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The Journal of Effective Teaching
c/o Center for Teaching Excellence
University of North Carolina Wilmington
601 S. College Road
Wilmington, NC  28403 USA
FAX 910-962-3427

(ISSN 1935-7869 for limited print issues and ISSN 1935-7850 for the online issues)

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### CALL FOR PAPERS

*The Journal of Effective Teaching* is accepting submissions for review for the Fall 2017 issue. Manuscripts will be due May 31, 2017. The expected publication date will be September 30th. Articles will be accepted in any of the Content Areas supported by the journal.
INFORMATION FOR AUTHORS

The Journal of Effective Teaching is an electronic journal devoted to the exchange of ideas and information about undergraduate and graduate teaching. Articles are solicited for publications which address excellence in teaching at colleges and universities. We invite contributors to share their insights in pedagogy, innovations in teaching and learning, and classroom experiences in the form of a scholarly communication which will be reviewed by experts in teaching scholarship. Articles should appeal to a broad campus readership. Articles which draw upon specific-discipline based research or teaching practices should elaborate on how the teaching practice, research or findings relates across the disciplines. We are particularly interested in topics addressed in the particular Content Areas described at this site, including empirical research on pedagogy, innovations in teaching and learning, and classroom experiences.

The Journal of Effective Teaching will be published online twice a year at the web site http://www.uncw.edu/cte/ET/. All manuscripts for publication should be submitted electronically to the Editor-in-Chief, Dr. Russell Herman, at jet@uncw.edu. Articles will be reviewed by two to three referees.

Manuscripts for publication should:

- Follow APA guidelines (5th Edition).
- Include an abstract and 3-5 keywords.
- Typeset in English using MS Word format and 12 pt Times New Roman
- Articles/essays on effective teaching should be 2000-5000.
- Research articles should be 3000-8000 words.
- Tables and figures should be placed appropriately in the text.

All articles published in The Journal of Effective Teaching will be copyrighted under the Creative Commons "Attribution-Non Commercial-No Derivs" license. The Journal of Effective Teaching will require that the author sign a copyright agreement prior to publication.

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Letter from the Editor-in-Chief: 2015-2016 Index

Russell L. Herman

The University of North Carolina Wilmington, Wilmington, NC

This issue marks the twenty-fourth issue of The Journal of Effective Teaching since it was reformatted in late 2006. We have had over 650 submissions, which have resulted in 153 published articles comprising 2217 pages. The acceptance rate has averaged about 24-25%.

The Journal of Effective Teaching is a peer reviewed electronic journal devoted to the discussion of teaching excellence in colleges and universities. The Journal of Effective Teaching has published two to three regular issues per year featuring articles in two broad content Areas: effective teaching and the scholarship of teaching. We invite contributors to share their insights in pedagogy, innovations in teaching and learning, and classroom experiences in the form of a scholarly communication.

We have had many great articles on pedagogy, innovations in teaching and learning, and classroom experiences with suggested best practices. Over the past four years we published 25 articles under the Scholarship of Teaching section and 40 under Effective Teaching. One hundred and thirty four authors contributed to these papers, coming from seven different counties and twenty-six U.S. states. We thank all of our authors and reviewers for their contributions to the success of the journal and look forward to future submissions.

The contents of the 2007-2012 issues can be found at the end of Volume 12 (3) and those for the years 2013-2014 are in Volume 14(3). The contents for the 2015-2016 are provided below, giving an overview of the variety of papers we have published recently. These papers are accessible at http://www.uncw.edu/cte/et/. We also have an RSS feed at http://www.uncw.edu/cte/et/ARTICLES/JETrss.xml, which may be searched in some browsers for keywords or authors in JET. Future authors might find recent JET articles covering some aspect of their research.

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1 Author's email: hermanr@uncw.edu
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Imitation In Undergraduate Teaching and Learning

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Abstract

Research in developmental psychology and neuroscience has demonstrated the critical role of imitation in human learning. Self-report questionnaires collected from 456 undergraduate students in two U.S. institutions and one Chinese institution demonstrated that undergraduate students from both U.S. and Chinese cultures used various imitations in learning, and most undergraduate students perceived those imitations to have positive effects on their learning. Gender, grade-level, disciplinary, and especially, cultural differences of undergraduate students’ uses of imitation and their perceptions of the usefulness of those imitations varied in ways that suggest the significance of broad norms using imitation in teaching and learning in higher education. This study contributed to a better understanding of the significance of imitation in undergraduate student learning across cultures, provided implications for teachers and students in using imitation as an effective teaching and learning tool, and offered important avenues for future research on the topic.

Keywords: Imitation, undergraduate student, teaching, learning, international education.

Imitation is generally thought to be a low-level, non-cognitive copying behavior that may inhibit creativity in learning (Bender, 1979; Deahl, 1899; Warnick, 2008). Therefore, it is rarely studied in university classroom, and the few existing research mainly focuses on avoiding copying as a pedagogical approach in writing and composition classroom (Boyd, 1991; Brooke, 1988; Twomey, 2003) and science classroom (Darling, 2001). However, recent developmental psychological and neuroscientific research has demonstrated that imitation requires a high level of cognitive capacity, and is a critical ability unique to human beings (Meltzoff, 2005; Meltzoff & Decety, 2003). It develops in infancy and continues throughout adulthood, and is associated with a variety of cognitive abilities such as intelligence, emotion, and communication (Meltzoff & Prinz, 2002; Nadel & Butterworth, 1999); thus plays an essential role in learning (Hurley & Chater, 2005; Rogers & Williams, 2006). However, most studies with the updated understanding of imitation focused only on the learning and teaching of infants and children, and ignored university students. Whether and how undergraduate students use imitation and what the effects of imitation are on their learning need further exploration.

There is a growing body of literature examining the critical effects of imitation in cultural transmission and development (Hurley & Chater, 2005; Meltzoff & Prinz, 2002; Shea, 2006).
How university students from different cultures use and perceive imitation is also worth examining. The present study aimed to understand U.S. and Chinese undergraduate students’ perceptions of imitation in learning and to explore implications for teaching and learning in international education.

Review of Relevant Literature

Definitions and Mechanisms of Imitation

In recent decades, imitation has been broadly studied from a variety of perspectives, including biology, psychology, neuroscience, philosophy, and sociology (Hurley & Chater, 2005; Meltzoff & Decety, 2003; Rogers & Williams, 2006). Therefore, it is usually defined very generally with a focus on specific processes and possible consequences (Zentall, 2006). Hurley and Chater (2005) described imitation as follows:

It occurs when the observer’s perception of the model’s behavior causes similar behavior in the observer, in some way such that the similarity between the model’s behavior and that of the observer plays a role, though not necessarily at a conscious level, in generating the observer’s behavior. (p. 2)

The “similar behavior” in this definition emphasizes that imitation goes beyond simply copying the same behavior. It requires participants to understand the goal of a behavior and, more importantly, to understand that the goal can be achieved by other behaviors; thus participants can use a different means to achieve the same goal of the observed behavior, and it is this ability that distinguishes imitation from other forms of social learning (Hurley & Chater, 2005; Zentall, 2006). For example, Gergely, Bekkering, and Kiraly (2002) found that when children were shown the behavior of turning on a light by pushing it with the head, whether they imitated the head push or not depends on whether the demonstrator’s hands were free or not. These children understood the goal was to turn on the light and the demonstrator used the head because her hands were occupied; thus these children imitated the demonstrator’s behavior – using their hands rather than their heads – of turning on the light. Rogers and Williams (2006) provided more examples in their definition of imitation:

It involves the ability to learn socially from others and to incorporate behaviors seen in others into the behavioral repertoire. It involves the connections between the behavior we observe and the behavior we enact. It can concern simple actions such as opening a container, or it can be as advanced as incorporating other people’s ideas when writing a book. It is the means by which we absorb, repeat, and so become integrated with human culture. …. it is a process with irreducible simplicity, and yet the most sophisticated robotics experts still struggle to produce any machine that can perform the function. (p. x)

Understanding the goal of an observed behavior and choosing a different but appropriate way to achieve the same goal requires high level cognitive abilities. Hence, imitation is not a low-level, non-cognitive behavior (Hurley & Chater, 2005; Williamson, Jaswal, &
Meltzoff, 2010). On the contrary, the flexible relationship between the observed behavior and the enacted one is the core to many social-cognitive capacities, including empathy, communication, and intersubjectivity (Eckerman, 1993; Meltzoff & Prinz, 2002; Nadel & Butterworth, 1999; Rogers & Williams, 2006). Therefore, imitation becomes understood as a unique and critical ability that belongs only to human beings (Meltzoff & Decety, 2003).

Several possible mechanisms of imitation have been proposed based on research in neuroscience and developmental psychology. The discovery of mirror neurons provides a neuroscientific explanation for the high frequency of imitation in social interactions (Rizzolatti, Fadiga, Gallese, & Fogassi, 1996). Mirror neurons were first found in macaque monkey brains. They fired when the monkey performed an action, as well as when this monkey observed someone else performing a similar action (Rizzolatti & Craighero, 2004; Rizzolatti et al., 1996). More research using advanced technology, such as brain imaging techniques or transcranial magnetic stimulation, found that mirror neurons also exist in human brains (Iacoboni et al., 2001; Koski, Iacoboni, Dubeau, Woods, & Mazziotta, 2003; Mukamel, Ekstrom, Kaplan, Iacoboni, & Fried, 2010). The findings indicated that mirror neurons in human brains are activated not only by doing the actions or achieving the goals of those actions, but also by processing how to achieve the goals (Buccino et al., 2001; Calvó-Merino, Glaser, Grèzes, Passingham, & Haggard, 2005; Iacoboni et al., 2001; Koski et al., 2003; Van Gog et al., 2009). Therefore, human beings can not only perform an observed action or understand the goal of this action, but also choose a variety of behaviors or methods to achieve the same goal, which is essential to a genuine imitation.

Some researchers, however, have asserted that mirror neurons alone are not enough to produce imitation (Hurley, 2008; Rizzolatti, 2005; Zentall, 2006). Imitation may require a deeper level of cognitive processing in applying novel behaviors to new environments. People need to not only internally represent but also externally manifest the observed behaviors (Rizzolatti, Fogassi, & Gallese, 2001). Therefore, cognitive mechanisms such as perspective taking may also be essential for human beings to perform an imitation (Hurley 2008; Zentall, 2006; Van Gog, Paas, Marcus, Ayres, & Sweller, 2009).

**Imitation and Learning**

Research in developmental psychology has found that imitation exists in early infancy and grows in parallel with multiple cognitive abilities throughout adulthood (Heyes, 2001; Heyes & Ray, 2000; Meltzoff, 2005, 2007). Experiments demonstrated that infants – even those as young as 40 minutes – could imitate the adults’ behaviors (Jones, 2006; Meltzoff & Moore, 1983). Therefore, infants are born with the ability to imitate, and this ability is not a reflex but a functional activity (Kugiumutzakis, 1993; Meltzoff & Moore, 1977). Imitation serves as the root for infants and children to understand the mental states of themselves and others, thus to develop social cognition (Meltzoff & Decety, 2003). It helps infants and children acquire experience and learn cognitive and motor skills such as language and emotional expressions (Meltzoff, 2002, 2005; Uzgiris, 1981), and develop communication skills (Nadel & Camaioni, 1993), social relationships (Eckerman, 1993),...
and moral conscience (Forman, Aksan, & Kochanska, 2004). Adults have also shown a strong tendency to imitate in social interactions (Brass, Bekkering, Wohlschlager, & Prinz, 2000; Brass, Zysset, & Von Cramon, 2001; Press, Bird, Walsh, & Heyes, 2008; Rumiati, Carmo, & Corradi-Dell’Acqua, 2009). Neuroscientific research has demonstrated that imitation recruits certain brain regions to establish relationships between the self and others and also to distinguish between the perspectives of self and other (Meltzoff & Decety, 2003), thus it helps adults understand others’ goals (Meltzoff, 2005), exchange social attitudes (Cook & Bird, 2011), and establish empathy and intersubjectivity (Decety, Chaminade, Grèzes, & Meltzoff, 2002).

Imitation is essential to many socio-cognitive abilities; therefore, it “accelerates learning and multiplies learning opportunities” (Meltzoff, Kuhl, Movellan, & Sejnowski, 2009, p. 285). Research found that imitation is an effective and efficient way to learn, and has identified several factors influencing infants and children’s effective imitation in learning (Meltzoff, 2002, 2005, 2007; Van Gog et al., 2009). Long-term memory plays an important role in performing imitation (Hanna & Meltzoff, 1993; Meltzoff, 2005). Studies demonstrated that infants and children can imitate the same behavior not only immediately but also after a one-week and up to a two- or four-month delay (Barr, Dowden, & Hayne, 1996; Meltzoff, 1988, 1995). This delayed imitation can also happen across various contexts (Hanna & Meltzoff, 1993). Children saved the information picked up through previous observation for later use (Meltzoff, 1988); therefore, they used their prior experiences to guide imitation (Williamson, Meltzoff, & Markman, 2008). Live demonstration, including face-to-face interactions or videos, facilitates imitation and learning (Meltzoff, 2005, 2007). Infants and children imitate more and learn more effectively in dyadic interactions or group discussions (Meltzoff, 2005). They also learn significantly better through face-to-face communicating with live speakers than listening to audio recordings (Kuhl, Tsao, & Liu, 2003; Meltzoff et al., 2009) or television programs (Meltzoff, 1988). Infants and children show a strong tendency to identify and imitate models in learning (Masters, 1972; Warnick, 2008). They tended to imitate adults or older or same-age peers much more than they imitated younger children; and they even adjusted their performance standards when imitating people at different ages (Brody & Stoneman, 1981; Davidson & Smith, 1982). Research also found that infants and children imitate various models, including music or robots (Jones, 2006; Tennie, Call, & Tomasello, 2006).

Imitation involves complicated cognitive capacities and plays a critical role in human learning (Hurley & Chater, 2005; Rogers & Williams, 2006). Previous research has demonstrated that both infants and adults use imitation in social interactions (Brass et al., 2000, 2001; Meltzoff, 2005, 2007; Rumiati et al., 2009), but few studies focused on adults’ imitation (Carmo & Rumiati, 2009; Cook & Bird, 2011), and even fewer examined the effects of imitation on adults learning. Pyle (2010) found that imitating mentors or coaches is important for individual adult learning. Zhou and Guo (2012) and Zhou (2012) found that teacher’s imitation of undergraduate students’ behaviors in teacher-student interactions has a positive effect on teacher-student relationships and students’ learning outcomes as well. More research on undergraduate students’ imitation and its effects on learning are needed to examine learning and instruction in higher education.


**Imitation and Culture**

Imitation and culture are closely related to each other (Hurley & Chater 2005). Nielsen (2012) proposed that imitation provided a rapid transfer between generations of a vast amount of information and skills and it also served as a foundation upon which various aspects of human cultures can be built. He found that when children imitated adults they usually copy unnecessary and arbitrary actions, which is called overimitation; and it was this overimitation persistently replicated how an object is produced or used and hence transmitted cultural ideas and practices across generations, including personal behaviors like facial expression, eye contact, posture, gaze, touch, gestures, and voice and tone and pitch, and instrumental acts like skills, traditions, language, and tools (Williamson, et al., 2010). Rogers (1999) and Rogers and Williams (2006) also found that imitation was used as a critical means to develop awareness of culture. More studies found that people in a community used imitation to build their culture (Whiten & Ham, 1992) and an outsider would use imitation to become part of the culture (Hung, 1999).

Although imitation plays an important role in cultural transmission and development, few studies had actually compared imitation in different cultures. Losin et al. (2012) found that American participants with European, African, and Chinese backgrounds had more neural activities in imitating people from the other two cultures. McCroskey et al. (1996) compared participants from Australia, Finland, Puerto Rico, and the United States and found that the behaviors that violated cultural expectations may have negative effects on cognitive learning. Therefore, it is worth further examining imitation in different cultures.

The present study was guided by three interrelated research questions:

Question 1: Do undergraduate students across three different educational contexts, two in the U.S. and one in China, engage in particular imitative behaviors, such as copying examples, following teachers’ behaviors, etc.?

Question 2: Do students believe these behaviors led to positive or negative learning outcomes? And, if so, do students across the three educational contexts differ in the types of imitation uses and in the perceived usefulness of the imitations?

Question 3: Given the cultural differences in imitative behaviors noted in the literature (Losin, et al., 2012), are there differences in the perceived imitative behaviors adopted by the U.S. and Chinese students?

**Methods**

Previous studies on imitation used either a direct observation method or a within-subject design to examine imitation in social interactions (Hurley & Chater, 2005; Meltzoff, 2005; Rogers & Williams, 2006; Zhou, 2012). Yet, research demonstrated that imitation is sometimes covert, that is, invisible or unclear to the observers (Decety, 2006; Heyes, 2011). For example, people used delayed imitation frequently, and it is difficult to identify their imitation across time and contexts using direct observations. Another significant
problem is that imitation allows the participants to use different methods to achieve the goal of the behavior they observed. People have flexible choices in performing imitation and they usually do not just copy the behaviors they observed. For example, children chose to turn on the light with their hands rather than heads (Gergely et al., 2002), or people might incorporate others’ ideas in a writing assignment (Rogers & Williams, 2006). The mismatch between the observed behavior and the response raises problems for the assessment of imitation through direct observation. Thus, observation methods are unable to capture covert imitation and focus only on the overt imitation that is “the disinhibited tip of the iceberg of continual covert imitation” (Hurley, 2008, p. 5). In order to have access to both overt and covert imitation, including delayed and mismatched imitations, the present study used two self-report questionnaires to examine undergraduate students' imitation.

**Participants**

Four hundred and fifty-six undergraduate students from two U.S. and one Chinese institutions voluntarily participated in the study. Table 1 shows the demographics of the

**Table 1. Demographics of Participants in Three Institutions.**

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<th>Demographics</th>
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<tr>
<td>Undecided</td>
<td>9.2</td>
<td>2.0</td>
<td>0.0</td>
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</tr>
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</table>

Note. N (1st US Institution) = 251. N (2nd US Institution) = 101. N (Chinese Institution) = 104. All participants responded to two questionnaires. After completing Questionnaire One, they immediately responded to Questionnaire Two. At the beginning of both questionnaires, the participants were informed of the purpose of the study and asked to focus on their experiences of imitation while answering the questionnaire.
participants in three institutions. The first U.S. institution is a large, public university where 251 students were recruited randomly in the waiting room during walk-in hours of an undergraduate advising program on campus between February 2012 and April 2012. Their mean age was 20.1 years (SD = 2.46). The second U.S. institution is a small public college where 101 undergraduate students were recruited by visiting classrooms randomly in August and September, 2013. Their mean age was 24.9 (S = 8.1). The Chinese institution is a large public university where 104 students were recruited randomly from four College English classes. The mean age was 19.4 (SD = 1.78). No international student is included in the study.

Measures

Two questionnaires were constructed specifically for the present study. They were developed from two resources. One resource is an existing 43-item questionnaire – Questionnaire about the Popular Conceptions of Learning (QAPCOL) (Cantoia, Giordanelli, Pérez-Tello, & Antonietti, 2011) which examines worldwide K-16 students' conceptions of learning, including students' learning habits (18 items), students' attitudes toward learning (17 items), and students' mistakes in learning (8 items). One of the major findings of the QAPCOL was students' uses of imitation in learning, including students' learning from others' demonstrations, experts' explanations, peer discussions, collaborations, knowledge verification, observations, and mistakes. Another resource is the latest developmental psychological and neuroscientific findings on children's imitation in learning, including imitating videos, real persons, role models or peers' attitudes, examples, teachers' behaviors, and delayed imitation (Hanna & Meltzoff, 1993; Hurley & Chater, 2005; Meltzoff, 2002, 2005, 2007; Meltzoff & Decety, 2003, Nadel & Butterworth, 1999, Rogers & Williams, 2006; Warnick, 2008). Based on these two resources, two questionnaires were developed to examine whether and how undergraduate students use and perceive imitation in their learning.

Questionnaire One focused on the first research question: do undergraduate students across three different educational contexts engage in particular imitative behaviors? (e.g., “I followed, maybe automatically, teachers’ behaviors in class, like taking notes or turning the pages.”), and Questionnaire Two examined the second research question: do students believe these behaviors led to positive or negative learning outcomes? (e.g., “I learned better when I followed teachers’ behaviors in class.”). Due to the nature of the two research questions, most of the items on the two questionnaires were parallel. Students reflected their use of a certain imitation in Questionnaire One, and then evaluated the effect of this particular imitation on their learning in Questionnaire Two.

Before answering the questionnaires, students were instructed to focus on their imitation in learning. Whether and how undergraduate students use various kinds of imitation is one of the research questions, thus no example was given purposely. None of the students asked for clarification while answering the questionnaires. Imitation helps students set and meet different expectations in various learning settings, thus learning was not defined.
specifically in Questionnaire Two. Students were expected to interpret learning expectations based on the various settings described in each item.

Students rated their agreements with each statement on a 5-point Likert-type scale anchored at 1 (Strongly disagree) and 5 (Strongly agree). The order of items within two questionnaires were randomized. The internal consistency reliability, Cronbach’s alpha, between the two questionnaires was 0.94.

A Principal Axis Factor (PAF) with a Varimax (orthogonal) rotation of the 16 Likert scale questions from Questionnaire One was conducted on data gathered from 456 participants. An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the items were factorable (KMO = .609). Four factors were therefore grouped as: learning materials (Cronbach’s α = 0.73), learning activities (Cronbach’s α = 0.69), problem solving processes (Cronbach’s α = 0.63), and learning attitudes (Cronbach’s α = 0.83). Cronbach’s alpha for all the items in Questionnaire One was 0.87. A Principal Axis Factor (PAF) with a Varimax (orthogonal) rotation of the 18 Likert scale questions from Questionnaire Two was conducted on data gathered from 456 participants. An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the items were factorable (KMO = .771). Four factors were hence grouped: the effects of imitations in learning materials (Cronbach’s α = 0.71), the effects of imitations in learning activities (Cronbach’s α = 0.75), the effects of imitations in problem solving processes (Cronbach’s α = 0.68), and the effects of imitations in learning attitudes (Cronbach’s α = 0.88). Two items were added to examine the effects of imitations in general. The Cronbach’s alpha for all 18 items in Questionnaire Two was 0.90.

