somewhat early in the semester and a topic for which students had relatively little experience, some students were reticent to participate. In one group a student tended to dominate the conversation. Lois worked to include more students in the discussion by asking the particular student to hold off before others spoke: "I would like to hear a little more from others in the group before you add your comments." She then more directly asked the other students for their comments.

Using IC promoted student engagement because Lois met with small groups of students in which she could assess student understanding and ask questions to promote cognitive engagement. The small group setting also promoted Lois getting to know students better, so it influenced the social and emotional engagement of the class.

IC in the other two courses. Tracy and Kazufumi also engaged their students in frequent small group discussions. Kazufumi often used IC to engage students with statistical concepts. He engaged students in dialogue during small group discussions, moving from group to group to see how students were doing, clarifying concepts, and asking questions that pushed them to think more deeply about the topic. These conversations increased students' mental effort and promoted students getting to know one another in a class that typically created a lot of anxiety for many students.

Tracy organized small student discussion groups and circulated among them to engage in the conversations. He often followed this with whole class discussions, and he found that these larger conversations moved in unexpected directions and led to deeper levels of understanding. For example, after small group discussions on their families' parenting styles, students in the whole class discussion recognized that those who came from particular cultures—those that tended to emphasize an extended family structure—also tended to have parents with a more authoritarian parenting style. These discussion structures increased emotional and social engagement as students enjoyed sharing and interacting with peers.

Challenges to Using CREDE

All of the instructors experienced challenges implementing the CREDE Standards in their classrooms. Lois found that some students, particularly those who were international students from Asia, were not used to discussion-based courses and did not feel comfortable, initially, discussing their ideas in class. These students reported wanting to hear more lecturing, particularly when the content was challenging and they were not sure if they were on the right track. Another challenge was making sure that the peer-led center activities were roughly the same

length of time. When activities ended early, students talked about less relevant topics.

Kazufumi felt that one of the most challenging aspects of integrating the CREDE Standards was how to address a diversity of statistical knowledge, learning styles, and attitudes toward statistics. Kazufumi allowed students to choose with whom they wanted to work. He noticed that the students tended to work with the same peers each time, and there was one group that was lower achieving. This group was obviously anxious about statistics. These students did not seem as motivated to create the joint products that were assigned and had more difficulty engaging in tasks than other groups. While Shimazoe and Aldrich (2010) found that increased group productivity was related to teacher-assigned groups, compared to situations in which students self-select their group membership, research by Chapman, Meuter, Toy, and Wright (2006) indicated that there were advantages to allowing students to choose their own groups. Kazufumi decided that the next time he teaches this course, he will assign students to groups and rotate them so that they work with different peers.

A few students in the introductory psychology course appeared less comfortable with engaging in small group activity and whole class discussions. Some appeared to expect more lectures, and one commented in the post-course evaluation that Tracy was not teaching enough! Tracy found that it was often necessary to interact more with groups who did not seem as engaged, which at times left the higher achieving groups without his participation. The personal nature of the psychology course content may have also presented more difficulties for some introverted students to discuss issues openly with peers and the instructor.

Conclusions

Engagement among Culturally Diverse Higher Education Students

We chose to apply the CREDE model in our university classrooms because of its long history of success with culturally and linguistically diverse K-12 students (e.g., Doherty et al. 2003; Saunders & Goldenberg, 2007). Students in our courses were very diverse in terms of ethnicity and nationality. The CREDE model appeared to engage these diverse groups of students to participate in our classroom activities. However, for some students, particularly those from Asia, the model was different from what they had experienced as students in their home countries. It took longer for those students to be comfortable in a CREDE-based classroom, and some preferred more passive lectures and interactions with faculty members, rather than peers.

This is consistent with previous research indicating that international students, particularly in their first year studying at an American university, tended to interact more with faculty members than their U.S. counterparts (Zhao, Kuh, & Carini, 2005). Furnham and Alibhai (1985) found that international students also tended to prefer developing friendships with students from their home countries, or other international students, rather than students from the host country. Promoting classroom friendships with many different students, including those from the host country, can be fostered through CREDE classroom activities. This can be beneficial for international students, as research suggests that those who develop friendships with host country peers tend to have an easier time adjusting to their new situations (Furnham & Alibhai, 1985; Ying & Han, 2008). We found that once the students from Asia got used to the model, their engagement increased, and they reported that they were more active learners than they were in university classrooms back home.