Results

Undergraduate Students’ Uses and Perceptions of Imitations across Genders, Grade-levels, and Disciplines

Using t-tests of mean differences, the demographic data were compared on three variables – gender, grade-level, and discipline. The gender, grade-level, and disciplinary differences in undergraduate students’ uses of imitation in learning are presented in Figure 1. Female students reported using more imitations than male students in 13 out of 16 imitations, and using significantly more in five items – Preferring watching videos to reading written instructions, Following teachers’ behaviors, Having inspirations from discussions, Using homework samples, and Following the same steps in the examples. Juniors and seniors reported using more imitations than freshmen and sophomores in eight items, and significantly more ones in five items – Preferring watching videos to reading written instructions, Being reluctant to initiate an activity, Having inspirations from discussions, Using the same method in the examples, and Being influenced by classmates’ attitudes, while significantly fewer imitations in two items – Following teachers’ behaviors and Following the steps in examples. Science and math students reported using more imitations than non-science and math students in nine items, with significantly more in three ones – Following teachers’ behaviors, Following the same steps in the examples, and Applying past examples in new contexts.
Figure 1. Gender, Grade-level, and Disciplinary Differences of Undergraduate Students’ Uses of Imitation in Learning.

The gender, grade-level, and disciplinary variations in students’ perceptions of the effects of imitations on learning are presented in Figure 2. Female students reported perceiving positive effects of 15 imitations than male students, with significantly more positive effects on seven imitations – Effects of watching videos rather than reading written instructions, initiating an activity, blackboard demonstration, homework samples, observing others’ mistakes, observing successful examples, and live demonstration. Juniors and seniors reported perceiving more positive effects of 16 imitations, and significantly more in nine ones – Effects of using textbooks with lots of examples, following teachers’ behaviors, discussing schoolwork with others, homework examples, observing others’ mistakes, applying past examples in new contexts, classmates’ positive attitudes, live demonstration, and having examples, while one significantly less positive effect of having leaders in discussions. Non-science and math students reported perceiving more positive effects of 12 imitations, but with more significantly less positive effect of listening to lectures rather than reading textbooks than students in science and math.
Figure 2. Gender, Grade-level, Disciplinary Differences of Undergraduate Students’ Perceptions of Effects of Imitation on Learning.

Undergraduate Students’ Uses of Imitation in Learning

The means of 456 undergraduate students’ responses to 16 items in Questionnaire One are presented in Figure 3. Overall, students showed agreement (Mean > 3.00) to 14 items, that is, they tended to perform these imitations while learning. Exceptions occurred in items for Preferring classmates’ rather than teachers’ explanations (M = 2.68, SD = 1.07) and Being influenced by classmates’ attitudes (M = 2.61, SD = 1.22). As for individual institutions, students in the first U.S. institution showed agreement on 13 items. Exceptions occurred in items for Being reluctant to initiate an activity (M = 2.98, SD = 1.32), Preferring classmates’ rather than teachers’ explanations (M = 2.85, SD = 1.07) and Being influenced by classmates’ attitudes (M = 2.49, SD = 1.10). Students in the second U.S. institution showed agreement on 14 items, with exceptions for two items, Preferring classmates’ rather than teachers’ explanations (M = 2.55, SD = 1.19), and Being influenced by classmates’ attitudes (M = 2.22, SD = 1.12). Students in the Chinese institution showed agreement on 14 items, with exceptions for two items: Following teachers’ behaviors (M = 2.16, SD = 1.18) and Preferring classmates’ rather than teachers’ explanations (M = 2.38, SD = .84).
Figure 3. Means of Undergraduate Students’ Uses of Imitations in Learning.

MANOVA is used to determine whether there were significant univariate main effects for institutions of undergraduate students’ responses to the uses of imitations (SPSS version 21). *p < 0.05; **p < 0.01.

To examine differences of students’ uses of imitation across the three institutions, a multivariate analysis of variance (MANOVA) was conducted comparing student responses from the three separate institutions. Results of the MANOVA on Questionnaire One demonstrated a significant multivariate effect for institutions, Hotelling’s T = 1.09, F = 14.91, p < .000, partial eta squared = .36. Power to detect the effect was 1.000. Given the significance of the overall test, the univariate main effects were examined. Significant ANOVA tests for institutions were obtained for eight items of using imitation in learning – Preferring blackboard demonstration (p = .00), Following teachers’ behaviors (p = .00), Preferring classmates’ to teachers’ explanations (p = .00), Using homework samples (p = .01), Using the same method in the examples (p = .00), Following the same steps in the examples (p = .00), Being influenced by classmates’ attitudes (p = .00), and Having role models in schoolwork (p = .00).

Significant institutional pairwise differences of students’ uses of imitation were further examined. Students in the two U.S. institutions showed significant differences to three items – Preferring watching videos (p = .02), Preferring blackboard demonstrations (p = .04), and Preferring classmates’ to teachers’ explanation (p = .02). Students in the first U.S. and Chinese institutions showed significant differences to ten items, including six
MANOVA is used to determine whether there were significant univariate main effects for institutions of undergraduate students’ responses to the perceptions of the effects of imitation on learning (SPSS version 21). *p < 0.05; **p < 0.01.

out of seven imitations in Learning Activities, two out of the three imitations in both Problem Solving Processes and Learning Attitudes. Students in the second U.S. and Chinese institutions responded significant differences to eight imitations, including four imitations in Learning Activities, one imitation in Problem Solving Processes, and all the three imitations in Learning Attitudes.

Undergraduate Students’ Perceptions of the Effects of Imitations on Learning

The means of 456 undergraduate students’ responses to 18 items in Questionnaire Two are presented in Figure 4. Overall, students showed agreement (Mean > 3.00) to 17 items, that is, they agreed on the positive effects of these imitations on learning. The only exceptions occurred in items for Effect of having classmates’ rather than teachers’ explanations (M = 2.98, SD = 1.06). Students showed highly positive impacts of three items (Mean > 4.00) on their learning, including Effect of blackboard demonstration (M = 4.32, SD = .82), Effect of live demonstration (M = 4.18, SD = .95), and Effect of having examples (M = 4.20, SD = .99).
As for individual institutions, students in the first U.S. institution agreed on the positive effects of 17 items on learning with the only exception as Effect of initiating an activity (M = 2.93, SD = 1.22), and the highly positive effects of seven imitations. Students in the second U.S. institution agreed on the positive effects of 16 items on learning with exceptions for Effect of discussing schoolwork with the others (M = 2.66, SD = 1.24) and Effect of classmates’ positive attitudes (M = 2.95, SD = 1.32), and the highly positive effects of eight imitations. Students in the Chinese agreed on the positive effects of 14 items on learning with exceptions for Effect of watching videos rather than reading written instructions (M = 2.91, SD = 1.18), Effect of following teachers’ behaviors (M = 2.12, SD = 1.19), Effect of having classmates’ rather than teachers’ explanations (M = 2.70, SD = .83), and Effect of discussing schoolwork with the others (M = 2.34, SD = .88), but they did not report any imitations having highly positive impacts on their learning.

Results from the MANOVA on students’ perceived impacts of the imitations on their learning demonstrated a significant multivariate effect for institutions, Hotelling’s T = 2.04, F = 24.64, p < .000, partial eta squared = .51. Power to detect the effect was 1.000. Given the significance of the overall test, the univariate main effects were examined. Significant univariate ANOVA tests for institutions were obtained for 16 items of the effects of imitation on learning, excluding Effects of listening to lectures rather than reading textbooks (p = .10) and Effect of having role models (p = .19).

Significant institutional pairwise differences of students’ perceived impacts of imitation on their learning were further examined, using MANOVA. Students in the two U.S. institutions showed significant differences to eight items, including Effect of initiating an activity (p = .00), Effect of blackboard demonstration (p = .00), Effect of discussing schoolwork with others (p = .00), Effect of having leaders in the discussions (p = .00), Effect of observing mistakes (p = .00), Effect of observing successful examples (p = .00), Effect of the classmates’ positive attitudes (p = .00), and Effect of having examples (p = .00). Students in the first U.S. and Chinese institutions showed significant differences to 14 items, excluding Effects of listening to lectures rather than reading textbooks (p = .06), Effect of observing successful examples (p = .28), Effect of having role models (p = .39), and Effect of regarding role models as future self (p = .13). Students in the second U.S. and Chinese institutions responded with significant differences to 14 items, excluding Effect of listening to lectures rather than reading textbooks (p = .05), Effect of having leaders in discussions (p = .87), Effect of classmates’ positive attitudes (p = .35), and Effect of having role models (p = .43).

**Discussion**

Previous research of imitation in university teaching tended to regard imitation as a low-level cognitive copying behavior that was most useful in infancy or early childhood. The assumption had been that cognitively developed university students do not need to use imitation because its effect on learning is minimal, or those students should not use imitation because imitation might inhibit their creativity in learning. While recent research provides an updated understanding of imitation that it is a high-level cognitive ability and...
plays an essential role in teaching and learning. Therefore, this study sought to fill a gap in current studies on imitation by exploring undergraduate students’ use of perceived imitation across three institutions representing two different cultures, and providing practical suggestions for effective university learning and teaching.

The findings suggested that undergraduate students reported using imitation in all four dimensions of learning (Learning Materials, Learning Activities, Problem Solving Processes, and Learning Attitudes). Results further showed that students indicated in their responses that they learned better when using imitations, which highlighted the significance of imitation in undergraduate students’ education. In addition, self-reports indicated that there were differences across genders, grade-levels, disciplines, and institutions in the perceived use and usefulness of undergraduate students' imitation. These differences were most pronounced when exploring for cultural variations in the uses and usefulness of imitation between U.S. and Chinese students. These findings provided suggestions for further research on undergraduate students’ use of imitation across cultures, and may have important and practical implications for students and teachers in understanding imitation and using it effectively in higher education.

**Imitation as an Effective Learning Tool in Higher Education**

The central finding, that undergraduate students reported using imitation in learning, supported the results of previous research in developmental psychology, indicating that imitation exists and develops throughout adulthood (Meltzoff, 2005; Meltzoff & Decety, 2003). Most of the imitations undergraduate students used are delayed imitation, such as when the teacher is lecturing, students will observe and save those actions, and imitate the actions when they meet similar problems later. Delayed imitation required students to make connections across time and contexts, which involved more cognition in the process. Therefore, in their responses, undergraduate students indicated high-level cognitive abilities in evaluating current contexts and choosing what and how to imitate in those contexts. This also enabled students to use different actions or methods to achieve their goal, which led to what has been described in the literature as a genuine imitation (Eckerman, 1993). While using delayed imitation, undergraduate students reported flexibility and creativity in finding examples. If they did not have access to live demonstrations, they would search for print examples instead. Students imitated pre-existing examples, and also created opportunities for new examples, such as discussions with teachers or peers. Besides imitating their own previous experience, students imitated others’ ideas and experience as well. They imitated not only each other’s behaviors, but also attitudes and thinking, as noted in previous research (Cook & Bird, 2011; Warnick, 2008).

This study further found that undergraduate students reported using imitation as an effective learning tool, as suggested in developmental psychological studies (Hurley & Chater, 2005; Rogers & Williams, 2006). These results echoed previous findings on the positive effects of various activities or processes in learning. For example, the highly positive impact of exemplification on students’ learning was aligned with Bender (1979) and Warnick’s (2008) research on role models. The positive effect of live demonstrations on learning, such as lecturing or blackboard demonstration, contributed to Schaal’s (1999)
proposal that teacher’s demonstrations help students learn effectively, and Schaal, Ijspeert, and Billard’s (2003) conclusion that demonstrations will significantly speed up the learning process. Students’ responses suggested a strong preference for watching videos rather than reading written instructions as an enhancement for learning. This result was in line with the findings that dynamic visualizations are more effective than static visualizations (Höffler & Leutner, 2007; Tversky & Morrison, 2002; Van Gog et al., 2009). U.S. students’ report of frequent imitations of teachers’ behaviors provided a better understanding of the positive association between instructional behaviors and students’ engagement in learning (Schroeder et al., 2011). Students’ reports on the highly positive impacts of discussions, contexts, and delayed imitation on their learning was aligned with Lave and Wenger’s (1991) theory of situated learning and the model of a community of practice. By supporting these studies, the findings from this study highlighted the critical role of imitation in learning. Students indicated imitating more when they were exposed to live demonstrations, examples, or role models, and, when they imitated, they tended to follow the same methods or even the same steps in the examples. This in turn led to their perceptions of more effective learning. Therefore, being able to imitate effectively across time and contexts may have a significant impact on undergraduate students’ learning.

Self-reports showed gender, grade-level, and disciplinary differences in undergraduate students’ uses and perceived usefulness of imitation. Female students used imitation more overall and reported more significantly positive of effects of imitation than male students. Upperclassmen used imitation more cognitively and perceived greater benefit from doing it than underclassmen, such as Freshmen and sophomores tended to imitate behaviors, while juniors and seniors reported more delayed imitations. Science and math students used imitations in more direct ways and delayed imitation as well. This may reflect discipline-distinct teaching practices, such as the specific procedural features of scientific and math instruction.

**Imitation as an Effective Teaching Tool in Higher Education**

Results further suggested that imitation can be used as an effective teaching tool. Teachers should consider how to effectively develop and guide students’ imitations in curriculum and instruction. For instance, examples play an important role in undergraduate students’ imitation and learning; therefore, teachers may choose textbooks with more examples, utilize examples from various resources such as videos or real life stories, and provide more demonstrations or homework samples. Teachers may also facilitate students’ imitations by organizing discussions or introducing successful examples in school works to enhance students’ learning. Students reported a high preference towards learning from observing others’ mistakes; therefore, when introducing new content, teachers may use activities such as asking students to identify or correct mistakes. Teachers should also pay attention to the functional aspects of their behaviors in guiding, encouraging, or even reminding students in class.

While students from all three institutions reported uses of imitation in all four dimensions of learning, there were interesting differences in their endorsement of both the use and
usefulness of imitation in learning. For instance, U.S. students claimed that they were not influenced by others' attitudes and students in the first U.S. institution showed a very slight preference towards having role models in schoolwork. But students also claimed that role models had highly positive impact on their learning. The significant differences between students' reports on the positive effects of imitating others and using this imitation in learning demonstrated that holding one particular belief does not automatically give preference to the use of certain strategies (Purdie, Hattie, & Douglas, 1996). Therefore, teachers should help students realize that imitating role models, including classmates' positive attitudes in group discussions or in class, may have positive impacts on learning. Emphasizing students' positive attitudes or introducing role models in schoolworks or having leaders in group discussions might encourage students to use imitation more effectively.

Undergraduate students' genuine imitation in the classrooms has two essential components. The first component is that students need to react to the behaviors they observed, and the other one is that students' reactions should be related to some behaviors. Teachers expect that the behaviors students related to are the behaviors they are supposed to observe. Unfortunately, that is not always the case in classrooms. Students might make wrong connections. Therefore, in order to enhance students' effective imitation in learning, teachers need to explicitly explain their expectations of students' reactions before the activities, thus to direct students to make correct connections. For example, when explaining a math problem, teachers should tell students that they expect them to pay attention to the procedures and to use these procedures in solving similar problems. Thus, students' imitation will be guided to the procedures rather than the results and students might be able to save and perform the procedures later.

This study showed that undergraduate students reported the ability to find examples, but at the same time, they showed less creativity in using these examples – they reported a high preference towards imitating the same method or even the same steps in the examples. Another important problem was the significant difference between students' reports on imitations across time and contexts. Although 92.6% of the undergraduate students agreed or strongly agreed that delayed imitation was critical to learning, only 57.4% of them reported using delayed imitation in learning. Therefore, it is important for teachers to encourage students to use imitation more consciously, such as by helping students to develop the ability to understand the context of observed behaviors, to save these examples for later use, and to connect various behaviors across time and contexts; thus students can see learning as a dynamic long process rather than isolated individual activities.

**Imitation as an Effective Tool in International Education**

Undergraduate students in different cultures reported different uses and perceptions of imitations, which aligned with previous research on the critical role of imitation in culture transition and development (Rogers & Williams, 2006; Williamson et al., 2010). Generally speaking, U.S. students reported more uses of imitation and perceived a much more positive effect of imitation on learning than Chinese students did.
Chinese students reported being influenced by classmates’ attitudes, having role models, and showing more reluctance in taking the lead by initiating a class activity. They also indicated perceiving a more positive effect from having leaders in discussions. This may be a reflection of the culture of Chinese education—a cautiousness to avoid being different or receiving attention in groups with an emphasis on collaboration and role models. Teachers’ blackboard demonstration and having homework samples are the routines of Chinese education, which might explain the significant differences between U.S. and Chinese students’ uses of these imitations. Contrary to U.S. students, Chinese students reported significantly lower endorsement of imitating teachers’ behaviors in class and disagreed with the positive effects of most behavioral imitations on learning activities. Again, this echoes Chinese cultural norms which underemphasize the use of a lot of behaviors in communication, in contrast to American cultural norms in which people tend to give continuous behavioral feedback. These findings support McCroskey et al. (1996)’s proposal that culture influences the relationship between imitation and cognitive learning, and points to a need for further studies on the effects of culture on students’ imitation and learning.

These findings have potentially significant implications for international education. With a greater understanding of the cultural influences on students’ learning, both U.S. and Chinese institutions would become better prepared to contribute to the success of international students.

Implications for Future Research

This study is among the first studies on adult imitation in undergraduate educational settings. The findings have contributed to the existing literature on human imitation, suggesting the critical role of imitation in undergraduate students' learning and teaching, and highlighting cultural influences in students’ imitation and learning. However, a number of issues need to be taken into consideration in future work.

The two questionnaires had strong reliability statistics (Cronbach’s alphas for the Questionnaire One and Questionnaire Two were 0.87 and 0.90), and the Cronbach’s alpha between the two questionnaires was 0.94. But two subcategories in Questionnaire One—imitation in learning activities (.69) and imitation in problem-solving processes (.63), and one subcategory in Questionnaire Two—the effects of imitation in problem-solving processes (.68)—had relatively weak reliability. Because this was an exploratory study examining both overt and covert imitation, all subcategories were used in the analysis. No measures of both overt and covert imitation currently exist, and while the questionnaires for this study have limitations, the measure does represent an initial attempt to explore a phenomenon that is not easily measured. In this study, several students wrote their experience of imitation in learning at the end of the questionnaires, such as imitating mistakes. These qualitative information was also collected, and the possibility of interviewing focus groups might help with future revisions of the questionnaires as well.

Another limitation concerns the dimensions of learning examined in the present study. Inspired by Cantonia et al. (2011)’s questionnaire about the undergraduate students' con-
ceptions of learning, and based on definitions and previous findings of imitation (Hurley & Chater, 2005; Meltzoff, 2002, 2005, 2007; Meltzoff & Decety, 2003; Rogers & Williams, 2006; Warnick, 2008), this study examined imitation in four dimensions, namely, learning materials, learning activities, problem solving process, and learning attitudes. Learning is so complicated that any generalization of the conclusions is limited to these aspects. Future studies may either expand or refine these dimensions of learning to generate a more comprehensive understanding of undergraduate students’ imitation.

This study used a self-report method to examine undergraduate students’ imitation. Students were told clearly at the beginning of each questionnaire that they should focus on imitation in their learning. Students needed to situate themselves in various contexts to reflect on their experiences; thus it might be possible that they took other factors into consideration while answering the questionnaire. Therefore, additional evidence from non-self-report measures – such as students’ interviews, students’ learning outcomes or classroom observations – may contribute to a more complete picture of undergraduate students’ imitation across cultures.

Conclusion

Imitation is a high-level cognitive ability that emerges in infancy and develops throughout adulthood (Meltzoff & Decety, 2002). It is associated with a variety of cognitive skills such as motor skills, communication, emotion, and intelligence (Hurley & Chater, 2005). The present study presented an updated understanding of what imitation is and how it can be developed and used in university learning and teaching. By examining U.S. and Chinese undergraduate students’ imitation, results suggested that

- Undergraduate students from both cultures used various imitations in learning and perceived those imitations to have positive effects on their learning.
- Gender, grade-level, disciplinary, and especially, cultural differences of undergraduate students’ uses of imitation and their perceptions of the usefulness of those behaviors varied in ways that suggest the significance of broad norms when using imitation in undergraduate teaching and learning.
- Undergraduate students reported using imitations in learning materials, activities, and attitudes, and problem solving processes, such as using examples and preferring live demonstrations, following the methods and steps in examples, preferring imitating others in class activities, imitating each other’s ideas in discussions, having role models in schoolwork, perceiving role models as their future selves, and applying past examples in new contexts; and U.S. students automatically followed teachers’ behaviors in class and Chinese students reported being influenced by classmates’ attitudes.
- General educators should develop and guide these students’ imitations in curriculum and instruction by providing examples and demonstrations in various activities, from various resources, and via various media, encouraging role models, and making conscious connections between current and previous knowledge and experience.
The findings contributed to a better understanding of the significance of imitation in undergraduate student education, provided implications for teachers and students in using imitation as an effective teaching and learning tool, and offered important avenues for future research on the topic.

References


The Role of Flipped Learning in Managing the Cognitive Load of a Threshold Concept in Physiology

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Abstract

To help students master challenging, threshold concepts in physiology, I used the flipped learning model in a human anatomy and physiology course with very encouraging results in terms of student motivation, preparedness, engagement, and performance. The flipped learning model was enhanced by pre-training and formative assessments that provided opportunities for retrieval practice. Students in flipped learning sections had much higher retention and pass rates than those in non-flipped learning sections. Students also achieved preset benchmarks for factual and procedural knowledge while falling slightly short for conceptual knowledge. I found that the flipped learning model effectively addresses the cognitive load involved in learning physiology, which typically has a high cognitive load. By lowering extraneous cognitive load via intentional content, managing intrinsic cognitive load via pre-training and retrieval practice, and increasing germane cognitive load via the extended class time reserved for problem solving, the flipped learning model offers a very supportive learning environment with numerous opportunities for self-regulated learning for students struggling to master this threshold concept. In future semesters, the increased available class time afforded by the flipped learning format will be used to emphasize conceptual understanding in the problem sets.

Keywords: Flipped learning, threshold concepts, cognitive load, formative assessment, self-regulated learning, retrieval practice.

Flipped learning is a learner centered strategy in which students are exposed to the fundamentals of a concept prior to attending the classroom session. Content is delivered via a learning module that is presented in the form of a video, power point, or some other type of instructional medium. This frees up class time for deeper learning activities that address the understanding and application of this newly learned concept (Bergman & Sams, 2012). In this way, the flipped learning model lends itself very well for the scaffolding of a difficult concept, thereby providing learning structure and precluding the learner from becoming overwhelmed by complexities (Tawfik & Lilly, 2015).

Cardiovascular physiology, which deals with the workings of the heart and blood vessels is conceptually difficult for students because of its highly integrative nature. The learner has to juggle several different disciplines such as physics, chemistry, and biology and varying levels of organization such as molecules, cells, tissues, organs, and organ systems

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at the same time (Michael et al., 2002). Any meaningful learning of this topic would require the learner to think like an expert and apply these concepts to clinical problems (Michael, 2001). For these reasons, cardiovascular physiology can be considered to be a threshold concept.

A threshold concept is defined as a challenging concept that can be troublesome, transformational, and integrative to the learner (Meyer & Land, 2003). The concept is troublesome because it is conceptually difficult, alien, or tacit (Meyer, Land, & Baillie, 2010). A threshold concept is transformational when it results in new ways of thinking about something or produces a paradigm shift in thinking for the learner. Cardiovascular physiology can be transformational for the learner when hidden connections between lifestyle and cardiovascular function become revealed. It is integrative in the sense that it exposes the interrelatedness of this concept to other disciplines (Meyer & Land, 2003).

A learner that is in the process of mastering the threshold concept is said be undergoing a threshold experience, which occurs within a liminal space or learning environment. A learner who is yet to begin engaging with the threshold concept is said to be in a pre-liminal state; when the learner begins to engage with the concept, the learner is said to have entered the liminal state; and once the learner has mastered the concept, he or she is said to have crossed the threshold and reached a post-liminal state. Frequently, when faced with a threshold concept, the learner is disinclined to leave the pre-liminal state and pretends to engage with the concept by memorizing bits of seemingly important information without any meaningful learning taking place. The initial challenge for the instructor therefore would be to encourage these students to enter the liminal state so they may begin to truly engage with the concept. This is where the flipped learning method can be extremely valuable. Once the student has been exposed to the background information needed to understand the concept outside of class, regular low stakes quizzes on this material can help build student confidence, interest, and motivation (Warnock, 2004) thereby urging the student to enter the liminal state and engage deeply with the threshold concept. Regular, low stakes, formative assessments providing immediate feedback, have also been shown to have a profoundly positive effect on self-regulated learning (Sadler, 1998; Pintrich & Zusho, 2002; Nicol & MacFarlane-Dick, 2006). When combined with thoughtful scaffolding and frequent low stakes quizzes, flipped learning can help to break down barriers such as lack of confidence and a tendency to procrastinate when faced with a challenging task, both of which prevent the learner from entering the liminal state.

A concept with a high level of difficulty is said to have a high intrinsic cognitive load, which is characterized by too many elements within the concept that must interact continuously, requiring a great deal of mental effort. (Sweller, 1994). Intrinsic cognitive load cannot be reduced because the nature of the information is inherently difficult. But it can be managed or manipulated by thoughtful scaffolding (Mayer, 2005). Students learning cardiovascular physiology need to juggle several interacting mini-concepts drawn from physics, chemistry, and biology before gaining conceptual understanding. And this takes a lot of mental effort. In order to understand the concept, students must engage in intrinsic cognitive processing, which is limited by the number of interacting elements that can...
be held in the working memory of the learner (Mayer, 2005). Our working memory can only hold about four units of newly acquired information for a period of 30 seconds (Cowan, 2001). However, these limits can be expanded infinitely when previously learned information stored in long term memory is retrieved (Ericsson & Kintsch, 1995) and enhances working memory. This greatly reduces the mental effort required to grasp a concept. Here is where the flipped learning model makes its strongest contribution. In the non-flipped learning model, the instructor presents all the interacting elements embedded in a concept and the students are expected to juggle a relatively high number of yet unfamiliar conceptual elements in order to comprehend the information. The intrinsic cognitive load is especially evident in this setting and the student struggles to understand the unfamiliar concept. The flipped learning model on the other hand, provides the learner with the opportunity to process new information outside of class, rehearse it, and store it in long term memory before coming to class. Later when faced with the same concept in class, the learner is able to retrieve information from long term memory, thereby vastly expanding the limits of the working memory. This kind of pre-training helps to significantly reduce the mental effort needed for information processing thereby successfully managing the intrinsic cognitive load (Musallam, 2010). When pre-training is combined with retrieval practice as in a short quiz based on the material learned, the effect on learning and long-term retention can be significant (Karpicke, 2012; Roediger & Butler, 2011; Roediger & Pyc, 2012).

We know that learning has taken place when the student is able to transfer newly acquired conceptual knowledge to real world examples. This involves germane load processing, which is a kind of deep conceptual processing that alters the very schema or mental organization of information in the learner’s mind (DeLeeuw & Mayer, 2008). We want to increase the level of germane load processing or germane cognitive load in our learners. Another major strength of the flipped classroom is that it frees up class time for deeper learning (Bergman & Sams, 2012). Once in the liminal space, the learner has the opportunity to deepen conceptual understanding and expand procedural knowledge by applying newly learned concepts to novel situations, thereby increasing germane cognitive load.

Alternatively, it is possible to increase a different kind of cognitive load and actually hamper a student’s learning by including facts that are not directly relevant to the concept that is being learned. This is called extraneous cognitive load (Sweller, 1994) and is described as any kind of mental processing that does not support the learning objective. This can be avoided by evaluating instructional content for inclusion of only the facts and background knowledge that are relevant to the concept. This practice is known as intentional content as opposed to the practice of merely covering the content. Evaluating content and streamlining it in a meaningful way is a necessary prerequisite to ensure the success of flipped learning (Hamdan McKnight, McKnight, & Arfstrom, 2013) or to ensure any meaningful learning for that matter (Lujan & DiCarlo, 2005).

Here, I describe the adoption of the flipped learning method to accomplish the following: a) to promote student preparedness, motivation, confidence and encourage self-regulated learning; c) to draw students into the liminal space and encourage them to master the
threshold concepts embedded in cardiovascular physiology; d) to manage intrinsic cognitive load, increase germane cognitive load, and reduce extraneous cognitive load during this learning process; e) to continually inform and shape my teaching.

**Methods**

I studied the usefulness of the flipped learning approach for a period of four consecutive semesters in a Human Anatomy & Physiology course each with a class size of 18-24 and a total of 90 students at Bronx Community College, a campus belonging to the City University of New York. Here, I report the effectiveness of the flipped learning method in the lecture portion of the course, and for the topic of cardiovascular physiology, in particular. As a comparison of general student performance, I present data from four consecutive semesters prior to the flipped learning approach. These lecture class sizes were also between 18-24 students with a total of 92 students.

**Intentional Content and Formative Assessment**

The first step in this process was to evaluate the course content and outline student learning outcomes for each topic based on the philosophy of intentional content usage rather than content coverage (Lujan & DiCarlo, 2006; Hamdan et al., 2013). Learning outcomes were classified into three categories – factual knowledge, conceptual knowledge, and procedural knowledge (Anderson & Krathwohl, 2000). In this way, it was easy to separate the factual knowledge from the other two types and present it in a learning module to be mastered by the students prior to attending class (see Table 1).

**Table 1. An excerpt of Student Learning Outcomes and how they are classified.**

<table>
<thead>
<tr>
<th>Student Learning Outcome</th>
<th>Factual knowledge</th>
<th>Conceptual Knowledge</th>
<th>Procedural Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>List the factors that affect stroke volume and explain how each affects stroke volume</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write the full equation for cardiac output</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predict what would happen to cardiac output when stroke volume increases (or decreases) or when heart rate increases (or decreases)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Apply the relationship between cardiac output, heart rate, and stroke volume to a real life situation when a person’s cardiac output must increase during exercise to meet the body’s increased oxygen demands.</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Learning modules were designed in a way that it would take the student no more than two hours to master. They were made available in a folder titled “Help for Pre-lecture Quizzes” and contained a total of 10 learning modules (one for each quiz) via the Blackboard.
A weekly lecture quiz served as the primary motivator for students to master this knowledge prior to attending a lecture on the same topic (see Table 4 for a list of topics). These quizzes worth 20 points each, were typically easy and assessed mastery of fundamental knowledge, without which the student cannot hope to achieve deeper conceptual understanding (see Table 2).

Table 2: Examples of Questions appearing on a Low Stakes Lecture Quiz.

<table>
<thead>
<tr>
<th>I. Fill in the blanks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is more Na(^+) __________ (inside/outside) cells</td>
</tr>
<tr>
<td>2. There is more Ca(^{++}) __________ (inside/outside) cells</td>
</tr>
<tr>
<td>3. There is less K(^+) __________ (inside/outside) cells</td>
</tr>
<tr>
<td>4. When the concentration gradient decreases, the speed of diffusion __________</td>
</tr>
<tr>
<td>(increases/decreases).</td>
</tr>
<tr>
<td>5. ____________ (simple diffusion/active transport/osmosis/facilitated diffusion)</td>
</tr>
<tr>
<td>is the movement of molecules up or against their concentration gradient.</td>
</tr>
<tr>
<td>6. When the voltage rises above the resting membrane potential and approaches zero,</td>
</tr>
<tr>
<td>we call it ______________ (depolarization/repolarization/hyperpolarization)</td>
</tr>
<tr>
<td>7. When the voltage falls below the resting membrane potential, we call it __________</td>
</tr>
<tr>
<td>(depolarization/repolarization/hyperpolarization)</td>
</tr>
<tr>
<td>8. When the voltage falls and moves away from zero, we call it __________ (depolarization/repolarization/hyperpolarization)</td>
</tr>
<tr>
<td>9. When voltage gated K(^+) channels open, K(^+) __________ (outflow/inflow) occurs.</td>
</tr>
<tr>
<td>10. When voltage gated Ca(^{++}) channels open, Ca(^{++}) __________ (outflow/inflow) occurs.</td>
</tr>
<tr>
<td>11. Under parasympathetic stimulation, the SA node will make the heart beat __________ (faster/slower) than 72 beats.</td>
</tr>
<tr>
<td>12. The SA node sends its signal first to the ____________ (AV bundle/Purkinje fibers/AV node/Bundle branches).</td>
</tr>
</tbody>
</table>

The quizzes were administered at the start of each lecture session and so latecomers missing the first 20 minutes of class time were not allowed to take the quiz. Students were also not given opportunities to make up a missed quiz. However, only the top 8 quiz grades were included in the lecture quiz average to allow for unforeseen circumstances. Quiz grades comprised 12% of the total grade for the course with each individual quiz contributing 1.5% to the final course grade. Students were repeatedly informed that they had to score 90% or above in these quizzes in order to be able to do well in the higher stakes lecture examination, which includes questions that are significantly more difficult than those that appear in the weekly quizzes (see Table 3). The benchmark for student performance was set at 80% for the low stakes quiz grade and 70% for the higher stakes lecture grade.
Table 3: Examples of Questions Appearing in High Stakes Lecture Exam.

<table>
<thead>
<tr>
<th>Examination Question</th>
<th>Assessment of</th>
</tr>
</thead>
</table>
| Mr. Z is recovering from a heart attack. However, he is back in the ICU with fluid accumulation in his lungs. The following are the possible reasons for his condition EXCEPT:  
  a) Right ventricular output exceeds left ventricular output  
  b) The stroke volume on both sides of the heart are equal  
  c) The left ventricle is probably damaged  
  d) Left ventricle pumps less than the right ventricle                                                                                                   | Procedural Knowledge          |
| The following statements regarding the electrical activity in a cardiac myocyte are true EXCEPT:  
  a) The slow inflow of calcium ions creates a plateau in the action potential.  
  b) The repolarization phase of the action potential is brought about by the inflow of potassium ions  
  c) The plateau increases the absolute refractory period of the action potential.  
  d) The depolarization phase of the action potential is rapid and caused by the inflow of sodium in a positive feedback cycle | Conceptual Knowledge          |
| Two factors that directly affect blood pressure are:  
  a) diet and exercise  
  b) osmotic and hydrostatic pressures  
  c) flow and peripheral resistance  
  d) peripheral resistance and blood volume                                                                                                                 | Factual Knowledge             |

A Typical “Lecture Session” in the Flipped Learning Format

The lecture period is usually about 3 hours with two ten minute breaks included. In my flipped lecture session, these blocks of lecture time are organized in such a way as to include a variety of student-centered activities (Figure 1). The quiz is always administered during the first 25 minutes, followed by a five-minute feedback period when I review the quiz with the students. This is followed by short 8-10-minute mini-lectures of new concepts interspersed by periods of rehearsing of conceptual information via interactive note-taking, explanation of worked examples followed by problem solving either individually or in small groups, and breakdown of clinical problem solving into discrete steps (Figure 1). When students solve clinical problems there is plenty of opportunity for peer to peer and instructor to peer interaction. The latter is intended to help students correct any misconceptions and keep them moving in the right track. After working on the problem, students are often invited to the board to breakdown clinical problems into discrete steps using flow charts.
Formative and Summative Assessments

Formative and summative assessments of student performance were regularly conducted. Formative assessments were made based on the students’ performance on weekly quizzes and in-class problem solving exercises. Summative assessments were based on the students’ performance on three full length lecture examinations. Student perceptions of the flipped learning approach were collected in the form of responses to a short survey at the end of the first lecture examination. Summative assessment of factual, conceptual, and procedural knowledge of cardiovascular physiology was done using the full length lecture examination as the assessment tool with roughly one third of the questions devoted to assessing each type of knowledge—factual, conceptual, and procedural.

Results

A general comparison of students who were taught using the non-flipped learning method \((n = 92)\) versus the students that were taught using the flipped learning method \((n=90)\) was made. Student performance data from a total of 8 different sections was analyzed with four of these sections from non-flipped learning sections that I had taught prior to the four flipped learning sections. Analysis of student performance data shows that the students in the flipped learning sections did significantly better in terms of pass rates, retention rates, and overall performance (Figure 2).

Analysis of student performance in the high stakes lecture examinations also showed that students from the flipped learning classes performed significantly better with more number of students scoring at least 70% on a given lecture examination (Figure 3). It is im-
important to note that both learning modes operated from the same set of learning outcomes with student centered learning strategies embedded in both. The difference was that in the flipped learning model, students were given the opportunity for pre-training followed by retrieval practice and more class time was devoted to student centered learning activities.

![Graph showing student performance in non-flipped vs. flipped learning](image)

**Figure 3.** Students scoring at least a C in lecture examinations in non-flipped vs. flipped learning.

In the flipped learning sections designated I, II, III, and IV student performance in the weekly lecture quizzes shows that at least 90% of the students scored 80% or more. There was more variation in student performance across the four sections (60-92%) when students scoring 90% or more on these weekly quizzes was taken into account (Figure 4).

![Graph showing student performance on weekly quizzes within the flipped learning format](image)

**Figure 4.** Student performance on weekly quizzes within the flipped learning format.
Students in all four flipped learning sections were asked how they felt about preparing and taking weekly lecture quizzes. 100% of the responses were resoundingly positive. Most of them remarked that it motivated them to keep up with the lecture material or they wouldn’t study for the lecture portion of the course until it was time to prepare for a lecture examination.

I used Flipped Section III, which had the lowest percentage of students scoring 90% or above in the weekly quizzes for a closer look at student participation in the flipped learning format, performance in the in-class clinical problem solving in cardiovascular physiology, and performance in the factual, conceptual, and procedural knowledge questions pertaining to cardiovascular physiology on the lecture examination.

A look at student participation data in the weekly quizzes gives us an idea of student motivation to take these quizzes seriously and show up to class on time. Students were allowed to drop two of their lowest quiz grades or miss two quizzes due to lateness or unavoidable absence. Student participation data in the 10 weekly in class quizzes shows that 75% of the students attempted at least 90% of the quizzes with 65% attempting 9 out of 10 quizzes, 10% attempting all 10 quizzes, and the remaining 25% attempting 80% of the quizzes (Figure 5).

A look at the average quiz grades for each week gives us an idea of student readiness or preparedness for that day’s lecture. Student readiness is indicated by the average quiz grades for each week, which was at or above the benchmark of 80% (Table 4).

A look at the time allotted to various in-class activities shows that pre-training opened up more face-to-face class time to address deeper conceptual understanding and germane load processing in the form of clinical problem solving. In the non-flipped learning format, factual knowledge was presented in class thereby limiting the time available for
The Role of Flipped Learning

Table 4. Cardiovascular Physiology is addressed in the first four flipped learning modules.

<table>
<thead>
<tr>
<th>Lecture Quizzes</th>
<th>Flipped Learning Modules that address Factual and basic conceptual knowledge</th>
<th>Average Quiz Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electrophysiology of the Heart</td>
<td>84.25%</td>
</tr>
<tr>
<td>2</td>
<td>Electrophysiology of the Heart and Pressure Gradients</td>
<td>81.97%</td>
</tr>
<tr>
<td>3</td>
<td>Hemodynamics</td>
<td>80.38%</td>
</tr>
<tr>
<td>4</td>
<td>Hemodynamics &amp; Capillary Exchange</td>
<td>90.13%</td>
</tr>
<tr>
<td>5</td>
<td>Osmolarity, Viscosity &amp; Erythropoiesis</td>
<td>93.82%</td>
</tr>
<tr>
<td>6</td>
<td>Lymphatic Pathway and Nonspecific Defenses</td>
<td>85.27%</td>
</tr>
<tr>
<td>7</td>
<td>Antibody mediated immunity</td>
<td>91.11%</td>
</tr>
<tr>
<td>8</td>
<td>Physiological Pathway of Air &amp; Breathing Mechanics</td>
<td>85.74%</td>
</tr>
<tr>
<td>9</td>
<td>Pathway of Urine Formation</td>
<td>87.21%</td>
</tr>
<tr>
<td>10</td>
<td>Digestive Pathway and Chemical Digestion</td>
<td>88.53%</td>
</tr>
</tbody>
</table>

Cardiovascular physiology was taught in four lecture sessions and the students addressed a total of 16 novel clinical situations (Table 5). All of the clinical problems presented to the students were preceded by a worked example, that was used to demonstrate “how to think like a physiologist” via a flow chart that breaks down a clinical problem into discrete steps. More than 80% of the students were successful in arriving at the correct answer when addressing these clinical problems. However, there was a tendency to obscure explanations by including elements not directly pertinent to the problem. Even when

Figure 6. Percentage of class time spent on various learning activities.
Table 5: Formative Assessment and Feedback of Clinical Problem Solving in Cardiovacular Physiology.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Clinical Problems Outlined</th>
<th>Formative Assessment &amp; Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrophysiology</td>
<td>1. How does a Ca++ channel blocker help to lower the heart rate?</td>
<td>94% of the students were able to solve the problem with some feedback.</td>
</tr>
<tr>
<td></td>
<td>2. How do Beta Blockers help to lower heart rate?</td>
<td>80% of the students were able to solve the problem with some help.</td>
</tr>
<tr>
<td>Venous Return</td>
<td>Explain how each of the following situations affects venous return?</td>
<td>Students were able to answer all of these correctly except for #6. Only 50% were able to connect high arterial pressure with lowered venous return.</td>
</tr>
<tr>
<td></td>
<td>3. Broken rib</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Deep breathing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Sitting for long periods</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Increased Atrial Pressure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Standing Upside down</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Lying down with feet raised higher than the heart</td>
<td></td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>9. How does arteriosclerosis result in high blood pressure? How does a stent help to lower blood pressure?</td>
<td>They were all able to answer this correctly. However, only 33% were able to complete the flow chart without bringing in unnecessary elements such as viscosity.</td>
</tr>
<tr>
<td></td>
<td>10. Weight gain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11. Atrial Natriuretic Peptide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12. Profuse sweating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13. Anti-diuretic hormone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14. Diuretic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15. Tumor in the adrenal medulla increasing epinephrine production</td>
<td></td>
</tr>
<tr>
<td>Stroke Volume</td>
<td>16. Why does a person who has recently suffered a heart attack sometimes suffer pulmonary edema?</td>
<td>90% of the students arrived at the correct answers but there was a strong tendency to bring in unrelated elements into their flow charts. Only 10% of the students were able to make the connection between adrenal medulla, overproduction of epinephrine and high blood pressure.</td>
</tr>
</tbody>
</table>

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students were able to construct their own flow charts correctly they stated that they did not feel confident in their ability to do this on their own.

The full length high stakes lecture examinations were used as summative assessments, which assessed student outcomes for factual, conceptual, and procedural knowledge. The first lecture examination assessed student understanding of cardiovascular physiology and their ability to apply this knowledge to solve clinical problems. Results of this assessment showed that students achieved the pre-set benchmark of 70% for factual and procedural knowledge but fell slightly short of the benchmark for conceptual knowledge (Figure 7).

![Percentage of students answering questions correctly in the three knowledge areas.](image)

**Figure 7. Percentage of students answering questions correctly in the three knowledge areas.**

The lecture examination also included one clinical problem solving question in the form of a short answer. About 83% of the students answered the question correctly overall. Among those that answered the question correctly, 40% made one or two mistakes by including unrelated elements in their flow charts.

**Discussion**

*Practical implications of this study*

The flipped learning approach has a direct positive impact on student motivation, participation, preparedness, confidence, and performance. For the instructor, the flipped learning approach can save time that can be used for deeper conceptual understanding and application.

1. Overall, the lowered withdrawal rates, increased pass rates and increased rate of students scoring C+ and above in the flipped learning sections in comparison with
the non-flipped learning sections (see Figure 2) is an indication that the flipped learning approach can have a strong influence on student motivation to successfully complete a challenging science course.

2. Even in the lowest performing flipped learning section there was strong student participation in the weekly quizzes (see Figure 5). When asked if the weekly quizzes were helpful, student response was overwhelmingly positive. They stated that the quizzes motivated them to keep up with the lecture material and to help prepare for lecture examinations. The flipped learning approach combined with retrieval practice can boost student participation.

3. With more than 90% of the students scoring 80% or more on the weekly quizzes, class preparedness was high. This also increased student confidence and engagement during the lecture session.

4. In all three exams students in the flipped learning sections did significantly better than those in the non-flipped learning sections (see Figure 3). The flipped learning approach when combined with retrieval practice can greatly improve student performance in the long run.

5. For the instructor, flipping one third of the lecture and following the philosophy of intentional content can free up valuable class time for deeper learning (see Figure 6).

Theoretical implications of this study

The flipped learning approach when applied efficiently can harness the power of formative assessments and retrieval practice to enhance self-regulated learning. It can lower extrinsic cognitive load by the practice of intentional content; manage intrinsic cognitive load by pre-training and interactive note-taking; and raise germane cognitive load by the use of worked examples.