In general, Contextualization appeared to be an important way to engage diverse students to participate because it required them to connect prior experiences to the new information being taught, thus increasing cognitive engagement. Through Contextualization, everyone's past experiences are highlighted as important to learning new concepts. Small group instruction, as required by Joint Productive Activity and IC, also promotes social engagement and creates opportunities for instructors to get to know students. Once teachers know more about their students, they can promote the expansion of their understandings.

By getting to know our students and talking with them in small groups, we may create a more caring environment. Previous research found that students' perceptions of faculty members' warmth and caring were related to persistence and retention in higher education (Jackson et al., 2003). Instructors' positive comments and non-verbal cues indicated responsiveness to students' needs and were related to positive faculty-student relationships. These relationships predicted the development of students' self-efficacy and their feelings of being in control of their learning environments (Creasey, Jarvis, & Gadke, 2009). This in turn may have led to better learning outcomes, as college students with higher self-efficacy tend to earn better grades (DeFreitas, 2012; Komarraju, & Nadler, 2013; Peters, 2013).

References

Ahn, R., & Class, M. (2011). Student-centered pedagogy: Co-construction of knowledge through student-generated midterm exams. *International Journal of Teaching and Learning in Higher Education, 23*(2), 269-281.

Berger, J. B., & Milem, J. F. (1999). The role of student involvement and perceptions of integration in a causal model of student persistence. *Research in Higher Education, 40*, 641-664.

Blasco-Arcas, L., Bull, I., Hernández-Ortega, B, & Sese, F. J. (2013). Using clickers in class: The role of interactivity, active collaborative learning and engagement in learning. *Computers and Science, 62*, 102–110.

Carini, R. M. (2012). Engagement in learning. In N. M. Seel (Ed.), *Encyclopedia of the sciences of learning* (pp.1153-1156). New York, NY: Springer.

Chapman, K. J., Meuter, M., Toy, D., & Wright, L. (2006). Can we pick our own groups? The influence of group selection methods on group dynamics and outcomes. *Journal of Management Education, 30,* 557-569.

Corno, L., & Mandinach, E. B. (1983). The role of cognitive engagement in classroom learning and motivation. *Educational Psychologist, 18*(2), 88-108.

Creasey, G., Jarvis, P., & Gadke, D. (2009). Student attachment stances, instructor immediacy, and student- teacher relationships as predictors of achievement expectancies in college students. *Journal of College Student Development, 50,* 353-372.

CREDE (n.d.). *CREDE History.* Center for Research on Education, Diversity, and Excellence, University of Hawai'i. Retrieved from http://manoa.hawaii.edu/coe/credenational/crede-history/

Crossgrove, K., & Curran, K. L. (2008). Using clickers in nonmajors- and majors-level biology courses: Student opinion, learning, and long-term retention of course material. *CBE: Life Sciences Education, 7,* 146-154.

Crouch, C. H., & Mazur, E. (2001). Peer instruction: Ten years of experience and results. *American Journal of Physics, 9,* 970-977.

DeFreitas, S. C. (2012). Differences between African American and European American first-year college students in the relationship between self-efficacy, outcome expectations, and academic achievement. *Social Psychology of Education: An International Journal, 15,* 109-123.

Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development, 46,* 223-236.

Doherty, R. W., Hilberg, R. S., Pinal, A., & Tharp, R. G. (2003). Five standards and student achievement. *NABE Journal of Research and Practice, 1,* 1-24.

Fagen, A. P., Crouch, C. H., & Mazur, E. (2002). Peer instruction: Results from a range of classrooms. *The Physics Teacher, 40,* 206-209.

Fatokun, J. O., & Fatokun, K. V. (2013). A problem based learning (PBL) application for the teaching of mathematics and chemistry in higher schools and tertiary education: An integrative approach. *Educational Research and Reviews, 8*(11), 663-667.

Furnham, A., & Alibhai, N. (1985). The friendship networks of foreign students: A replication and extension of the functional model. *International Journal of Psychology, 20,* 709-722.

Gauci, S. A., Dantas, A. M., Williams, D. A., & Kemm, R. E. (2009). Promoting student-centered active learning in lectures with a personal response system. *Advanced Physiological Education, 33,* 60-71.

Goldberg N. A., & Ingram, K. W. (2001). Improving student engagement in a lower-division botany course. *Journal of the Scholarship of Teaching and Learning, 11,* 76–90.