1. Formative assessments can confer affective, cognitive, and behavioral benefits on students by giving them a goal to which they can aspire, build self-esteem by learning from mistakes, boost confidence, and positively influence study behavior by promoting self-regulated learning (Sadler, 1998; Nicol & MacFarlane-Dick, 2006; Black & Wiliam, 1998). I have found that by reminding students to score 80% or above weekly quizzes, giving them a weekly opportunity to learn from their mistakes, feel good about their performance, and track their own progress, it is possible to reap the benefits of formative assessment. This is a kind of self-assessment that is known to enhance future performance in summative assessments such as the full length or final examinations (McDonald & Boud, 2003), which I have also seen from my results (see Figure 3).

2. Pre-training (Musallam, 2010) and retrieval practice (Roediger & Butler, 2011; Roediger & Pyc, 2012; Karpicke, 2012) can help to manage intrinsic cognitive load. By practicing intentional content rather than merely covering the content, it is possible to lower extrinsic cognitive load (Lujan & DiCarlo, 2006; DeLeeuw & Mayer, 2008). If both of these cognitive loads are properly managed, it is possible to increase germane cognitive load, a type of processing that allows the student to apply conceptual knowledge to novel situations. During the four lecture
sessions on cardiovascular physiology the students addressed a total of 16 novel clinical situations (see Table 5) and students were largely successful with more than 80% of the students solving the problems correctly, thereby demonstrating germane cognitive processing.

3. Meaningful learning takes time and this journey can be troublesome. (Lujan & DiCarlo, 2005). Viewing this learning process as a threshold experience allows us to focus on the struggle that the students face to master difficult concepts. The flipped learning model has helped immensely in drawing students from the pre-liminal state to the liminal state to engage deeply with this threshold concept in physiology. The threshold experience reveals the non-linear learning process in that we see students brimming with confidence as they do well on the quizzes and then struggle with the mastery of conceptual understanding. Yet they demonstrate the ability to apply this knowledge to real world situations. At the same time, they oscillate towards a loss of confidence in their abilities and end up including unrelated elements in their explanations. This is a classic characteristic of the threshold experience. The learner attempts bold excursive journeys into the conceptual landscape towards better understanding interspersed with recursive journeys into areas of confusion and loss of confidence (Cousin, 2006). An instructor who is aware of this struggle can provide a supportive learning environment or liminal space that addresses these excursive and recursive journeys (Land Cousin, Meyer, & Davies, 2005).

Overall, I have found that the flipped learning model provides a highly supportive and effective learning or liminal environment for the student. By taking into consideration the functioning of our working and long term memory, the flipped learning strategy appears to be highly compatible with the human cognitive architecture (Kirschner, Sweller, & Clark, 2006).

In future semesters, I will alter the design of the classroom activities to include formative assessments to test conceptual understanding and step up opportunities for self-assessment both inside and out of the classroom. I would also be interested in further exploring the relationship between the flipped learning approach and the development and maintenance of self-regulated learning.

References


Digital Storytelling: A Method for Engaging Students and Increasing Cultural Competency

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Abstract

Digital storytelling is explored as a method of engaging students in the development of media literacy and cultural competency. This paper describes the perceptions and experiences of 96 undergraduate students at a large Midwestern university, after completing a digital storytelling project in a semester-long diversity course. Digital storytelling was introduced in the course as a pedagogy for engaging students with technology to develop cultural competency. Data were collected from an end of semester survey. Results found that the use of digital storytelling enhanced the learning environment through greater student engagement around technology and diversity issues. By bridging course content and pedagogy around diversity and cultural competency, students were able to gain competency, and experience the use of technology in academic/workplace settings, and create awareness/discourse around social issues.

Keywords: Digital storytelling, student engagement, pedagogy, cultural competency, technology.

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Media and digital technology are shaping contemporary approaches to teaching and learning. Expanding technologies and media resources assist educators in the exploration of issues of cultural competency and diversity (Shorkey & Uebel, 2014). Digital storytelling holds unlimited possibilities as a teaching and learning method that engages students in critical thinking, development of cultural competency, and finding their voice within the educational environment (Burgess, 2006; Ohler, 2008; Rule, 2010; Sadik, 2008; Wang & Zhan, 2010). Technology and social media allow educators to connect to cultural and diverse stories while disseminating information globally and expanding educational reach. Mass distribution of media can influence and give voice to the oppressed and digital stories offer a new opportunity for impacting how people relate (Polk, 2010; Sanderson, 2008). The current research explores digital storytelling as a promising teaching pedagogy to engage students in a productive dialogue of diversity and presents an evaluation of the effectiveness of a digital storytelling project to increase media literacy and cultural competency among students.
Digital Storytelling

Digital stories are generally defined as short, first person video-narratives created by combining digital media including recorded voice/audio, still and moving images/video clips, and music or other sounds to tell a story (Center for Digital Storytelling, 2011; Rossiter & Garcia, 2010; Skouge & Rao, 2009). Multimedia elements are woven together to additionally engage creators in a process of critical thinking, self or other-exploration, and imaginative and artistic work (Educause, 2007; Kajder, Bull, & Albaugh, 2005; Ohler, 2008; Rule, 2010; Sadik, 2008). Another way to describe this type of storytelling would be the practice of combining a personal and often emotional narrative with images, sounds, and video into a short movie (Educause, 2007).

A digital storyteller is anyone sharing a story through media and could range from a student given an assignment, a teacher experimenting with or enhancing a lesson, a veteran creating stories for cultural training, or medical school students conducting health information sessions (Seffers, 2011; Thesen & Kara-Soteriou, 2011). A digital storyteller is someone who has a desire to document life experiences, ideas, or feelings, through the use of story and digital media (Center for Digital Storytelling, 2011; Dreon, Kerper, & Landis, 2011). Digital storytelling requires no prior experience in video production, however time spent learning about technologies related to story facilitation is useful. Workshops through university and community can further assist faculty and students with development and technical assistance in digital storytelling (Center for Digital Storytelling, 2011).

Digital storytellers regularly publish their work online via YouTube, Facebook, Scribd, My Story Maker or other online sharing mediums. A recent YouTube (2016b) search for digital storytelling yielded about 206,000 results while digital story yielded about 2.56 million results (YouTube, 2016a). A quick review of these digital stories reveal accounts of diversity, cultures and communities that are both poignant and meaningful.

Digital Storytelling Pedagogy

Digital storytelling is viewed as a pedagogical opportunity to combine traditional and creative learning methods to engage otherwise reluctant students in knowledge/skill development allowing students to create narrative and illustrate course content, showcase autobiographical learning, share a person's or communities point of view, as well as promote social justice (Jefson & Niemeier, 2015; Meadows, 2003; Ohler, 2008; Rossiter & Garcia, 2010). The application of digital storytelling is not limited to higher education, as Fletcher and Cambre (2009) indicate, digital storytelling has been applied in a variety of secondary, primary, and post-secondary educational settings. While educators are searching for innovative solutions to problems associated with student engagement, reading assigned materials, and critically thinking about topics, digital storytelling has been shown to motivate struggling writers, engage readers, and facilitate a fundamental understanding of traditional literacy (Malin, 2010; Mihailidis, 2011; Sylvester & Greenidge, 2009).
Universities have progressed with technologies that provide resources and instruction; offering solutions and infrastructure for experimenting with and implementing digital storytelling as a teaching and learning tool (Dole, Bloom, & Kowalske, 2016; Garrety, 2008; Thesen & Kara-Soteriou, 2011). Digital storytelling’s technological and content flexibility lends itself to broad range of applications across multiple learning styles, formats, domains and institutional settings.

Several scholars have evaluated digital storytelling for its learning effectiveness and outcomes establishing the method as a viable tool for teaching and learning (Garrety, 2008; Jefson & Niemeier, 2015; Robin, 2006; Rossiter & Garcia, 2010). Jenkins and Lonsdale (2007) concluded that the useful nature of digital storytelling was in its promotion of ‘learning-about’ and ‘learning-to-be’ skills that are essential for developing skilled twenty first century citizens and lifelong learners. Digital storytelling has been found to expedite a concurrence of student-centered learning strategies including technology integration, project-based learning, student engagement, reflection for deeper learning, and is an applicable mechanism for measuring these strategies (Barrett, 2006; Jenkins and Lonsdale, 2007). Hartley (2010) also found digital storytelling to enhance the classroom setting by providing a means to bring imaginative, oral facilitation, narrative and self-expression into the learning experience.

Opportunities to create digital stories have been a welcomed by students involved in classrooms that employ such strategies (Skouge & Rao, 2009). It has been described that “digital media are empowering students to become researchers, storytellers, historians, and cultural theorists in their own right” (Weis, Benmayor, O’Leary, & Eynon, 2002, p. 153). The process of creating digital stories students become active participants rather than passive consumers of information (Meadows, 2003; Ohler, 2008). Some educators feel as though it is easier for students to critically analyze digital stories than written text due to the technological and visual conditioning of contemporary society (Weis et al., 2002). Duffy (2008) states, “a typical student of today is one that absorbs information quickly, in images and video as well as text, from multiple sources simultaneously” (p. 119). Sadik’s (2008) classroom observation and interviews found that digital storytelling in class projects could help improve students’ understanding of curriculum. By students accessing and utilizing popular or emerging technical tools they are better able to analyze and synthesize information. Therefore, accomplishing a more meaningful integration of course content, personal experiences, as well as technology in the classroom to bring about deeper meaning and purpose (Dreon et al., 2011; Harris, 2005; Sadik, 2008).

**Digital Storytelling and Diversity**

While technology and social media are primary sources of diversity information gathering and sharing, the building of links between diversity and technology through digital storytelling holds many promises. Diversity awareness and cultural competency, as related to education as well as professional work, is crucial to communication, advocacy, building relationships and communities, reducing prejudice and stereotyping, transforming conflict, and developing leadership (Bucher, 2015; DuPraw & Axner, 1997; NASW,
Digital Storytelling has been described as being “rooted in the notion of democratized culture that was the hallmark of the folk music, re-claimed folk culture, and cultural activists’ tradition of the 1960s” (Lambert, 2006, p. 27). Sharing the project with classmates or out in the community with a variety of partners contributes to a development of a spirit of advocacy for participants as well as viewers of such projects (Frohlich, et al., 2008). Digital storytelling projects have the potential to challenge student understanding of diversity concepts and social justice issues and build critical educational and workforce skills.

Skouge and Rao (2009) view digital storytelling as a means by which, human beings can be profoundly influenced by presenting themselves and others, within familiar contexts, as models of inclusion and self-determination. They continue by asserting that this type of project garners positive outcomes related to learning about cultural differences or students telling stories of inequities. Conversations created through digital storytelling have additionally been found to deepen understanding and empathy of community inequities and diverse human experiences, ultimately generating feelings of empowerment and reward for students who feel they have created a meaningful product (Frohlich, et al., 2008; Gachago, Condy, Ivala, & Chigona, 2014; McKnight, Hoban, & Nielsen, 2011; Skouge & Rao, 2009). Critical and open dialogue on diversity topics can be inspiring and multiple researchers have described digital storytelling as a tool to establish an open dialogue, create compassion, and sustaining student engagement within a community of learners (Burgess, 2006; Freidus & Hlubinka, 2002; Ohler, 2008; Rule, 2010; Sadik, 2008).

Another concept to be noted regarding digital storytelling and diversity, is the concern of equal access and the diversity of student bodies (Dreon et al., 2011; Fitts & Gross, 2010). Many students today are English Language Learners (ELLs), Fitts & Gross (2010) state, “while some teachers might feel apprehensive or uncertain of how to deal with these new groups of students, we believe that this growth in diversity presents novel opportunities to learn about cultural and linguistic difference in the United States and in the world” (p. 8). Thus, cultural competency and having a diverse perspective is a critical component when developing digital stories with students.

Diversity and cultural competency can be represented through digital storytelling in several ways. Illustrations of projects are widespread with projects such as: Stories of Migration in Southern Africa; Equality in Ohio: Stories of Lesbian Relationships and Families; and Envisioning New Meanings of Disability and Difference (Center for Digital Storytelling, 2011). While other examples of digital storytelling projects include students learning about their own cultural identities as well as their teachers, families, and friends (Garrety, 2008; Fitts & Gross, 2010). Lee and Priester (2015) describe the use of video as a means to engage communities in vicarious experiences and dialogue about diversity. Other groups have used digital stories to offer another lens in which to view the world in order to give voice, combat discrimination and oppression, as well as to improve literary skills for those with learning disabilities (Manning, 2009; McKnight et al., 2011; Rolon-Dow, 2011). Digital storytelling has been shown to bring together groups of people with similar stories but without geographical closeness (Polk, 2010). Ultimately,
digital storytelling allows individuals to express the uniqueness of their own and others’ lived experiences and brings voice the individual, group or community perspective.

**Digital Storytelling, Ethical Responsibility and Technology**

Digital storytelling and technology present instructors and their students with a host of ethical issues to be mindful of. Martinez (2011) states that “digital media literacy continues its rise in importance as a key skill in every discipline” (p. 13), it is virtually impossible to regulate open public forums. Users of the social media platforms such as YouTube, Twitter, Facebook, and Vine, among many others, are left to learn, understand, and apply the ethics and boundaries to their shared technology projects on their own. Individuals and groups who use media outlets should exemplify some form of competence in relation to digital narrative communication (Lundy, 2008; Mihailidis, 2011). Martinez (2011) reiterates digital and social media sites present the user with ethical choices regarding how they use, share, download, and disseminate media. Oversharing personal information increases risk for misuse of personal information, loss of anonymity and misrepresentation or heightened exposure of others who may not have consented. Copyright infringement is an additional risk associated with ethical decision making and digital storytelling (Lundy, 2008; Martinez, 2011).

While digital storytelling and use of social media has great potential for critical thinking, engaging in pedagogy that reflects current trends, and producing transferable skills for future employment the risks associated with lack of education or careless use of technology cannot be ignored (Jenkins & Lonsdale, 2007; Ohler, 2008; Warburton, 2013). ‘Virtual boundaries’ are a reality of personal and professional lives of today therefore it is important for educators and students to have an awareness of practices to prevent ethical and legal violations regarding technology within public and private institutions (Kimball & Kim, 2013). Martinez (2011) highlights digital literacy is one of the most important skills to develop within every discipline. As new social media and technology platforms emerge the ethical considerations continue to widen. In turn, educational institutions and work environments are implementing social media policies at a rapid pace.

The literature review on digital storytelling as pedagogy, infused with diversity concepts and followed by ethical responsibilities, leads to three research questions to guide the current study with intent to measure perceptions of students’ technological and cultural competency following the digital storytelling project.

1. Does digital storytelling assist students in the enhancement and knowledge of diversity?
2. Does digital storytelling assist the student in becoming more sensitive to cultural issues?
3. Did the digital storytelling projects engage students in technological and research skill development?
Methods

Subjects

A purposive sample of 96 undergraduate students enrolled in a diversity course were included in the study. The sample had a mean age of $M = 27.7$ years old. Gender breakdowns were representative of typical enrollments in undergraduate social work programs, with 87.5% ($n = 84$) female and 12.5% ($n = 12$) males (CSWE, 2013). Caucasians represented 77.2% ($n = 71$) of the total sample. African Americans in this study represented 10.9% ($n = 10$), overall the school has 13% African American representation. The numbers of Hispanics sampled were 8.9% ($n = 8$) while Asians represented 1.1% ($n = 1$), and 9.8% ($n = 9$) did not report their race. The breakdown of race in the sample closely resembled the overall undergraduate student characteristics at this university (Wichita State University Office of Planning and Analysis, 2016). Finally, it should be noted that of the 96 participants 68.4% ($n = 65$) reported no previous diversity or social justice training.

Description of digital storytelling assignment. Digital storytelling, as a semester-long assignment framed by course content and textbook, was assigned to students working in groups to tell a story of diversity. The textbook structured chapters on a broad range of diversity topics such as age, class, color, culture, disability, ethnicity, gender, gender identity and expression, immigration status, political ideology, race, religion, sex, and sexual orientation.

As a part of the project, students were given instructions on the length of the video, media element requirements, and platforms in which to develop their digital stories, as well as numerous online resources and examples of digital stories. Students were also provided with cameras if they did not have them. Several class periods throughout the semester were devoted to group time with dialogue and troubleshooting issues they encountered. Class time during the start of the semester was used to teach elements of digital storytelling and provide free resources that included hardware, software, and community contacts. One class session was also spent with a media resource department specialist to discuss story planning and technology.

Digital storytelling project outline. The steps of the digital storytelling process were outlined for students in the syllabus and was a lecture topic in the first week of class. Outline elements included: developing a topic through group consensus, collecting resources, storyboarding video, creating a media script, and taking advantage of the variety of free media available such as music, video, pictures, drawings, text, and spoken word. Ethical use of resources was covered through lecture and written resources and links were included in the course portal. The media resource specialist also shared copyright law and fair use media information during their guest speaking spot (Kimball & Kim, 2013; Lundy, 2008; Martinez, 2011). Criteria for individual and group evaluation included the integration of content from diversity course topics, the use of literature, contribution/participation with group members, creativity, and originality in the use of self. Evaluation criteria was provided to students through rubric format in the course portal and discussed during the first week of class.
**Data Collection Instrument**

The survey contained standard demographic questions (sex, age, marital status, race, previous diversity training and class standing) along with twelve original items designed to measure student’s experiences in developing digital stories and cultural competency. Instrument items focused on the impact of the digital storytelling project and included questions regarding understanding of diversity, development of research skills, increase of critical thinking, being emotionally moved by the project(s), learning media and technical skills, creativity development, and being pushed to explore difficult topics. Participants were asked to respond to the items using a four point Likert scale (1=Definitely False, 2= Mostly False, 3= Mostly True, 4= Definitely True). Cumulative scores on the twelve items ranged from 12-48, with higher scores indicating perceived higher levels of cultural competency and value of the digital storytelling project. Two items on the questionnaire were designed to test the reliability of participant answers, with the Likert scale reversing the pattern of participant responses. The final question on the survey asked students to provide a narrative of the benefits and challenges of the digital storytelling project.

**Procedures**

This study utilized a sample of convenience with students enrolled in a baccalaureate level social work diversity course located in an urban community in the Midwest. The choice of this student population was based on the interest in gaining a more complete understanding of the impact of digital storytelling. Ninety-six students completed the digital story project, provided informed consent, and participated in the current study.

**Data Collection and Analysis**

Analysis of the data began at the completion of the digital storytelling project with the survey administered the last day of class. The 12-item survey with the qualitative narrative question attached was input into SPSS for descriptive analysis. Research questions framed the univariate and bivariate statistical procedures. Qualitative data collected through the open-ended item were coded by instrument topic themes: knowledge and enhancement of diversity, technical research skill-building, affective reactions and working as a group. Narratives were used to support the quantitative findings.

**Findings**

Choice of methodology was based on interest in gaining an understanding of the impact of digital storytelling and capturing any transformative aspect of this educational experience utilizing digital storytelling as a central pedagogy (Creswell, 2014). The 12-item questionnaire garnered responses that revealed overall positive feedback to the digital storytelling project and univariate and bivariate statistical procedures.
Univariate Analysis

Enhancement and Knowledge of Diversity. The development of cultural competency was an important focus of infusing digital storytelling into the pedagogical practices of the course. Some students were impacted by the specific topics of diversity that were viewed through digital storytelling. Over 90% (n = 87) of the participants reported that they felt more knowledgeable about different cultures based on the digital storytelling project. This is supported by participant’s comments such as, “During the project, I learned more about Islam and what it was like for someone to immigrate to the United States.” While another student wrote, “Homelessness is out there and people look but not everybody sees. This project has helped me to actually see these people and the difficult situations they are in. It was also a challenge to learn about homelessness and stigma.” And 92.7% (n = 89) of respondents felt digital storytelling provided them with a broader understanding of diversity. One item provided a reliability check of these two questions regarding knowledge development. 86.5% (n = 83) of the respondents disagreed with the negatively worded item that “the digital storytelling project did not provide further understanding of diversity.” This is further reinforced by a respondents’ comments that reflected “I learned a lot about these issues of social diversity, and I also realized how much more I need to learn in order to practice Social Work. It was an eye opening experience and I honestly didn’t know some of these problems were so bad.” Thus, the majority of respondents indicated that digital stories were beneficial and engaging as indicated by 83% or greater percentage of the respondents supporting statements that gains in knowledge and understanding of diversity/cultural competency following the course. See Table 1 for complete descriptive results of the 12-item measure of digital storytelling and perceptions of cultural competency.

Affective Reactions to Digital Storytelling. Many respondents reported the digital storytelling project changed their views of diversity, helped make use of critical thinking skills, and brought about emotional reactions to the process and viewing of the digital stories. Eighty participants (84.2%) felt the project was important in changing views on diversity in the community with which they reside. One student wrote, “This (project) inspired me to help and use my voice and make a difference in the community. This also taught me that people really are willing to help, we simply just need to shed some light on these issues so that others can become aware of the problems we have in our own back yard.” While, 91.6% (n=81) of participants reported the project required them to think critically about their topic of diversity and use critical thinking skills in project development. All participants (n=96) indicated in the survey that viewing the projects of their classmates sparked emotions or a call to action. For example two students captured the overall sentiments of the class by writing “I enjoyed watched them, some made me cry…” or “…the majority of the videos pulled at my emotions and forced me to take a look inside at my own feelings…” While another student indicated a call to action after viewing the projects by writing “…the digital storytelling project… made me want to get more involved and it showed me when the community comes together it creates a support system and hope for change. I want to be one of those people that get involved and make a difference.” And finally one students response summed up the intention of engaging in the digital storytelling projects with “The project pushed me to
Table 1. Responses to Items on Digital Storytelling (N = 96).

<table>
<thead>
<tr>
<th>Items</th>
<th>Definitely False</th>
<th>Mostly False</th>
<th>Mostly True</th>
<th>Definitely True</th>
</tr>
</thead>
<tbody>
<tr>
<td>The digital storytelling project enhanced my understanding of diversity</td>
<td>1% (n=1)</td>
<td>8.3% (n=8)</td>
<td>43.8% (n=42)</td>
<td>46.9% (n=45)</td>
</tr>
<tr>
<td>I feel more knowledgeable about different cultures based on the digital storytelling project</td>
<td>1% (n=1)</td>
<td>8.3% (n=8)</td>
<td>47.9% (n=46)</td>
<td>42.7% (n=41)</td>
</tr>
<tr>
<td>The digital storytelling project did not provide further understanding of diversity</td>
<td>62.5% (n=60)</td>
<td>24% (n=23)</td>
<td>7.3% (n=7)</td>
<td>6.3% (n=6)</td>
</tr>
<tr>
<td>Digital storytelling provided me with a broader understanding of diversity.</td>
<td>1% (n=1)</td>
<td>6.3% (n=6)</td>
<td>41.7% (n=42)</td>
<td>51% (n=49)</td>
</tr>
<tr>
<td>The digital storytelling project helped me build research skills.</td>
<td>3.1% (n=3)</td>
<td>4.2% (n=4)</td>
<td>32.3% (n=31)</td>
<td>60.4% (n=58)</td>
</tr>
<tr>
<td>The digital storytelling project was important in changing my views of diversity in our community</td>
<td>2.1% (n=2)</td>
<td>13.7% (n=13)</td>
<td>35.8% (n=34)</td>
<td>48.4% (n=46)</td>
</tr>
<tr>
<td>The digital storytelling project required me to think critically about my topic on diversity</td>
<td>1% (n=1)</td>
<td>7.3% (n=7)</td>
<td>33.3% (n=32)</td>
<td>58.3% (n=45)</td>
</tr>
<tr>
<td>Viewing other’s digital storytelling projects I was moved by their project.</td>
<td>0% (n=0)</td>
<td>0% (n=0)</td>
<td>26% (n=25)</td>
<td>74% (n=71)</td>
</tr>
<tr>
<td>I learned new technical computer skills that I had not known previously.</td>
<td>2.1% (n=2)</td>
<td>12.5% (n=12)</td>
<td>28.1% (n=27)</td>
<td>56.3% (n=54)</td>
</tr>
<tr>
<td>I feel that the digital storytelling project helped me to be more creative in my presentation of diversity</td>
<td>0% (n=0)</td>
<td>3.2% (n=3)</td>
<td>30.5% (n=29)</td>
<td>65.6% (n=63)</td>
</tr>
<tr>
<td>The digital storytelling project pushed me to explore topics that were difficult</td>
<td>1% (n=1)</td>
<td>16.7% (n=16)</td>
<td>28.1% (n=27)</td>
<td>54.2% (n=52)</td>
</tr>
<tr>
<td>The digital storytelling project pushed me to evaluate skills with group members.</td>
<td>1% (n=1)</td>
<td>0% (n=0)</td>
<td>25% (n=24)</td>
<td>74% (n=75)</td>
</tr>
</tbody>
</table>
talk about uncomfortable topics to people I did not know. I feel this is important in making me more comfortable talking about social issues.”

**Working as a Group.** The final survey question challenged respondents to evaluate social skills, dynamics and cooperation of group members and this topic area garnered the most narrative responses in the study. All but one participant felt group evaluation skills were developed through this project. Several narrative statements described their discovery and reconciliation of group work and supported this finding. For example these student’s responses summed up the general attitudes expressed by students; “Overall, I have learned a very important lesson when it comes to working in groups. I will strive to work even harder in future group projects. This project has given me the opportunity to grow and learn more as a student’ and “One of the biggest challenges was also the biggest benefit: working with group dynamics and trying to diffuse interpersonal conflict gave me a better understanding of myself and how to influence group dynamics.”

**Competency Development in Culture, Technology, and Research**

Spearman’s rho revealed several statistically significant relationships between students perceived learning of technical skills and feeling more knowledgeable about different cultures based on the digital storytelling project ($r_s[95] = .27, p < .008$), providing students with better understanding of diversity ($r_s[95] = .24, p < .02$), thinking more critically about their diversity topic ($r_s[95] = .38, p < .000$), and research skill developed by the digital storytelling projects ($r_s[95] = .41, p < .000$). Student narratives supported these findings, “I think the most unique thing about this project was picking the subject, and doing the research because it allowed me to see a lot of different opinions and values of my group.” And “In our current society, media is so important and integrated into our society. YouTube and social media are great places to advocate for causes. I think the digital storytelling project is amazing and a great option. I’m so thankful for it and all I learned.” Finally, one student’s response summed both working with the group and learning new technologies by writing; “The required learning of how to use these different multimedia formats greatly influenced our group participation and team work skills. They were stimulated as a result.”

**Bivariate Analysis**

**Previous Diversity Training.** Results did not reveal significant differences between students who reported previous diversity training and those who did not as a factor in students' perceived changes in understanding of diversity and cultural competency. Participants who reported no previous diversity oppression or social justice training ($n = 65, 68\%$) were no more likely than those reporting previous diversity, oppression or social justice training ($n = 30, 31.6\%$) to believe that the digital storytelling enhanced their understanding of diversity, $c^2 (3, N = 95) = .596, p = .90$. Additionally, participants who reported no previous diversity, oppression or social justice training (92.3\%, $n = 60$). Both groups equally felt they gained new knowledge. The benefits were highlighted by one student as “digital storytelling allowed me to put faces to subjects. The benefits were open-mindedness to see others in the human perspective rather than just race, culture, or
ethnicity.” While another student stated the "benefits of this digital storytelling project were being able to see life through someone else’s eyes. Everyone has a story to tell and you should always take time to listen to them.”

Traditional and Nontraditional. Students who identified as traditional (18-25 year old) and nontraditional students (26 or older) differed significantly p. ≥ .05 on one item (digital storytelling project had an impact on student’s perceived competencies in technology, diversity, and communication). A significant difference in the percentage of traditional and nontraditional students was found on the item “that the digital storytelling project did not a further understanding of diversity” c2 (3, N = 93) = 8.52, p = .04. Nontraditional students were more dispersed in their answers across the Likert scaling while the majority of traditional students found this statement to be definitely false (70.7%, n = 41 or mostly false (15.5%, n = 9). However, it is interesting to note that no differences were found between, the traditional and nontraditional students on the item “the digital storytelling project enhanced their understanding of diversity” c2 (3, N = 93) = 8.52, p = .46. The majority of nontraditional students found this statement to be mostly true or definitely true (n = 34, 97%). Patterns of response between traditional and nontraditional students provided only speculative insights into differences in how the digital storytelling project enhanced understanding of diversity and cultural competency when age of the students was introduced as a variable.

Implications

Findings revealed several implications and areas for future exploration of the relationship of digital storytelling as related to pedagogy, technology and the development of cultural competency. Implications outlined from this research are concrete and speak to the potential for implementing digital storytelling in university classrooms as well as in community and workplace settings.

Technology. College students are often thought to possess vast understanding of multiple technologies and any assumptions by students themselves, as well as faculty, can be misleading. Students anecdotally present in the classroom great variances with technology skills, especially lacking in knowledge and transfer of educationally useful technologies. As an implication of this research, educators are encouraged to evaluate where the class level curve exists with student understanding as to ensure a smoother timeline with project completion. As students may understand a very limited number of technology applications such as texting, Instagram, Facebook, Snapchat and music downloading and are unfamiliar with other technology resources applicable in education.

Faculty Development. Digital storytelling as pedagogy is intended to produce connections. Not only between the student and their topic, but also between students and faculty. Interestingly enough, Stoltzfus, Scrugg, and Tressler (2015) found that faculty convey similar perceptions to students of their own technology grasp and know-how. While faculty use of educational technology has grown exponentially, the gap that remains is between faculty use of technology and student expectations of technology use. Meaning,
faculty are not using the technologies that students want and need to feel they are moving forward. Merisotis (2016) identifies this as an alignment issue within higher education.

Digital storytelling offers opportunity to create an alignment between faculty, students, content and concepts that enables transformative learning experiences for both faculty and students (Jacobsen, 2001). In order to feel more competent, faculty would best benefit from professional development in this area especially if they experience a gap between themselves and their students. By integrating a digital storytelling project, faculty have an opportunity to increase their own technology skills and increase their confidence, and better connect with students.

Institutional barriers. Concurrently, gaps also exist between perceptions of barriers related to technology integration and resource allocations within university systems to prepare/promote technology as pedagogy for faculty development. Some have suggested that universities are not preparing faculty in ways that close the gap between the tech skills of faculty, needs of students and expectations of employers (Hunter, 2016; Sadik, 2008). Dahlstrom (2015) produced a research report that demonstrated the need for higher education institutions to prioritize investments in teaching and learning with community based contexts supported by various technologies. Faculty reported strong interests in ‘creation of opportunities to experiment with technologies in the learning environment’ and digital storytelling can serve as an experiment of sorts. To create the opportunities within our own classrooms rather than waiting for the institution to create it for us. Although these points are not a direct implication of findings, as faculty work through issues of remaining relevant within university systems with dwindling funding, it is important that discussion of this issue occurs. Often, a variety of incentives exist for faculty to innovate their curriculum and introduce new technologies to students. Digital storytelling can certainly serve as a starting point for educators interested in developing their skills with little outside support required.

Investment in social issues and motivation. Digital storytelling can provide shared experiences and connect us to cultural and social movement. Marshall, Taylor, and Yu (2004) indicate that “this type of connection encourages the community and connecting diverse people through shared experiences” (p. 39). These projects offer then, an opportunity to experience a progression of motivation and investment with a community or an issue deepen over time. One recent anecdotal example, digital storytelling project ideas were developed in consultation with a group of community members. By creating a roundtable event, faculty brought students together with community to talk about existing issues and collaborate on ideas for digital stories. Students became motivated to better understand the issues and also more invested in the issues and people of their surrounding community. Digital storytelling projects can be designed in multiple creative ways and educators should feel open to engaging people within the community and working toward awareness and justice in a manner that is mutually beneficial.

Communication skill development. Helping students to develop communication skills is a rather difficult challenge for many educators, especially those whose disciplines are content and skills specific, and not primarily focused on communication skill building.
Additionally, these skills are multifaceted and individual. Students arrive to college with varying abilities to speak in front of others or in a group, write with purpose, or effectively get their point across to an audience. While the digital storytelling project accounts for individual skill development, perhaps the most important communication skills are built by working within the group environment. Group work, in digital storytelling, creates challenges for understanding the perspectives of other individuals and groups, listening to stories that are told by communities, working through emotions that arise from hearing lived experiences, and working to also build consensus, share decision-making, and overcome the conflicts that arise throughout the duration of such a project. The process is more meaningful and useful than the final product.

Group projects are a standard within many professional programs and in an age of valued autonomy, working within a group or team is expected although difficult for some. In education and the workforce, teamwork is one of the core values of building a successful system. The majority of students in this study felt the activity as a group project pushed them to evaluate the communication skills of group members as well as themselves. In today’s social world, individuals avoid interactions such as these as they often associate it as conflict. Negotiation and teamwork are characterized by overcoming multiple conflicts, but it is the development of skills to work through issues that will allow our students to better engage the world around them. Rather than seeking to avoid conflict at all costs.

**Organizational training opportunities.** In community settings, digital storytelling offers opportunities for cultural awareness development and encourages the capturing of community archival and oral history. Local narratives can be gathered through digital storytelling to maintain and re-remember histories while also creating connection in and out of our direct communities. Digital storytelling, then, becomes an application that transcends age gaps and encourages broader audiences to view and collaborate (Klaebe, Forth, Burgess, & Bilandzic, 2007). Digital storytelling allows local organizations to increase opportunities for community members to share their stories in local, national, and global contexts. Also, an outlet for sharing elements of an organization, or advertising services or needs, is accomplished through digital storytelling. It can be useful for students to work with organizations, for instance non-profits, to create stories that assist the organization in some way. Perhaps by creating a story to advertise their clientele, or describe services, students can work with community organizations to enhance their outreach or service delivery. These types of efforts can also in turn enhance the relationship between the university and the community.

**Considerations for Future Research**

Activity such as digital storytelling, offers a wide range of opportunities for additional research as it is a developing and multifaceted field. It offers consideration for other similar projects and technologies useful for educational settings. Research to identify measurements of faculty and student technology competencies would be useful within many institutions to recognize the gaps occurring with a particular setting. By identifying the
level of need as related to technology in higher education classrooms, professional development training plans could be in this area could be prioritized.

This work is a useful tool for meeting the ‘high impact practice’ objectives many higher education settings are striving for (AACU, 2016). While high impact practices are identified by opportunities to enhance college education, digital storytelling offers opportunities for common intellectual experiences to occur, facilitated diversity learning, brings about a community based perspective, and is rooted in the collaboration of students with one another as well as their faculty and wider community.

Research to identify effectiveness across multiple disciplines and multiple subject areas would further solidify this pedagogical method. In addition to diversity, this author has considered how such information can be utilized in facilitating students’ understanding of healthy relationships, support in therapy, workforce patterning, and the impact of community conditions on the most vulnerable, etc. With efforts progressing in areas such as business, engineering, and healthcare, digital storytelling has the potential to give insight into many areas that are not seen or understood by the greater population.

In conclusion, the research opportunities in the digital storytelling arena are still in the infancy stage. New research studies will provide greater perception and understanding in “how digital storytelling can engage, inform and enlighten new generations of students and educators to come” (Robin, 2006, np).

Conclusion

Results of this study provided a glimpse of the impact of using a creative and engaging project to develop student competencies. Student experiences, perceptions of cultural competency, as well as development of research and technology skills were all heightened through digital storytelling. Davis (2004) spoke to the unique value of digital storytelling and is “the completed digital story also becomes “fixed” in a way that is not true of oral stories...once it is complete, it stands as a work of art, a representation apart from the teller, an “object” for reflection and critique” (p.3-4). The participants in this study consistently identified their projects as a product that provided personal and educational benefit. One student concluded “This was by far my favorite project in my college experience. I was able to share this video with friends, colleagues and family with pride.”

This paper explored the students’ technological and cultural competency development through the use of digital storytelling techniques. Benefits included the use of creative thinking and ultimately producing a short film of their chosen diversity topic without having identified as an artist or filmmaker. Students were able to view and listen to stories and engage in self-correction of their own misperceptions and prejudgments. Students were able to use additional tools to create/enhance meaning. Another benefit of the digital storytelling for students was having an opportunity to engage an audience with their work. They learned to address different learning styles and be mindful of the learning process. Finally, students were able to overcome fears of technology and take pleasure and pride in their development and their creative product. In conclusion, the use of
digital stories creates a student-centered learning environment that engages students, advances their perceptions and assists them in development and cultural competency. These benefits and experiences become a crucial element for their foundations of professional work, ethical adherence and practice within their communities.

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Integrating the Intangibles into Asynchronous Online Instruction: Strategies for Improving Interaction and Social Presence

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Abstract

This paper considers how instructors of asynchronous online courses in the Humanities might integrate intangibles associated with face-to-face instruction into their online environments. It presents a case study of asynchronous online instruction in a philosophy and religion department at a midsize public university in the southeastern United States. Based on interviews with instructors and observations of course shells, it presents five strategies for improving interaction and social presence in asynchronous online environments: establishing an online community that is comfortable—yet structured, humanizing the course whenever possible, making feedback a priority, establishing clear expectations, then monitoring discussions, and making the course relevant to learners.

Keywords: Online instruction, asynchronous, interaction, social presence.

Interaction and social presence significantly influence the quality of online instruction. Three forms of interaction have become recognized as instrumental for online teaching and learning: learner-content, learner-instructor, and learner-learner (Moore, 1989). Learner-content interaction refers to the learner’s engagement with content to construct meaning, relate it to personal knowledge, and apply it to problem solving; learner-instructor interaction seeks to stimulate the learner’s interest or motivate the student; learner-learner interaction refers to interaction among learners or learners in groups. Interaction has been identified as important to learner satisfaction and motivation in online courses (Cole, Shelley, & Swartz, 2014; Northrup, 2002; Berge, 1999), as well as cognitive engagement (Tamim, Bernard, Borokhovski, & Abrahmi, 2011). Three types of presence have been identified as important in online teaching and learning, as detailed in the “Community of Inquiry” model: cognitive, social, and teaching (Garrison, Anderson, & Archer, 2000). Cognitive presence refers to the construction of meaning through sustained communication and is a crucial element of critical thinking and knowledge construction; social presence was initially defined as the ability of learners to project themselves socially and emotionally as “real people” – i.e. with their full personality – but has been more recently described as “creating a climate that supports and encourages probing questions, skepticism, expressing and contributing to ideas” (Garrison & Akyol, 2013); teaching presence refers to the design of the educational experience (course content, learning activities, assessment) and facilitation of that experience. The establishment of
social presence allows cognitive presence to be sustained, and teaching presence enables integration of cognitive and social presence (Garrison, Anderson, & Archer, 2000). In online environments, text-based communication contains cues indicating such social presence, including personal histories (cultural background, education, etc.), personalities (attitude, humor, etc.), and current circumstances (location, profession, etc.). Several conditions are required in order to facilitate social presence, including the ability to send and read such social presence cues, opportunity for interactions, and motivation to engage in relational exchanges (Kehrwald, 2008). This study examined how instructors might integrate interaction and social presence into their asynchronous online environments.

**Methodology**

The study adopted a case study approach – a qualitative mode of inquiry suitable when “a ‘how’ or ‘why’ question is being asked about a contemporary set of events, over which the investigator has little or no control” (Yin, 2003). While the results of this study are limited in the degree to which they are generalizable, the case study method allows one to capture the complexity of the case, including its multiple realities and different viewpoints (Stake, 1995). The case is a philosophy and religion department at a midsize public university in the southeastern United States, in which a significant number of faculty members teach asynchronous online courses – over half of all full-time faculty (9 of 17) and a third of all part-time faculty (3 of 8).

**Participants**

The entire population of online instructors in the department was interviewed, including eight men and three women, eight full-time faculty members and three part-time faculty members. They have taught on average 15 sections – with the mean being 12 sections – of asynchronous online courses from 2008. Of the total 187 sections of online courses taught from 2008-2015, 183 were lower-level courses and 90 were upper-level courses. The average number of sections for each course was 13; the median number of sections was 12.

**Data Collection & Analysis**

The study employed various data collection methods to allow for methodological triangulation, including 1) archival records about online instruction within the department, 2) interviews with all faculty members who taught online courses in the department (eleven total), which were then transcribed, coded, and analyzed, and 3) observation of course shells as well as course documents including syllabi, learning activities, and assessments. Interviews focused on the perspectives and experiences of the instructors. Each participant was interviewed once: eight interviews were conducted face-to-face and three interviews were via email. The length of the face-to-face interviews ranged from 14-65 minutes; most were a half hour long. Interviews sought to uncover the various levels of meanings embedded in the situation – online instruction – that might enable a better understanding through “a structural analysis of what is most common, most familiar, most self-evident” (Van Manen, 1990) to those who engage in online instruction. They were...
all semi-structured interviews: although there was a set of questions that guided the interview process in a consistent manner, allowance was made for probing, rephrasing of questions, or asking the questions in a different sequence than the interview guide. Interview questions addressed perceived challenges, strengths, and strategies of online instruction.

Interviews were then transcribed and coded for emergent common themes using the constant comparative method – an iterative process of examining data and theory concurrently – that consists of four stages: 1) comparing incidents applicable to each category, 2) integrating categories and their properties, 3) delimiting the theory, and 4) writing the theory (Glaser & Strauss, 1967). Some (such as “social, cognitive, and instructor presence”) of the categories derived from literature in the field of Instructional Technology, others (such as “intangibles”) were “in vivo” categories that came from the interviewee’s vocabulary (Glaser & Strauss, 1967). After discovering uniformities in the original set of categories, delimitation involved formulating a theory with a smaller set of higher-level categories until the point that they became “theoretically saturated” (Glaser & Strauss, 1967).

Observation of course shells on the university’s Learning Management System (LMS) allowed greater understanding of online instruction from the perspective of the learner. It enabled one to experience the interface encountered by students, gave access to course documents, assignments, modules, discussion forum topics, and assessments, and it included threads and posts of former students, which gave a sense of the breadth and level of discussion in the course. Course documents were analyzed to understand how instructors communicated their expectations, approached their learning goals, and implemented their vision of best practices. They were taken from a variety of courses, and alongside the course shells they gave insight into the way in which the learner’s online experience was structured and how course expectations were communicated.

Results

Social presence was largely superficial, with discussion boards in which learners projected themselves and their personalities, but rarely raised probing questions or critical comments in response to their peers’ discussion board posts. This may stem from the fact that only two instructors posted a rubric or expectation for what constituted a good discussion board post, specifying that “I agree with you,” “I don’t agree with you,” “Yes,” “No,” or “Ditto” were all unacceptable posts to their peers. Because social presence was lacking, interaction with the instructor became a more influential factor in determining the quality of online instruction. In fact, one could argue that the three most frequently cited challenges of online instruction were exacerbated by the absence of social presence (Table 1 below).

Intangibles: The Challenge of Replicating Classroom Dynamics

“Intangibles” was an “in vivo” category that surfaced in several interviews in reference to classroom dynamics, which many participants found difficult – if not impossible – to
Table 1 Challenges of Online Teaching.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicating the classroom dynamic</td>
<td>10</td>
</tr>
<tr>
<td>Facilitating interactions</td>
<td>7</td>
</tr>
<tr>
<td>Time management</td>
<td>4</td>
</tr>
<tr>
<td>Technology</td>
<td>3</td>
</tr>
<tr>
<td>Assessment</td>
<td>3</td>
</tr>
<tr>
<td>Language and wording</td>
<td>3</td>
</tr>
<tr>
<td>Rigid structure</td>
<td>2</td>
</tr>
</tbody>
</table>

replicate in an online environment. All but one respondent said that face-to-face classes were better than online courses because of such “intangibles.” The one exception clarified that while online classes were better for some non-traditional students, face-to-face classes were better during the academic year because, in his words, “we’re going to fumble our way to a better understanding of what’s going on here.” He said, “There’s just something about that. I mean I use the term ‘intangible.’ Something intangible, but intangibly valuable for those students, that I know when some of the students leave the room, they got something. Even if it was only an exercise, it was a good exercise in thinking, in critically evaluating…” He suggests that something intangible arises when students are in a classroom, around a table, thinking through topics together with an instructor. Similarly, another instructor wrote, “I think many students need to see critical thinking modeled in person, not just be told to think critically. It is useful for them to see “experts” think through issues and be puzzled along with them in the classroom, a valuable interaction that can get lost in online classes.” All but one respondent mentioned similar sort of “intangibles” from classroom dynamics that they claimed could not be replicated in an asynchronous online environment, including spontaneous questions, tangential discussions, “ah ha” moments of realization, delving into issues, or teasing out subtleties in the moment. One instructor explained, “It's difficult to mimic the student-teacher interaction in the physical classroom. There are ways to create group discussion and participation online, but nothing I’ve found comes close to the spontaneous questions, discussion, and other intellectual ‘tangents’ that can emerge in the classroom.”