Golde, C. M., & Dore, T. M. (2001). *At cross purposes: What the experiences of today's doctoral students reveal about doctoral education.* Report for the Pew Charitable Trusts. ERIC Documents: ED 450 628.

Han, J. H., & Finkelstein, A. (2013). Understanding the effects of professors' pedagogical development with clicker assessment and feedback technologies and the impact on students' engagement and learning in higher education. *Computers and Education, 65*, 64–76.

Harper, S. R. H., & Quaye, S. J. (2005). *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations*. New York, NY: Routledge.

Institute of Educational Sciences. (2006). *What works clearinghouse: IC and literature logs.* Retrieved from http://ies.ed.gov/ncee/wwc/pdf/WWC_ICLL_102606.pdf

Jackson, A. P., Smith, S. A., & Hill, C. L. (2003). Academic persistence among Native American college students. *Journal of College Student Development, 44*, 548–565.

Jakee, K. (2011). Overhauling technical handouts for active student participation: A model for improving lecture efficiency and increasing attendance. *International Journal of Teaching and Learning in Higher Education, 23*(1), 98-108.

Jensen, J. L. (2011). Higher education faculty versus high school teacher: Does pedagogical preparation make a difference? *Bioscene: Journal of College Biology Teaching, 37*, 30–36.

Jiang, X. (2010). A probe into the internationalization of higher education in the New Zealand context. *Educational Philosophy and Theory, 42*, 881-897.

Knapp, L.G., Kelly-Reid, J.E., & Ginder, S.A. (2012). *Enrollment in postsecondary institutions, fall 2011; Financial statistics, fiscal year 2011; and graduation rates, selected cohorts, 2003-2008: First look (Preliminary data)* (NCES 2012-174).

U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Komarraju, M., & Nadler, D. (2013). Self-efficacy and academic achievement: Why do implicit beliefs, goals, and effort regulations matter? *Learning and Individual Differences, 25,* 67-72.

Laden, B. V. (2004). Serving emerging majority students. *New Directions for Community Colleges, 127,* 5-19.

Luning, R. I., Wyatt, T., & Im, S. (2011). *Classroom Observation Rubric: Development and Validation of a Measure of Effective Pedagogy.* CREDE Hawai'i Project. Honolulu, HI: University of Hawai'i.

Maringe, F., & Carter, S. (2007). International students' motivations for studying in UK HE: Insights into the choice and decision making of African students. *International Journal of Educational Management, 21,* 459-475.

Maslow, A. (1943). A theory of human motivation. *Psychological Review, 50,* 370-396.

Mazur, E. (2009). Farewell, lecture? *Science, 323,* 50-51.

National Research Council (2004). *Engaging schools: Fostering high school students' motivation to learn.* Washington, DC: National Academies Press.

OECD (2013, July). *Education indicators in focus.* Paris: OECD Publishing. Retrieved from http://www.oecd.org/education/skills-beyond-school/EDIF%202013--N%C2%B014%20%28eng%29-Final.pdf

OECD (2014). *Education at a glance 2014: OECD indicators.* Paris: OECD Publishing. Retrieved from http://dx.doi.org/10.1787/eag-2014-en

OECD / World Bank (2007). *Cross-Border tertiary education: A way towards capacity development.* Paris: OECD Publishing.

Pascarella, E., & Terenzini, P. (2005). *How college affects students, volume 2: A third decade of research.* San Francisco, CA: Jossey-Bass.

Peters, M. (2013). Examining the relationships among classroom climate, self-efficacy, and achievement in undergraduate mathematics: A multi-level analysis. *International Journal of Science and Mathematics Education, 11,* 459-480.

Postareff, L., Lindbloom-Ylänne, S., & Nevgi, A. (2007). A follow-up study of the effect of pedagogical training on teaching in higher education. *Higher Education, 56,* 29-43.

Powell, S., Straub, C., Rodriguez, J., & VanHorn, B. (2011). Using clickers in large college psychology classes: Academic achievement and perceptions. *Journal of the Scholarship of Teaching and Learning, 11*(4), 1-11.

Reumer, C., & van der Wende, M. (2010). *Excellence and diversity: The emergence of selective admission policies in Dutch higher education: A case study on Amsterdam University College.*

(Research and Occasional Paper Series CSHE.15.10). Center for Studies in Higher Education, University of California. Retrieved from http://files.eric.ed.gov/fulltext/ED517761.pdf

Rivers, D. J. (2010). Ideologies of internationalization and the treatment of diversity in Japanese higher education. *Journal of Higher Education Policy and Management, 32,* 441-454.