Another aspect of classroom dynamics identified as an important by four respondents was the ability to read cues from students’ verbal inflection and body language, which they saw as critical when discussing complex issues. As one instructor related:

I deal with very difficult issues. And when you’re having discussions I can see immediately on the faces of students what their reactions are, how I’m going to have to react, how they’re interpreting what another student says, to see if I need to intervene, to redirect it or reinterpret or say, ‘calm down.’ It’s much harder on discussion boards: you don’t know how people react, they’re not using emoticons or little smilies to say, ‘I’m kidding,’ or ‘This is serious.’ Some people interpret a statement as being yelling, even if it isn’t in all caps. And they don’t know the students as well. And that’s a problem.
Another instructor concurred about the value of nonverbal communication in face-to-face courses. He said, “You can tell with the look on student’s faces if they got it… I like saying stuff with a straight face and waiting for students to get it. I can’t do it [online].” While both instructors described using humor frequently in their face-to-face courses, they described their reticence to bring such humor into the online environment for fear of being misunderstood by their students. One remarked, “Our university lawyer is fond of saying, “Nothing is as funny on the witness stand as it is in an email.” So you always have to think of, “What would this sound like, outside of, you know, with no context, someone is just reading what you said. That’s how somebody is going to hear it, the worst possible way. I find that tricky, with the topics that we deal with.” Another instructor echoed this concern saying, “Online everything is LOUD. Everything you write, even if you write a student a gentle email, it could crush them. So, I don’t know, the impact is different. I think that’s hard.” She also shared her concern that she could not pick up on cues as readily as in her face-to-face classroom, saying, “The kind of stuff that you can pick up on when you can smell the person is something. You miss cues. You know, you miss cues anyway, and I’m not the best judge of people so I miss all kinds of cues, but I’m even missing more cues. I don’t know what to make of it.”

Since nonverbal communication is important for gauging student comprehension, reactions, and emotions, it impinges upon the types of topics that you can address in an online environment. One instructor remarked about his face-to-face class:

It’s uncomfortable. There are people in the class that have sat like this [taking a guarded position, with his legs crossed]. But I think it’s valuable for them. And I’m challenging the others, the more smug individuals who are skeptical about any kind of reconciliation between the two. So, that bit of uncomfortableness I think is really crucial to good education. The climate has to be comfortable enough so you can talk, but not so comfortable that you can just relax, knowing I’m clearly right. Instead that you’re open to being challenged, and being challenged in front of other people, where heads are going to swivel, and they’re going to say, Okay what are you going to say now? It’s hard to see how that’s replicated online.

For this reason, the instructor said he would never dream of doing his upper-level classes online. In his words it would “verge on heresy” to do so. Most instructors expressed a similar opinion that they would never do an upper-level course online because it was difficult or impossible to replicate the dynamics of a seminar.

In this way, “intangibles” cut across the three types of presence identified as important to an educational experience in a community of inquiry: cognitive presence, social presence, and teaching presence (Garrison, Anderson, & Archer, 2000). Instructors associated “intangibles” with all three types of presence: the spontaneous questions and “ah ha” moments that indicate cognitive presence, the degree of discomfort and comfort that facilitates a “social presence” conductive for critical inquiry and discussion, and the relationships built between students and instructors via humor, nonverbal cues, back-and-forth exchanges, and organic classroom dynamics. Research has shown that “instructional im-
mediacy” – behaviors that enhance closeness including verbal interactions (humor, use of students’ names, encouragement and follow-up in discussions) and nonverbal interactions (smiling, eye contact, body movements) – encourage students to value the learning task, which in turn enhances cognitive learning (Rodriquez, Plax & Kearney, 1996). Since asynchronous online environments can only resort to verbal immediacy to elicit such learning, scholars note the importance of instructors using verbal interactions in online environments. However, as we saw above, some instructors were reluctant to engage in humor for fear of being misunderstood.

Interaction: Discussion Forums and Their Discontents

Instructors primarily discussed the difficulty of facilitating quality interactions among students in asynchronous online discussion forums, but they also mentioned challenges of interacting with their students individually, which accords with previous studies of faculty perception of online instruction (Chiasson et al., 2015). In regards to the former, some instructors described online discussions as not worth the effort – “an impossible waste of time,” “the blind leading the blind,” and “ten times more work” – while others displayed skepticism about the depth of engagement that occurs in discussion forums. To encourage substantive posts, one instructor said: “I gave them specific instructions that they had to be substantial, i.e. none of this, “I agree with her” [or] “I agree with him.” You actually had to say something. And – this was the most labor intensive part – I graded each one, every week.” Although two respondents suggested that discussion forums allowed students to think through their responses, and another participant said students were less inhibited in online settings, most instructors expressed concerns about the quality of online discussions, and they contrasted those discussions with the deeper level of interaction and relationships established in face-to-face classes. One instructor observed there is “a quasi-social or quasi-political aspect of what goes on in the classroom. You’re learning to respect others’ points of view, take them seriously, and interact with them in a well-reasoned courteous fashion.” He questioned whether it was possible to do online. Another instructor remarked that the level of anonymity possible in online classes makes some weary because posts can become disrespectful.

Instructors mostly expressed frustration or wariness about facilitating student-student interactions in online discussion forums, but several also described difficulties pertaining to instructor-student interactions. Three participants said that they did not have as good a rapport with their online students, or that they were unsettled by the relative anonymity of their online students – that they would not recognize them if they passed by them on campus. Three other respondents – all part-time instructors – remarked that instead of interacting with a group of students in a classroom, they tended to interact with students one-on-one. As one of them put it, they moved from “one instructor to twenty-five students” to twenty-five “one-on-ones.” This relates to another perceived challenge of online instruction: time management. Several instructors struggled with the expectation and pressure of maintaining constant communication with their students. As one instructor noted:
So there’s a feeling that I always have to be online, always have to be available. I certainly have gotten that. Some people have made it explicit in their syllabi that I will get back to you in 24 hours, but don’t expect anything sooner, or don’t hassle me until after 24 hours. But I certainly see that as one of the most troubling aspects of online classes, is that there is a sense in which the class is always running, and that can feel especially burdensome to faculty – at least those who haven’t learned a degree of “cut yourself off and just not going to be bothered.”

Technology and assessment were also identified as challenges of online instruction: after having students repeatedly encounter technical issues while taking tests, instructors said they resorted to open-note and open-book assignments, giving students 24 hours to complete them. However, student-student and instructor-student interactions – and the time required to facilitate them – were cited more frequently as challenges of online instruction.

**Feedback: The Best Practice of Online Instruction**

In the absence of social presence and quality learner-learner interaction, a greater onus fell upon teaching presence and instructor-learner interaction. This was reflected in the third theme that emerged from data analysis, namely the importance of prompt responses and constructive feedback from instructors. Seven of the eleven instructors described it as a best practice for online instruction (Table 2 below). One instructor explained that prompt responses were essential because “the only connection they have with you is through this interface, so the more human you can make it, the better.” Another said that he learned the importance of quickly responding to student emails from a positive student review that said, “It seemed like he cared because he responded so fast.” He emphasized that students are looking for quick feedback, to see you connected, and not simply “throwing class up and coming and grading every couple of weeks.” In this way, students connect with their instructor – see him or her as more caring and human – if they receive prompt responses to emails and assignments.

**Table 2 Best Practices of Online Instruction.**

<table>
<thead>
<tr>
<th>Best Practice</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timely response and feedback</td>
<td>7</td>
</tr>
<tr>
<td>Frequent monitoring of students</td>
<td>5</td>
</tr>
<tr>
<td>Different modes of presentation</td>
<td>4</td>
</tr>
<tr>
<td>Establishing clear expectations</td>
<td>3</td>
</tr>
<tr>
<td>Encouraging student accountability</td>
<td>3</td>
</tr>
<tr>
<td>Being professional</td>
<td>1</td>
</tr>
<tr>
<td>Including a non-evaluated venue for student expression</td>
<td>1</td>
</tr>
<tr>
<td>Encouraging students to ask questions or make comments</td>
<td>1</td>
</tr>
</tbody>
</table>
Not only should one be prompt in giving responses or delivering feedback, but another instructor also emphasized the importance of giving ample constructive feedback. When he spoke with his students about their online learning experiences, he said:

Their single biggest complaint couldn’t have been more underlined: I don’t get feedback from the professor. I don’t hear back. I get a number, I don’t get a grade, and there’s no explanation as to why. I suppose in one sense this is a general rule, whether online or face-to-face. That feedback from their professor is all the difference in the world for them, but I think in particular for online, because in the online setting, if it ain’t for the feedback, you get nothing. You don’t even see the person talking. Where it’s one thing to go to class, and at least you know there’s a human being there. In the online class, I suppose from their perspective it might be a kind of Turing test, wondering whether or not there’s a live conscious being on the other end. For all you know it’s just a system. So they really appreciate that.

Acknowledging that it takes substantial time to generate ample feedback, he described how he developed shortcuts to make feedback “both substantial but also less than burdensome.” Anticipating the range of potential responses to a particular assignment, since he has used it in previous courses, he developed canned responses to each of the potential responses and adds a sentence or two of specific comments for each paper.

**Monitoring Student Activity**

Five respondents mentioned the importance of monitoring student activity in online courses. One instructor emphasized the importance of laying out expectations and having students acknowledge those expectations by signing a netiquette agreement. Other instructors emphasized the value of monitoring student activity to keep track of student participation. One instructor emphasized the facility of monitoring student activity via the Learning Management System, and he identified it as a distinct advantage of online courses. In addition to monitoring student progress, instructors recommended making students aware of their own responsibility for keeping up with course assignments, especially since students tend to underestimate the work required for online courses. Three instructors said it was important to encourage student accountability, acknowledging that students who were not strong independent learners tended to fell behind in their coursework.

**Relevance**

Relevance – the fifth and final theme that emerged through data analysis – refers to the ways instructors designed and delivered their courses that were relevant to learners. It includes, but is not limited to, content, assignments, as well as modes of presentation. Four instructors emphasized the importance of going beyond just having students read material and testing them on their comprehension. They emphasized the importance of different modes of presentation, for example posting videos that incorporated pictures and videos, not simply a recorded lecture. Those who used sequenced or staged assign-
ments described how they would share a resource or video or reading, then include prompts to answer, and respond to prompts either individually or in groups. One instructor described his sequence as either “Read, Write, Watch” or “Read, Write, Discuss, and Watch,” meaning that students would either: read an article, answer questions about it, then watch the lecture, or read an article, post to a discussion board and respond to others.

These themes – Intangibles, Interaction, Feedback, Monitoring, and Relevance – were the primary themes that emerged in the data analysis. Before discussing these results, I would acknowledge a final theme that did not emerge frequently in my analysis of interviews, but applied particularly to my observation of course shells: Professionalism. One instructor suggested that many instructors overlook the need for professionalism in their online instruction. Just as one might dress as if one were doing a face-to-face interview in preparation for a phone interview – to put one into the right frame of mind – he suggested that instructors should put on the professor uniform while answering emails, giving feedback, or posting responses. He said, “They’re not treating it as professionally as when you’re walking into the classroom, you know 30 eyes are on you, and you say, “I’m going to do the best I can do right now.” So you really do need the right kind of person who can say yes, this – my website, my Blackboard thing, how professional it looks – this is how they’re judging me. This is the equivalent of not wearing ripped jeans to class.” He was the sole instructor to identify course shells as significant – as the primary interface between instructors and student. Observation of course shells further substantiated his claim: the entry page for many course shells consisted of a list of documents, and only one entry page personalized the interface by including a video welcome from the instructor. In regards to usability, the toolbars for many course shells appeared haphazard or were not streamlined, for example, one had the link of “Start Here!” embedded halfway down the toolbar; and only one course shell explained to students how to navigate the website.

Discussion

The case study results suggest that when instructors fail to accommodate social presence in the design and delivery of their courses, their instruction lacks the dimensions of cognitive, social, and teaching presence that facilitate a community of inquiry, and instructor-learner communication and interaction become even more crucial to online instruction. The following sections consider five strategies for improving interaction and social presence in asynchronous online courses.

Establish an Online Community that is Comfortable—yet Structured

Social learning theory claims that learners construct knowledge by experiencing multiple perspectives of others through social interactions and collaboration (McCombs, 2015; Bryant & Bates, 2015; van Tryon & Bishop, 2009). Instructors should create a community in which students feel comfortable interacting with their peers, raising spontaneous questions, sharing “ah ha” moments, and exchanging social cues since they do not have access to nonverbal cues. To create this type of community, we can refer to research on social presence in online instruction. For example, a simple and clearly labeled course
menu can facilitate better interaction (Harris, Nier-Weber, & Borgman, 2016), and a course orientation that includes a welcome letter, an explanation of how to navigate the course, netiquette rules, etc. has been identified as crucial for establishing a safe and comfortable environment for such interactions (Lehman & Conceição, 2010).

Not only does such course structure enhance students’ sense of community, but structured discussion also encourages complex reasoning and higher-order thinking skills (Goldenberg, 1993; Tsui, 2002). Since most instructors view critical thinking as an important learning outcome, they can follow guidelines for creating structured discussions in their online courses, including using a modular approach to topical coverage, using limited set of open-ended questions, allowing sufficient time, and assuming the role of facilitator (Sautter, 2007). Effective facilitation of asynchronous online discussion forums depends on instructors clearly describing expectations about the depth of posts (Williams, Jaramillo, & Pesko, 2015), providing a participation rubric and/or examples of quality student interactions, and including forums for both socio-emotional discussions as well as content or task discussions on authentic topics (Rovai, 2007). Open-ended questions might follow the MANIC strategy of what students found Most important, Agreed with, did Not agree with, found Interesting, and Confusing (Curry & Cook, 2014), the four-question technique to encourage analysis (i.e. what was learned), reflection (i.e. why it is important), relating (i.e. how the material relates to the learners’ personal lives) and generating (i.e. what questions they now have about the material (Dietz-Uhler & Lanter, 2009), or other effective online discussion strategies (Darabi, Liang, Suryavanshi, & Yurekli, 2013).

**Humanize the Course Wherever Possible**

This strategy addresses the importance (but difficulty) that instructors expressed about conveying their passion for the material, their reticence about being misinterpreted if they used humor, and their feeling of not knowing their students. Instructors should seek to humanize as many interfaces of the course as possible: the entry page of the course shell, course orientation, self-introduction, and office hours. Observation of course shells showed they rarely showed instructors in pictures or videos, instead presenting text or narrated Power Point slides, which prevents students from connecting with the instructor in a human way. Instead of relegating the contact between instructors and students to responses to emails or feedback about assignments, instructors can humanize as many interfaces of their courses as possible so that students can get a sense of their passion, personality or persona (Crawford-Ferre & Wiest, 2012; Major, 2010).

A simple way to do this would be including a video welcome on the entry page, in which the instructor speaks directly to the students. Each time the students enter the course shell they would see the freeze frame of their instructor – however unflattering it may appear – that could reinforce a sense of connection with their instructor. Secondly, one might have students upload brief introductory videos instead of limiting such introductions to threaded posts, which would provide further social cues that might facilitate student-student interaction as well as instructor-student interaction. Thirdly, instructors might upload clips of videos that convey a sense of their teaching persona – for example, when they
used humor in classroom settings and the students’ reactions – which several of the interviews cited as a desideratum. Finally, when appropriate, instructors can use emoticons to convey their emotions, lighten the mood, or reduce ambiguity of discourse (Wall, Kaye, & Malone, 2016; Skovholt, Grønning, & Kankaanranta, 2014), or to encourage student perception of the online atmosphere as supportive and friendly (Wall et al., 2016; Reuschle & Mitchell, 2009). Some scholars argue that emoticons are best used in social-emotional oriented contexts such as social media and online discussion boards rather than task-oriented or professional contexts such as emails (Wall et al., 2016; Derks, Bos, & von Grumbkow, 2008). When used in appropriate contexts, instructors can model ways that their students might convey their emotions in order to improve interactions and contribute to a sense of online community.

**Make Feedback a Priority**

Prompt and constructive feedback is one of the most important practices for instructors of asynchronous online courses (Bryant & Bates, 2015; Shook, Greer, & Campbell, 2013), and by defining a specific timeline for responses to assignments and emails, instructors can establish boundaries and trust with their students (Warnock 2015). In their discussion of feedback, Graham, Cagiltay, Lim, Craner, and Duffy (2001) suggest that there are two types of feedback that online instructors can provide: information and acknowledgment. The former provides information or evaluation (e.g. comments and answers for an assignment), while the latter confirms that some event has occurred (e.g. assignments or emails have been received). Although the ideal is for instructors to give detailed personal feedback to each student, they acknowledge that time constraints may prevent such individualized feedback, in which case a general email to the class would suffice (Graham et al., 2001). Various technologies can usefully convey such feedback, including Google Hangouts, “message from instructor” mini podcasts, Youtube broadcasts, and email exchanges (Bryant & Bates, 2015).

Interviews with instructors confirmed that feedback was the most time and labor-intensive dimension of online instruction, but that they could use shortcuts to ensure that feedback was both prompt and constructive. For example one instructor, familiar with the typical responses students gave for a particular assignment, generated virtual sticky notes with general comments, which he would then cut-and-paste, adding a few sentences of more personalized feedback. He also generated videos in which he gave general comments in response to assignments, which he could then re-use in later courses, since students tended to adopt the same types of positions in response to the assignment.

**Establish Clear Expectations, then Monitor Discussions**

Instructors should make clear their expectations for asynchronous online discussions, ideally having students sign a “netiquette agreement.” Once those expectations have been clearly established, the instructor should frequently monitor discussion forums to ensure that students are following such guidelines. This will ensure that the online community remains comfortable yet critical – that students feel safe to voice criticism or questions without fear of offending their peers. Instructors can interject in instances where students
violate such expectations, but otherwise they should encourage students to be responsible for their own learning and seek ways to facilitate student-student interaction (McCombs, 2015; Warnock 2015; Sull, 2014).

**Make the Course Relevant to Learners**

Finally instructors should seek ways to make their courses relevant to learners. First, relevance means enabling learners to connect with the material by appealing to a variety of learning styles and using a variety of modalities (Ruefman, 2016; Limperos, Buckner, Kaufmann, & Frisby, 2015). In order to reach students with different learning styles, one should employ a variety of modes of presentation (audio, visual, text, etc.) to reach those learners, which can be facilitated by technologies such as Youtube, Powerpoint, Prezi, video games, and interactive websites (Ruefman, 2016). Second, instructors should make their material meaningful to their students by highlighting its relevance to them and the world around them.

While they are not the only strategies for effective asynchronous online instruction, they may be particularly useful for those who teach asynchronous online courses in the Humanities. They emphasize the importance of creating an online environment that allows for critical thinking, of humanizing interfaces to facilitate interactions, of giving prompt, constructive feedback, of establishing expectations, and ensuring relevance to learners.

**Limitations**

This case study involved a very limited number of participants, therefore additional research would be needed to verify whether its findings could be generalized. As a result, such strategies may not be universally applicable to all asynchronous online courses in the Humanities, but they could potentially be useful for instructors who find resonance between this particular case and their own institution.

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Integrating the Intangibles into Asynchronous Online Instruction


Teaching Presence in Online Courses: Practical Applications, Co-Facilitation, and Technology Integration

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\textbf{Abstract}

The number of online courses being offered at the postsecondary level has constantly increased. However, online instructors are still investigating ways to translate their pedagogical instruction into the online forum, while maintaining a strong presence instructionally. This paper aims to address how to build teaching presence in online courses. An example of how teaching presence was increased in an online graduate research methods course is shared focusing on the constructs of designing organization, facilitating discourse, and direct instruction. This paper concludes with implications and best practices for applying a similar model to build teaching presence in other online courses.

\textbf{Keywords:} Online learning, teaching presence, distance education, learning technologies, instructional design.

A recent report estimated the number of college students enrolled in online courses at over 5.8 million, which is 28\% of all college students currently enrolled in institutions of higher education (Allen & Seaman, 2016). This number will continue to grow as 63.3 percent of chief academic leaders report online learning as critical to long time strategic plans (Allen & Seaman, 2016). While this confirms the continued growth in the area of online course and program offerings, research on faculty teaching in online courses is not as robust as the research on the student experience (Bair & Bair, 2011). As faculty move their courses to an online environment, it is important to develop the pedagogical skills, practices, and methodologies that mirror the quality and substance of teaching in traditional face-to-face courses. One way to create online courses where the presence of the instructor is immersed in all aspects of the course is by focusing on “teaching presence” (Garrison, Anderson, & Archer, 2000). Teaching presence surrounds the process of facilitating, designing, and guiding the cognitive learning processes in a meaningful way (Rourke, Anderson, & Garrison, 2001). Guided by Garrison et al.’s (2000) Community of Inquiry Model, with an emphasis on teaching presence, the purpose of this paper is to address how teaching presence can be increased in online courses. What follows is an examination of teaching presence in the literature as well as an example of how teaching presence was increased in the research/information literacy portion of an online graduate research methods course by designing the organization of course, facilitating discourse.

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\textit{The Journal of Effective Teaching, Vol. 16, No.3, 2016, 76-84}

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through a co-facilitation model, and direct instruction through the use of emerging learning technologies.

**Conceptual Framework**

Elements of the educational experience within the online education environment have been explored by Garrison et al. (2000) through the Community of Inquiry model. The Community of Inquiry model focuses on cognitive presence, social presence, and teaching presence and was created to provide a way to contextualize learning transactions in a virtual environment. There are three categories of teaching presence indicators identified by Anderson, Rourke, Garrison, and Archer (2001) related to teaching presence: design and organization, facilitating discourse, and direct instruction. Design and organization takes on instructional management characteristics and is related to the overall development and designing of the course and subsequent education experience. In order for the teacher to have a presence in the course beyond live sessions and written communication, they must select and organize the course content integrating the learning activities, assignments, and assessments in meaningful ways. Anderson et al. (2001) identified this as a primary function of the instructor.

The second category of teaching presence indicators, facilitating discourse, is “a process of creating an effective group consciousness for the purpose of sharing meaning, identifying areas of agreement and disagreement, and generally seeking to reach consensus and understanding” (Garrison et al., 2000, p. 101). The process of facilitating discourse in an online course is an extremely intentional process that must be carried out with due diligence. Garrison et al. (2000) provided a coding scheme to identify indicators of discourse facilitation which include setting the climate for learning, acknowledging student contributions to the learning experience, and assessing the efficacy of the process. The online environment has proven to be a space that can facilitate deeper levels and discussions that call for higher level-thinking (Czerkawski, 2014). Facilitating discourse is closely connected with direct instruction, the third category of teaching presence, and takes charge of connecting content to opportunities where students interact and socialize with other. Holsler and Arend’s (2012) study showed that students’ learning experience was positively impacted when discourse, assignments, and introduction of course content was facilitated in an intentional way. Similarly, Kebritchi’s (2014) findings “support the importance of maintaining close and frequent interactions between the online learners and instructors” (p.480). Providing modest but prompt instructor feedback is one of the most effective strategies to support social and cognitive presences (deNoyelles, Mannheimer, & Chen, 2014).

Direct Instruction is the final category identified to describe teaching presence. According to Anderson et al. (2001), direct instruction is when “teachers provide intellectual and scholarly leadership and share their subject matter knowledge with students” (p.8). This can be accomplished using a variety of pedagogical strategies, and research has shown the students how immediate feedback is will impact the student experience (Ladyshewsky, 2013). In an online course, instructors participate in the practice of teaching by presenting content and questions to students, summarizing group discussion points, provid-
ing explanatory feedback, assessing student learning to confirm understanding, and by clarifying misconceptions and inaccuracies (Anderson, Rourke, Garrison, & Archer 2001).

**Case Study Model: Online Research Methods Course**

To understand how teaching presence was increased in the study at hand, the authors provide a case study of an online graduate research methods course that was facilitated through the framework of the Community of Inquiry Model (Rourke et al., 2001), specifically looking at the three categories of indicators of teaching presence (Anderson, et al., 2001).

There were two courses within a fully online Master of Science in Education program that the information literacy session was prepared for. While the program is fully online, about 95% of the students live within 30 miles of the university. Approximately 10% of the students attended the live session, and the remainder watched the recording within the week after the session was recorded. Due to the nature of scheduling and students having full-time work and home life responsibilities, it is extremely difficult to choose a time for a live session that is convenient for the majority of students. Through analytics within the Learning Management System, we are able to track when and how many times each student viewed the recording.

**Designing Organization**

The most effective way to build teaching presence within the online environment is to be proactive rather than reactive. Without the in-person orientation and connections of the traditional classroom, miscommunications and missed opportunities for learning can be amplified in the online environment. Developing community and communication to promote a shared peer experience is vital to success (Moore, 2014). Assignments should be purposeful and well explained and supported.

In this course, the instructor created a literature review assignment to synthesize course content with current scholarly resources. Students were expected to find their scholarly articles using the library’s resources. The primary instructor then sought out collaboration with a campus librarian to facilitate a live demonstration and active information literacy learning session in the learning management system (LMS) on best practices in finding scholarly articles. This information literacy collaboration between faculty and librarian had its genesis in the traditional in-person environment. When this course was taught in the past, the librarian physically came to the primary instructor’s classroom to facilitate a working session finding resources for course assignments. Students in these physical sessions were able to use the time while the librarian was in class to learn about the resources and to find their articles for the assignment. The librarian and faculty member wanted to transfer the success of the in-person collaborative session into the online environment. The librarians had worked extensively with classes in person but had never conducted a library session live online. The faculty member, while very experienced with
teaching in online environments, had not had a research session conducted in the online environment by an outside collaborator.

It was decided to hold a live session with the librarian facilitating instruction using a Blackboard Collaborate, a virtual classroom within the Learning Management System. Despite this being an asynchronous online course, “web conferencing technology allow(s) the instructor to quickly get feedback from students by asking them to use tools such as emoticons, text-chat, and polling” (Stover & Pollock, 2014, p. 399). This live session would not be required for students to attend, but was highly recommended. The session would be recorded and available to view by all students. As with an in person class, it is beneficial for students to be fully engaged with the learning process in every way possible. Prerecording a session to have available as part of the learning management system left participation in limbo so it was a purposeful decision to hold a live session.

The live session to be facilitated by the librarian would be scheduled two weeks before the literature review assignment was due, rather than at the beginning of the course. This was not a general library resources session, but rather a session specifically to help students with the literature review assignment. In general at this institution, information literacy workshops with the librarian are not orientations or overviews, but targeted sessions focusing on the specific research needs of the class on hand. Students in this course were introduced to the assignment by the instructor, and then encouraged to attend the live session with the librarian to solidify understanding of library resources and to begin their literature search. This was a purposeful design by the faculty instructor and librarian to make the session as relevant and focused as possible. Integrating this session into the course was not a flippant decision; rather, as prescribed by the theory of instructional management put forth by Anderson, et al. (2001), it was a deliberate effort to reach out to students at their point of need and directly provide an engaging opportunity for learning and assignment-specific instruction.

Facilitating Discourse

As discussed previously, the integration of the online librarian-led information literacy session was designed thoughtfully by the collaborating parties: the faculty member and the librarian. However, establishing a strong and impactful teaching presence in the online environment requires discourse with the students throughout all phases of the class. In order to build understanding of requirements and expectations, feedback and discourse must be proactively sought out, not just implicitly expected. There is a positive correlation between the preparation and guidance that an instructor puts into feedback activities and student engagement with those activities. Instructors must design the course to meet the needs of the students. Furthermore, once sought out, feedback should be acted upon, and should help mold instruction (Ma, Han, Yang, & Cheng, 2015).

Prior to the live online session with the librarian, an electronic survey was distributed by the faculty member to the students asking the following questions. With the exception of the first question, all questions were comment responses:
1. How confident are you with finding a peer-reviewed article from a research database? (Students had the options: ‘Extremely confident’, ‘Confident’, or ‘Not confident’)

2. What education research databases are you familiar with?

3. What keywords would you use to search for issues surrounding cultural and/or linguistically diverse minorities and assessment practices?

4. What experience have you had using APA style?

5. What specific help can the librarian provide you with during the online session?

Answers to these questions were varied, but only two students answered ‘Extremely confident’ to the first question. The general consensus was that help was needed knowing what databases to search, how to frame keywords in the databases, and the best resources for APA. These students were graduate students; yet there readiness reflected the need for introductory level instruction on research resources and best practices.

The librarian received these results prior to the session. The design of the session was directly drawn from the results of this survey. Without reaching out directly to the students to gauge their comfort level and ability, as well as asking open-ended response questions, the online session would not have had concrete student input into its creation. In traditional information literacy sessions, the librarian reaches out to the faculty to ascertain student needs, assignments details, and any special areas of focus. This approach was enhanced by the inclusion of the survey. Without the faculty member communicating with a librarian and with the students, research needs could have been left unmet.

The faculty member and librarian facilitated discourse purposefully and empowered the students to voice their needs. In doing so, understanding was built between all parties involved. There was then a brief electronic survey distributed after class gauging effectiveness and soliciting advice for what could be improved. This was a more informal open-ended survey and students responded positively and expressed interest in a similar session in future classes. In the future, a more concrete post-session survey will be distributed to get quantitative data on student perceptions. None of the attending students had APA errors and all submitted articles were peer-reviewed and within the currency parameters.

In addition to surveys, during the live online session, the chat feature in Blackboard Collaborate was used, and students spoke up using their own microphones. The communication lines continued to be open and encouraged during direct instruction and this enhanced the relevance and effectiveness of the librarian’s session. There was a sense of peer-to-peer and peer-to-instructor community that was actively encouraged. There is no single way to promote this type of community and communication, but establishing in some way in the online environment is key to student satisfaction and success (Moore, 2014).
Direct Instruction

Direct Instruction is the third tier of Teaching Presence discussed (Anderson et al., 2001) and it accounts for the most traditional of the three tiers. The result of the discussed design and communication was an hour long live information literacy instruction session facilitated by the librarian and delivered through Blackboard Collaborate, the course management recording system. In an effort to put forth a collaborative teaching presence, both the faculty member and the librarian were live in the session. The purposeful design and proactive efforts at discourse led to a targeted session catered directly to the students’ needs.

Students, the librarian, and the faculty member ‘met’ at 7pm in the Blackboard Collaborate room. The expectation was that most students worked during the day so the session was held after traditional work hours were over. The librarian began the session with an uploaded PowerPoint shared with the class. The chat was activated from the beginning of the class and the librarian continuously encouraged questions to be asked either using microphones or the chat.

After discussing the literature review assignment requirements, introducing what peer-reviewed journals are and what library databases are, the librarian switched from the uploaded PowerPoint to a shared browser screen. As discussed in the ‘Designing Organization’ section, the goal was to make this online research session mirror as closely as possible the in-person research session that the librarian frequently conducted. Transitioning from demonstration to hands on work is a key part of a successful library instruction session and that was transferred as closely as possible to the online environment. Recent research has shown that an instructor’s activity planning and discourse establishment are vitally important to student engagement in the online environment (Ma et al., 2015).

The librarian had been provided with the students’ topics in advance and modeled several in the library database while sharing the screen. Mechanics of the database were discussed, as were research best practices. The librarian’s browser screen was shared with students throughout this demonstration. The students’ pre-submitted topics were used to demonstrate best practices in education research in the database. Students used the chat to ask questions as this demonstration was ongoing. This point-of-need discourse could not have happened with a pre-recorded video. Students were then given time to search their topics on their own to see if they had any issues or questions. The live session wrapped up with sharing of library’s contact information and an offer of individual help if needed. The session was targeted, relevant, and interactive. The principles of teaching presence were woven into every aspect of the synchronous session. Using the Community of Inquiry model put forth by Anderson, et al. (2001), a successful synchronous session in an asynchronous course was designed, shared and delivered.

Lessons Learned and Suggestions for Best Practices

The findings of this study have brought forth several practical recommendations that can inform best practices for effective teaching presence in online courses. First, when plan-
ning for teaching, determine the individual needs of the students, where they are currently at academically, and their particular learning styles. Preisman (2014) advocates “developing and implementing more highly individualized cognitive activities and assignments” (p. 14). In the courses covered in this article, the instructor and librarian prepared and sent a survey to students to capture their individual needs. Additionally, this will set the tone and allow that what you are teaching is applicable to the learning and content acquisition needs of the students.

Secondly, scaffold and differentiate instruction so all students receive the support they need. Scaffolding involves guided instruction in multiple layers until students are able to complete the given task independently (Vygotsky, 1978), while differentiating instruction is designing curriculum to meet the individual needs of students. Differentiation should go beyond the planning phases and include the actual instruction of content (Parsons, Dodman, & Burrowbridge, 2013). Since the individual needs of students would have already been determined, plans for supporting students at the levels they are currently at, can be part of the process. In the course at hand, some of the students never heard of APA formatting prior to the assignment, while others have worked on research papers in previous courses. The range of student levels will vary, which makes it difficult to teach all learners the exact same way.

Finally, it is extremely important to leverage the appropriate technologies that can support the teaching process and student experience. The availability of new and exciting emerging learning technologies (Pacansky-Brock, 2013), present an opportunity for teacher educators to provide student-centered personalized feedback in online courses. In the case represented four multimedia application were used to facilitate the teaching process. Google Forms is a great way to create simple or complex surveys and was used by the instructor and librarian teaching team as a way to capture students’ prior knowledge. Within the Learning Management System, Blackboard Learn, Blackboard Collaborate was used to hold and record a live session on navigating research databases; a skill many students new to the research process struggle with. Blackboard Collaborate also allowed for a question and answer session with students and an embedded chat feature which allowed students to unobtrusively ask questions during the session. The Learning Management System also served as a file and content storage system which held the recorded lesson, sample research database explorations, documents with examples of APA citation and formatting, and other related files.

**Conclusion**

As online education continues to expand (Oyeleke, Olugbenga, Oluwayemi, & Sunday, 2015), it is important that learning remains transformative and that classes are designed and taught through constructive pedagogy. Taking Research Methods can be quite challenging for students new to the process, even if they are at the graduate level. Partnering with a librarian for a co-facilitation model has proven useful and inspired similar collaborations. Ni (2013) captures next steps for continuing exploration of the teaching effectiveness in distance education when they stated: “as we continue to assess, improve, and therefore accumulate knowledge of teaching and learning effectiveness in an online envi-
ronment, we hope that students, too, will achieve a greater understanding of and enjoy greater benefits from this new mode of instruction” (p. 213). This includes all content and subject areas, at all levels of learning and discourse.

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The Knowledge Café: A Unique Teaching Experience

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Abstract

Teaching adult learners in a community-based educational setting differs in many ways from applying typical campus-based or online instructional best practices. Adult learners show tremendous diversity in their backgrounds, approach learning in a myriad of different ways, and rely heavily on their past experiences to help guide their future knowledge acquisition. Teaching a thoroughly engaged and eclectic group of adult learners in an “off-campus” setting can be rewarding and challenging at the same time. This paper describes a collaborative partnership, known as The Knowledge Café, between a local community foundation and a regional campus of a major university to provide business owners with advanced knowledge on professional social media technologies. Details regarding how the partnership was established are presented, along with teaching insights from the inaugural year of operation. Suggested future work and activities provide an overview of how The Knowledge Café may evolve as the campus-community partnership continues to grow.

Keywords: Community partnership, adult learners, social media, knowledge café, teaching off-campus.

For post-secondary educators, teaching outside of the structure of the college or university system can be an opportunity that is at the same time both rewarding and highly challenging. Surrounding communities are frequently eager to engage faculty members for the specialized expertise and knowledge that they hold. In turn, faculty members can benefit strongly from the real-world problem solving experiences and interactions that they encounter when working on issues of importance to the community.

Such partnerships tend to thrive when each party has something meaningful and unique to offer – and for educators, this is often the ability to present complex subject matter in a manner that it is readily absorbed and comprehended by a very diverse community audience. Excelling in this process requires a keen grasp of the needs and wants of the community participants along with a fundamental knowledge of how to approach an audience that can range in age from 18 to 80 with a myriad of different levels of understanding. In short, the challenge facing the educator is very different from that seen in typical classroom settings where students are likely to share many of the same educational experiences and goals.

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This paper explores the design, implementation and inaugural year of operation of a novel campus-community partnership to provide education and training to small business owners and prospective small business owners on the theory and practice of business-focused social media technologies. These are technologies that could, if properly applied, help drive the growth of small businesses across the area beyond what is possible to achieve through more traditional business practices. To place the partnership into perspective, discussions covering the process of learning how to effectively teach these technical concepts and plans for transforming the initial program into a university course-driven service-learning project over subsequent years are included.

Partnering with the Community

Common Partnerships

Partnerships between university campuses or individual faculty members and the surrounding communities come in a variety of forms that all serve to link very different types of organizations in pursuit of common learning and mutual benefit. Curwood and co-workers observed that partnerships of this kind tend to be hard work and also tend to involve blending together different personal styles, cultures, locations and other parameters that can result in complex working relationships (2011, p. 16). To the degree that a partnership can be structured ahead of time, with a detailed understanding of what will be achieved, the probability of success is enhanced for those who will contribute on an ongoing basis.

Such partnerships are often classified, in general terminology, as to whether they fall under community service learning guidelines (CSL) or community-based research guidelines (CBR) (Curwood et al., 2011; Hoyt, 2010; Gray & MacRae, 2012). In the case of CSL, the partnership is based on “an educational approach that integrates service in the community with intentional learning activities” (Curwood et al., 2011, p. 15; Canadian Alliance for Community Service-Learning, 2006, p. 1). In the case of CBR, the distinction from CSL is defined as the opportunity for “knowledge production” by all participants involved in the partnership (Nyden, 2009, p. 9) as opposed to a portion of the participants taking a more passive role of receiving the benefits of the learning activities without actively contributing significant independent knowledge of their own.

At Miami University, both CSL-style and CBR-style projects and courses are abundant within the curriculum. Undergraduate courses make use of the CSL model in the majority of cases with projects commonly pre-arranged between individual faculty members and community institutions under the auspices of a university service-learning coordinator. When specific guidelines are followed, faculty may apply to have their courses designated as university-approved service-learning opportunities and students successfully completing the courses receive a service-learning designation at graduation. Graduate-level courses are more likely to follow a CBR-style approach or one that incorporates elements of both styles.
Also of strong interest within the university, are projects involving individual faculty members or groups of faculty members interacting directly with community members or institutions on an ongoing basis as elements in a plan to provide teaching expertise that is frequently combined with community service. Other interactive plans may involve a scholarly research program. The interactions tend to follow the approach described by Hoyt (2010) where faculty members perceive a community need or opportunity, investigate the situation, and build a mutually beneficial partnership with the community over time. Hoyt noted that partnerships can develop into a state of “sustained engagement” where “people inside and outside the university engage in an evolutionary continuum between the ever present themes of practice and knowledge; they seek to overcome, rather than reinforce, the false dichotomy between the two” (p. 82).

Sustaining engagement with the community is not always easy and certainly does not always follow a straightforward path. Clifford and Petrescu (2012) observed that three dimensions must be covered in the process of creating community engagements that are both beneficial and sustainable for the parties involved. These dimensions include internal (relationships, organizational dynamics and culture within the university), external (relationships and dynamics of the community, power and resource imbalances, community identity), and personal (psychology, competencies and career issues of the faculty) – all having a strong impact on the overall partnership (p. 83). The authors offer an engagement strategy that centers on processes involving being authentic in engaging the community, maintaining a core commitment to learning and carefully articulating the commitment to improve the community throughout the process (p. 90).

Identifying a Community Need

The Southwestern Ohio region has lost a large percentage of its manufacturing jobs over the past ten to twenty years. Community-based nonprofits are working to help local residents establish new small businesses – particularly those that fall outside of the traditional manufacturing sector. Much of this effort occurs by offering basic business workshops and skill-based training on contemporary business topics such as financing, managing a workforce, marketing products and/or services and other similar topics. Workshops and programs are advertised via traditional print and voice media plus through social media channels, and instruction or coaching in basic social media techniques appropriate for business is readily available. At the present time, however, what has been lacking is any form of advanced social media training for business owners that would allow them to extend their businesses more broadly via content-driven social media sites, strategic scheduling of updates and other communications, understanding of user demographics through Web analytics, and other more complex processes.

As might be expected, the communities that may be most willing to engage with university resources in establishing ongoing partnerships are those that have the fewest resources available themselves to conduct needed projects in support of community growth and improvement. Since university resources are also stretched, these communities are not looking to universities as sources of funding, but rather sources of expertise that may be tapped and leveraged for the good of the community. A case in point is the revitalization
project in South Memphis described by researchers Lambert-Pennington, Reardon and Robinson (2011). The University of Memphis has shown success in addressing urban core issues such as land use and transportation through establishing partnerships that involve multiple faculty members and students from a broad cross-section of departments. Such interdisciplinary partnerships add additional layers of complexity to the process, but also afford the opportunity to make important contributions that may be outside the scope of what a single professor or even a single department can provide (p. 62-63).

particularly when seeking to establish committed partnerships in economically challenged areas, individuals at either the community level or the university level may face suspicion that partnerships may not last. This occurs despite the fact that all parties involved recognize the need for the work under consideration. Stated in other terms, once the true depth of the engagement needed to bring about needed change is fully understood, will partners be up for the challenge? In the South Memphis revitalization work, it took several semesters of continuous engagement by university faculty and students before residents of the community were willing to buy in and trust the efforts of the partnership (Lambert-Pennington et al., 2011, p. 65-66). Support from the university administration was viewed as critical during this timeframe as faculty were spending precious research time on community engagement activities and civic reports to explain projects as opposed to generating more traditional research output resulting in peer-reviewed journal articles (p. 65). Similar concerns are noted by Hoyt (2010) when describing community partnerships with economically challenged communities in Massachusetts surrounding Harvard University.

Communications – Promote Mutual Benefits

Communications by the campus or by faculty members involved in campus-community partnerships can be a critical factor in whether or not such partnerships are viewed in a positive light, regardless of the degree of success achieved through the partnership itself. Research by Arrazattee, Lima and Lundy underscores this importance by stating that, “Non-reciprocal representations of campus-community partnerships can alienate community partners serving an important role in the educational process, can perpetuate the idea of ‘helpless’ communities needing assistance from the outside to be successful, and can reinforce the very notions that engagement activities such as service-learning aim to dispel” (2013, p. 41). These researchers stress that language used to describe these partnerships can vary widely from department to department within a given university. For example, general news articles published by universities on campus-community partnerships frequently contained language that placed the community partners at a disadvantage – such as referring to the community partner(s) in terms that equated to being “needy” or that they were receiving “help” from the university (p.47). In contrast, community engagement offices at the same universities were much more likely to use collaborative language in their communications that stressed “working with” community partners as opposed to the help-oriented language previously described (p. 48). The language difference is not as subtle as it may initially seem, due to connotations involving the self-esteem of those who may be perceived as requiring assistance.
It is similarly of interest to note that the language and actions of university officials can also have implications for the faculty members engaged in campus-community partnerships, thus potentially affecting the willingness of the faculty to participate. O’Meara, Lounder and Hodges (2013) observed that a theory on power and agency in organizations previously described by Lawrence (2008) could be used to understand and explain faculty reactions to various types of actions taken with regard to campus-community partnerships. Termed “episodic power” by these researchers, such strategic actions were viewed as providing a key driving force of encouragement, especially to younger or tenure-track faculty who might question whether or not campus-community partnerships were worth the time and effort in an already-crowded pre-tenure agenda (p. 10-11). As observed by Whitchurch (2012), the trend toward more community engagement by faculty is likely to continue as academic institutions seek to redefine and improve their relationships with the communities that they serve.

As an example of this practice, Miami University places a very high regard for and emphasis on activities that strive to engage the communities surrounding the three primary campuses in Southwestern Ohio in productive, mutually beneficial activities. Faculty are encouraged to seek out opportunities to develop long-term working relationships with community agencies that can encompass teaching, research and service pursuits, either singly or in combination. Such practices continue to grow in importance across institutions of higher education and may be classified in a variety of ways to include “civic engagement,” “community engagement,” “service-learning” and several other terms (Driscoll, 2014; Pike, Bringle, & Hatcher, 2014).

While there is no indication in the literature that an increase in emphasis on community engagement projects and activities is altering the way that universities as a whole evaluate faculty, (for example, away from the traditional emphasis on excellence in teaching and research with service-activities listed third, if at all) many institutions favorably acknowledge such faculty service either institutionally or by department and use it as a characterizing element of the university (Pike et al., 2014, p. 90). As one example, the Carnegie Classification of Community Engagement provides a good indicator of this emphasis, with 361 institutions now listed as qualifying through both Curricular Engagement (CE) and Outreach & Partnerships (O&P) (http://nerche.org/index.php?option=com_content&view=article&id=341&Itemid=92).