Rodd, M. (2003). Witness as participation: The lecture theatre as a site for awe and wonder. *For the Learning of Mathematics, 23,* 15-21.

Saunders, W., & Goldenberg, C. (2007). The effects of an instructional conversation on transition students' concepts of friendship and story comprehension. In R. Horowitz (Ed.), *The evolution of talk about text: Knowing the world through classroom discourse* (pp. 221-252) Newark, DE: International Reading Association.

Sawir, E. (2013). Internationalisation of higher education curriculum: The contribution of international students. *Globalization, Societies, and Education, 11,* 359-378.

Shimazoe, J., & Aldrich, H. (2010). Group work can be gratifying: Understanding and overcoming resistance to cooperative learning. *College Teaching, 58,* 52-57.

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2008). A motivational perspective on engagement and disaffection conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement, 69*(3), 493-525.

Stoddard, T., Bravo, M., Solis, J., Stevens, M., & Vega de Jesus, R. (2009, May). *Preparing pre-service teachers to integrate inquiry science with language and literacy instruction for English language learners: An experimental study.* Paper presented at the CREDE Conference, San Francisco, CA.

Sullivan, R. (2008-2009). Principals for constructing good clicker questions: Going beyond rote learning and stimulating active engagement with course content. *Journal of Educational Technology Systems, 37*(3), 335-347.

Tharp, R. G. (2006). Four hundred years of evidence: Culture, pedagogy, and Native America. *Journal of American Indian Education, 45*(6), 6-25.

Tharp, R. G., & Gallimore, R. (1988). *Rousing minds to life: Teaching, learning, and schooling in social context.* Cambridge, UK: Cambridge University Press.

Tharp, R. G., Estrada, P., Dalton, S. S., & Yamauchi, L. A. (2000). *Teaching transformed: Achieving excellence, fairness, inclusion, and harmony.* Boulder, CO: Westview.

Trikokekar, R. D., & Kizilbash, Z. (2013). IMAGINE:

Canada as a leader in international education: How can Canada benefit from the Australian experience? *Canadian Journal of Higher Education, 43,* 1-26.

Umbach, P. D., & Wawrzynski. M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education, 46,* 153-184.

US News and World Report (2015a). *Campus ethnic diversity: National universities*. Retrieved from http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-universities/campus-ethnic-diversity

US News and World Report (2015b). *Campus ethnic diversity: Regional universities.* Retrieved from http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/regional-universities/campus-ethnic-diversity

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Yamauchi, L. A., Im, S., & Schonleber, N. (2012). Adapting strategies of effective instruction for culturally diverse preschoolers. *Journal of Early Childhood Teacher Education, 33,* 54-72.

Ying, Y. W., & Han, M. (2008). Variation in the prediction of cross-cultural adjustment by ethnic density: A longitudinal study of Taiwanese students in the United States. *College Student Journal, 42,* 1075-1086.

Yoon, C, Kensington-Miller, B., Sneddon, J., & Bartholomew. H. (2011). It's not the done thing: Social norms governing students' passive behavior in undergraduate mathematics lectures. *International Journal of Mathematical Education in Science and Technology, 42,* 1107–1122.

Zhao, C. M., Kuh, G. D., & Carini, R. M. 2005. A comparison of international student and American student engagement in effective educational practices. *The Journal of Higher Education, 76,* 209–31.

_____

LOIS A. YAMAUCHI, PhD is a professor in the Department of Educational Psychology at the University of Hawaiʻi at Mānoa and the Director of the CREDE Hawai'i Project. Her research interests include sociocultural theory, cultural influences on learning, and the educational experiences of indigenous teachers, students, and families. She has led efforts to adapt the CREDE model for early childhood and higher education educators.

TRACY TREVORROW, PhD is a professor of psychology at Chaminade University of Honolulu and the Director of the Center for Medical Psychology. He has research interests in sleep disorders, epilepsy, and applied psychophysiology and maintains a clinical practice for clients with central nervous system disorders.

KAZUFUMI TAIRA, M.A. is a PhD candidate in the Department of Educational Psychology at the University of Hawaiʻi at Mānoa. His research interests include higher education, international education, and identity salience and development.

Acknowledgements