On a specific institutional basis community engagement and service activities can also rise to the level of profoundly influencing faculty evaluations – particularly in situations where the mission of the institution calls out the process as a key area of emphasis. This is the case at the author’s institution, one of the Regional Campuses of Miami University. Faculty are evaluated annually on three criteria that include, in order, teaching performance, service, and finally, scholarship/research. Service activities and projects that seek to fully engage the communities where the campuses are located receive active support from the administration in a variety of tangible ways and are reflected in detail on annual performance evaluations.
The Complex Relationship Between Campus-Community Partnerships and Teaching

Community organizations love to engage university faculty members. Faculty are frequently viewed as having a wealth of knowledge in subjects that are of strong interest to, and in many cases, great importance to, members of the community. From the faculty perspective, opportunities to engage the community often involve chances to interact with eager students who bring a tremendous diversity of experience and thought to the learning process. Successfully engaging the members of a community organization, or members of the community at large, in an educational setting is, however, substantially different from teaching university students in a traditional lecture-based or online course setting. Careful attention to the preparation and delivery of educational materials, plus an in-depth understanding of how adult learners process information both help maximize a successful outcome.

Marienau and Reed observed that community-based learning for adults requires balancing several distinct perspectives, including a concern for transmitting knowledge, the developmental value of including experiential learning, and the possibility of needing to teach both younger and older learners within the same program (2008, p. 61-62). The authors note that conceptual frameworks involving “events that directly engage learners in dealing with genuine problems or situations, while reflecting critically on these experiences in interaction with others” are likely to resonate well with the needs and wants of community learners (p. 62). Moreover, adult learners may be faced with less flexibility in terms of their schedules than their traditional student counterparts and be less likely to do work outside of the community classroom to prepare for subsequent sessions (Berker & Horn, 2003; O’Connell, 2002). This underscores the suitability of using presentation and assignment styles that allow for collaboration between participants and time for discussion within each instructional session.

Adult learners tend to thrive in situations where they can leverage their prior experiences and apply them to new problem solving situations (Taylor, Marienau, & Fiddler, 2000). Designing activities and assignments that allow learners to take the skills that they have and the knowledge that they have accumulated through life experience, professional training, and other sources and then apply those attributes to new topics can stimulate interest in the subject matter, but it also requires great care to structure approaches so that they are neither too difficult for those who lack prior knowledge, nor too simplistic for those who seek to build on a foundation of knowledge already in place. Grouping learners into smaller instructor-assigned teams after holding a preliminary discussion with all learners can serve to establish appropriate blends of skills and knowledge to keep all learners engaged and moving forward.

Particularly in situations involving a high percentage of adult learners, it is often helpful to provide plenty of opportunity for participants to influence the direction that the instructional process will take (Marienau & Reed, 2008, p. 70). This again speaks to the fact that adult learners are more likely to enter into a new learning situation in pursuit of specific knowledge – often to complement something that they are already partially conver-
In a similar vein, it is also helpful for instructors to follow the pulse of discussions that occur in community learning situations, often allowing learners to take the floor in providing stimulating multi-directional conversation on a topic with the instructor at least temporarily taking on more of the role of a discussion facilitator as opposed to a deliverer of knowledge (Neuda, 2010). This approach helps to establish a common footing with learners, known as “adults teaching adults” that can drive comradery in the community classroom and stimulate comprehension of the topics at hand (Neuda, 2010, p. 2, 10). A similar approach noted by Stewart (2014) has been show to work well in developing professional learning communities among students who have similar interests and are aspiring to secure a selected advanced degree. Thus the crossover into the realm of adult learning in a community partnership is not unexpected.

A New Campus-Community Partnership

Defining the Opportunity

The genesis of campus-community partnership under discussion here came through conversations that the author had with local business owners and individuals demonstrating an interest in starting new businesses. Although many of these individuals believed that they had strong support within the community and good, fundamental resources that they could tap for training on basic business practices, more advanced skills and counseling were largely lacking. One of the primary issues that came up repeatedly was how to extend the reach of a business venture beyond the local community. Being an economically depressed area, there was only a certain amount of potential to grow a small business beyond a modest local clientele, yet that level of business success would not always be sustainable.

Concurrently, the author had recently developed and launched a new senior-level undergraduate course entitled “Social Media and Career Development” for students who wanted to learn more about maximizing the impact of their online job search efforts and, subsequently, their ability to use social media appropriately once on the job. Tapping more deeply into the knowledge of local and regional business people, plus their needs and wants in hiring new employees, had the potential to significantly enhance the concepts taught in this course. Thus, it appeared at this point that it could be possible to develop a mutually-beneficial partnership.

Professional Social Media Use for Business

It was readily apparent that general training on how to use social media to increase the “reach” of a business, coupled with one-to-one coaching on specific applications, could
make a difference in the marketplace success of small- to medium-sized businesses in the Middletown, Ohio area. Professional use and application of social media technologies continues to rise at a rapid pace across business, government and not-for-profit institutions. The term “professional” is key in realizing maximum benefit from the time invested in social media as overuse or careless use of the relevant technologies does not equate to automatic professional success (Cleary, Ferguson, Jackson, & Watson, 2013). The challenges are many and are as diverse as the spectrum of constituencies served by social media technologies and applications. In the scientific community, social media applications are influencing how scientists share data and collaborate on projects, plus how scientific papers are reviewed and published (Coppock & Davis, 2013). In health care, sharing of recent developments in treatment between physicians and also sharing health care guidelines with patients are both essential contemporary applications of social media (Cleary et al., 2013, p. 153-154). In the public sector, social media sites are frequently used to disseminate information and/or provide access to government programs, but true two-way engagement with the public remains a high priority issue to resolve (Mergel, 2012). Not-for-profit agencies share many of the same constraints and challenges as government, with resource mobilization to help achieve results as a primary issue that still needs to be more thoroughly addressed (Zorn, Grant, & Henderson, 2013).

Focusing again on business-oriented social media technologies and applications that are appropriate for small- to medium-sized businesses, use tends to be prolific and follows many of the same fundamental best practices of business communications, management and leadership, and marketing found in general business guidelines (Schaupp & Belanger, 2014; Kadam & Ayarekar, 2014). Unfortunately, for many individuals just starting out in business, and certainly for those individuals who may not be experienced in social media from their casual or private online use, understanding and distilling to practice the huge amount of literature available on the topic can be both time consuming and confusing. When learned collaboratively with partners and in situations with multiple opportunities to experiment and receive feedback, the challenge of professionally incorporating social media into a business plan becomes much more manageable.

For more detailed information on teaching approaches for introducing adult learners to social media technologies, the research conducted and summarized by Heaggans (2012) may also be helpful. In a practical sense, Heaggans observed that adult learners are less likely to be interested in the inner workings of a computer than their younger counterparts and more likely to want to move directly toward how the technology can assist them. Approaches that limit the use of computer and/or social media jargon and focusing directly on steps that adult learners can take to address their own articulated needs can be highly successful (p. 2-3). Additionally, Heaggans found that adult learners are less likely to complete multi-step projects and assignments than their younger counterparts. This translates into a best approach based on delivering concepts in smaller increments with additional time spent between successive segments for practice (p. 5).
**Establishing a Community Partner**

With the basic concept of the partnership defined, the next step was to identify a partner within the local community that could help bring together a highly diverse group of potential participants from the business community and also assist with funding the programs that would be delivered. Such a partner was identified and secured through a grant from the Middletown [Ohio] Community Foundation (MCF) under the heading of support for Quality Education and Human Needs, one of four quarterly grant funding competitions held by the foundation each year. This application for funding sought to provide instruction and a discussion forum for those interested in learning more about professional social media applications that could be used to expand and/or enhance business performance. The program described in the grant application was intended to strengthen the ability of local Middletown small business owners and potential business owners to effectively and efficiently employ a wide variety of business-building social media technologies thereby enhancing the probability of long-term business success. The primary benefit to the community was described as augmenting the excellent small business development services already available in Middletown by filling a knowledge gap regarding social media best practices and opportunities that could enable small business owners and potential business owners to expand their operations and build their competitive advantage and/or expansion in the marketplace. A series of monthly “lunch and learn” activities, including instructional presentations, book reviews, guest speakers, and panel discussions was proposed to blend together a cohesive, practical guide to the social media technologies that small business owners and potential business owners can actually put into practice.

The grant application was funded by the MCF, with funds set aside to cover a series of seminars to be delivered roughly within the timeframe of September 1, 2014 through June 1, 2015. The MCF funded the campus-community partnership with a modest budget of $3750. To help defray costs, the Miami University Middletown administration offered to waive the costs associated with renting university space for the sessions, saving a total of $2,700 over the series. Shortly after the sessions began, an additional $500 in grant support from the Middletown Campus Center for Teaching and Learning (CTL) was raised to assist in covering food costs and honoraria for guest speakers. With careful attention to details regarding instructional materials and other supplies, a workable budget was ready to go.

**Selecting a Name**

With a solid working agreement established with the MCF regarding the deliverables of the partnership, final preparations turned to issues such as contracting with a reliable caterer for refreshments, securing actual room reservations on specific dates and contacting potential guest speakers to determine their interest in participating. The partnership was also given an official name designed to be attention-getting and evocative of the core purpose of the program as a whole. Borrowing from the work of David Gurteen, a UK-based knowledge management consultant, the campus-community partnership was named “The Knowledge Café.” True knowledge cafés serve as “… a means of bringing a
group of people together to have an open, creative conversation on a topic of mutual inter-

test to surface their collective knowledge, to share ideas and insights and to gain a deeper understanding of the subject and the issues involved” (Gurteen, 1998). While the first few sessions of The Knowledge Café were envisioned largely as lectures and presentations to establish a common baseline level of knowledge among participants, it was also envisioned from the start that sessions would evolve toward a collaborative state of participative knowledge sharing more fully embracing the principles set forth by Gurteen (1998) and also by Gasik (2011) in his later work on project knowledge management.

Understanding the Needs and Wants of Potential Participants

The first session of The Knowledge Café was held on October 1, 2014. Several weeks prior to that session, a brief survey was distributed to local business owners via chambers of commerce, local business incubators, etc., asking for their input on topics to cover, desire to attend afternoon or evening sessions and several other parameters. The results obtained were used to guide the development of the schedule for the series of eighteen sessions.

“Pre-session” results included the following observations, based on a total of 55 completed surveys. Approximately two-thirds of respondents (67%) stated that they would prefer the evening timeslot. Twenty-two percent favored the afternoon timeslot and eleven percent said that the topic of the session would drive their choice of timeslot. Respondents cited a variety of reasons for wanting to attend The Knowledge Café including, in order, “to learn more about social media” (78%), “to network with other business owners” (72%), “to start a new business” (44%), “to help my organization” (28%), and “to get help starting a new career” (22%).

Respondents were also asked to rank-order a list of sixteen potential topic ideas for The Knowledge Café from those of greatest interest to those of minimal interest. Results are presented in Table 1 for the top nine topics from the survey. Beyond the top nine, it was decided to keep topic selection flexible to evolve with the preferences of participants as the program moved forward.

Getting the Word Out

All advertising for The Knowledge Café was self-produced and followed the format of a two-panel flyer that could be easily transmitted as a pdf by e-mail or incorporated as a jpeg image into Web sites or social media sites of local and regional business organizations. The university assisted by featuring the advertising on monthly event calendars and in bulk electronic mailings of campus activities. The overall theme and the basic description of the event remained consistent across all flyers produced, with the material on the left-hand panel and the specifics regarding each session changing to reflect the material that would be presented and discussed. The right-hand panel provided general information on The Knowledge Café to put individual sessions into perspective. An example of a typical advertisement is shown in Figure 1. This session provided participants with
**Table 1: Topic Preferences for The Knowledge Café.**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Mean Ranking *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook Marketing</td>
<td>1.64</td>
</tr>
<tr>
<td>Why is Social Media Important to Business</td>
<td>2.80</td>
</tr>
<tr>
<td>Twitter Revenue</td>
<td>3.56</td>
</tr>
<tr>
<td>Business Book “Brainsteering”</td>
<td>3.75</td>
</tr>
<tr>
<td>Growing Your Social Media Influence</td>
<td>3.80</td>
</tr>
<tr>
<td>Return on Investment in Social Media</td>
<td>4.00</td>
</tr>
<tr>
<td>Business Book “The 2020 Workplace”</td>
<td>4.33</td>
</tr>
<tr>
<td>LinkedIn for Business</td>
<td>4.42</td>
</tr>
<tr>
<td>Pinterest and Instagram</td>
<td>4.50</td>
</tr>
</tbody>
</table>

* The mean ranking value is a measure of the relative frequency that each choice was cited by survey respondents. The lower the number, the more popular the choice. Sample size = 55 respondents.

Figure 1. Advertising for The Knowledge Café Session on April 16, 2015.

the opportunity to interact with a panel of Facebook experts to learn the tips and techniques necessary to produce a business-focused Facebook site.
Welcome to The Knowledge Café

Schedule

A typical session schedule for The Knowledge Café is depicted in Table 2. Set up in this manner, sessions generally flowed very well and there was ample time for all participants to do some networking along with participating in the actual session program.

Table 2. A Typical Session Schedule.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meet, Greet, and Refreshments</td>
<td>30 min before and first 10 min of session.</td>
</tr>
<tr>
<td>Announcements</td>
<td>5 min</td>
</tr>
<tr>
<td>First Part of Program</td>
<td>45 min – usually presentations with Q&amp;A</td>
</tr>
<tr>
<td>Break, Networking, Refreshments</td>
<td>15 min</td>
</tr>
<tr>
<td>Second Part of Program</td>
<td>45 min – interactive problem solving &amp; discussion</td>
</tr>
<tr>
<td>Adjourn</td>
<td>“Hard Stop” at 2 hrs</td>
</tr>
</tbody>
</table>

For sessions conducted directly by the author a handout with text and helpful information was provided at the start of each session. Most guest speakers also followed this protocol. All sessions featured visual aids displayed on a large screen – many with “live” interactions over the Internet.

Results

Demographics and Attendance Parameters

The Knowledge Café has received a highly positive response from the Middletown community, with virtually one-hundred percent of attendees indicating that they believed the sessions to be of value when polled. Sessions have varied in attendance based on a number of variables that include the time of day, the weather, other events scheduled the same day, the topic selected, etc. The average attendance is 14-15 people per session. A graph of the attendance across all sessions to date is provided in Figure 2.

The sessions presented on October 1, 2014 and October 15, 2014 were identical and duplicates to provide the same introductory material to both an evening session (October 1) and an afternoon session (October 15). Thus, the unusually low attendance at the second session on October 15 is not unexpected. Other gaps in the data set include two sessions that were cancelled due to weather-related closings of the campus.

Attendance at evening sessions generally exceeds that of afternoon sessions, although afternoon attendance actually has been more robust than initially expected. Anecdotal
conversations with attendees indicate that they are often able to take a “long lunch” at work to attend if the topic is of interest. Individuals who are retired and/or small business owners who are single proprietors also frequent the afternoon sessions. A breakdown of the attendance by afternoon/evening session timeslots is provided in Figure 3.

Data were also tracked for new versus returning attendees. The Knowledge Café shows a good history of attracting new attendees to sessions, but the number of attendees who
return for multiple sessions is also growing. The relationship between these two groups of attendees is shown in Figure 4.

Attendees have come from many different backgrounds and include small business owners (57%), entrepreneurs (including retired business people who have become entrepreneurs, 10%), individuals from non-profit agencies such as community foundations, churches, educational institutions, and governmental bodies (13%), plus university students and university faculty members (20%).

Why Participants Attend

Attendees are divided nearly equally between male (52%) and female (48%) with the largest percentage (86%) coming directly from the Middletown area. In discussing The Knowledge Café, there appears to be two overarching reasons that participants attend. First, many individuals state that they are there to learn about professional social media technologies and applications in general – and how these technologies can help drive their businesses. These individuals tend to attend frequently and they align very well with the original target market segment for The Knowledge Café established at the time that the grant application was filed. Second, other individuals come when they see a specific topic advertised that is of professional and/or personal interest. These individuals may have, for example, a strong interest in improving Facebook skills or are trying to get set up on LinkedIn for business. They select topics that specifically appeal to their needs and/or wants.
Sessions Held During the Inaugural Year

Throughout the inaugural year of operations, The Knowledge Café has offered a wide variety of programming based on a combination of the subject knowledge of the facilitator (the author of this manuscript), the preferences of the community of adult learners participating, and the availability of guest speakers and other personnel to assist in covering the materials. As expected based on the adult learning theories and best practices previously noted from the research by Heaggans (2012), the most popular sessions successfully blended the transfer of new learnings to participants, the opportunity for participants to engage the facilitator and each other in experience-driven discussion, and the ability to work on solving real-world problems relevant to the participants’ own situations. While all sessions were considered highly valuable by participants, certain sessions did stand out as generating the highest level of positive comments during the sessions and also for several weeks thereafter. The “top two” most popular sessions in each category are summarized in Table 3.

Table 3. Most Popular Session Topics.

<table>
<thead>
<tr>
<th>Sessions Involving Predominantly a Lecture-Style Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Social Media 101: Beginning topic scheduled twice as the “starter” sessions for the program.</td>
</tr>
<tr>
<td>• Malcolm Gladwell’s “Outliers” and the implications for social media use in business.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sessions Involving Predominantly Interactive Discussion and Problem Solving</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Facebook Expert Panel Discussion: What works well and what does not work well.</td>
</tr>
<tr>
<td>• Social Media Mini-Sessions: Tools to enhance social media sites.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sessions Involving Knowledge Transfer and Q&amp;A with Guest Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• LinkedIn for Career Development and Business Applications.</td>
</tr>
<tr>
<td>• Building Your Business Through eBay.</td>
</tr>
</tbody>
</table>

Discussion

The inaugural year of operation of The Knowledge Café as a campus-community partnership has been challenging, but has also generated results that exceeded initial expectations.
Value to the Participants

Throughout the sessions of The Knowledge Café, comments were solicited from participants regarding their impressions of the program, specific learnings, and recommendations for future sessions. Opportunities were provided for written feedback, although some participants preferred to sit down and provide their comments in an oral interview format. With over 200 participants during the first year, comments were overwhelmingly positive with many remarks noting the value of the sessions not only for their novelty and technical content, but also for their fostering of valuable networking opportunities between business individuals, university personnel and not-for-profit agency members. Participants also frequently cited the casual, but informative format of the sessions, the ability to interact on topic choices and the knowledge contributed by local guest speakers who provided supplemental subject matter expertise.

Comments regarding the novelty of the sessions were especially gratifying to hear due to the amount of effort placed toward creating interactive learning sessions that were not typical of other adult education programs available within the community. Emphasis on letting participants weigh in on the topics to cover, seeking interactive participation through shared experiences and stories, and encouragement for participants to bring their immediate unsolved problems in social media to the table for discussion all played a role in creating the novel learning experience. These efforts no doubt helped participants to master and retain the concepts presented. As noted by Suzuki,

One of the best and most powerful teaching tools to make something memorable to students is novelty or the element of surprise. Something that is novel or surprising focuses attention, engages emotional systems, and is therefore highly memorable or ‘sticky,’ as neuroscientists like to say (Suzuki & Fitzpatrick, 2015, p. 145).

Verbatim comments written by participants underscored the general feedback received verbally. For example, specific written comments addressed the useful information provided on “LinkedIn,” “Twitter,” “Facebook,” and other more specialized social media platforms. Participants also noted the value of sessions devoted to developing good content for social media sites, the concrete “real world” examples provided for study, and the breadth of expertise brought to sessions via knowledgeable guest speakers.

Regarding areas for improvement, participants would like to see more opportunities for hands-on work to help participants put new knowledge into practice. Participants would also like to see more advanced topics introduced in subsequent years. While they greatly valued the fundamentals explored within the first year, many participants hoped to be able to continue growing their knowledge through additional sessions in the future. Finally, participants thought it would be helpful to offer more duplicate sessions since they were disappointed to miss materials when scheduling conflicts made it impossible to attend.
Value to the Practice of Teaching

In keeping with the goals of establishing a true two-way collaborative partnership between the campus and the community, Miami University Middletown has also benefited from The Knowledge Café. The campus has received a large amount of positive publicity from the program, including articles in the local press. The program also brought numerous people to the campus who had not been there before and many commented positively on the facilities and the other program opportunities that they learned about while on campus. The type of partnership described here broke new ground in terms of how it was established (through a community grant, but with high university involvement) and is already in discussion as a model for future projects.

From the standpoint of interacting with a broad cross-section of industry, government, and not-for-profit agency individuals or a regular basis, the author has gained insights on problems and challenges facing small- to medium-sized business owners that far exceed original expectations. This first-hand knowledge is directly influencing lecture materials and assignments that are being used in senior-level leadership and social media courses. In particular, the clear focus on issues related to contemporary workforces and improving the external marketing of businesses are helping prepare students for their chosen career paths.

One of the greatest learnings was the need to become extremely adept at switching “modes of operation” multiple times within a given session. For example, a single session might start out as a communication of new knowledge (pure teaching mode) before switching to an interactive discussion on applications that participants had seen online (discussion facilitation mode), followed by introducing a structured group assignment to get participants to try new skills before adjourning for the day (encouraging, coaching mode). All of these techniques are part of good teaching practices, but successfully applying them in a flexible manner to address the needs and wants of active adult learners required a good deal of preparation before each session – including the need to anticipate possible directions that a session might take and to have appropriate materials prepared and ready for use as needed.

Launching a Similar Program

Establishing The Knowledge Café was an iterative process that required a great deal of exploration and negotiation between a variety of prospective partners before the concept was refined and the ultimate partnership between Miami University Middletown and the Middletown Community Foundation was realized. The literature provides numerous perspectives on how to approach a process of this type and the information contained therein is highly valuable. In addition, looking at the program from the teaching point of view reveals a set of six steps that can help drive a successful effort.

1. Engage potential campus and community partners on an informal basis and discuss mutually beneficial possibilities before starting any kind of formal process. Be realistic in assessing the teaching skills and preferences that are
likely to be of interest to the community and seek collaborators that are proactive and open to many points of view.

2. Once potential participants are identified, work diligently to understand their needs and wants – allowing these findings to help shape the desired program. Be prepared to move in instructional directions that may be outside of a preferred comfort zone, if it is in the best interests of participants.

3. Be keenly aware of the need for flexibility throughout the program – including opportunities that may only come to light once the basic work is underway. This may mean changing a teaching strategy from straight lecture to participative discussions, incorporating more or less hands-on work and adjusting expectations of what participants are willing to do outside of the formal sessions.

4. Do not “go it alone.” Adult learners appreciate diversity of thought and approach. Seek out guest speakers, people with unusual or contrasting points of view, etc. Run some expert panels to provide a breadth of experience and know-how on tough subjects. Look for opportunities to provide both breadth and depth to the topics covered.

5. Learn to switch seamlessly between teacher and facilitator – the roles overlap, but each has its unique place in providing robust programs for adult learners.

6. Above all, do not be afraid to personally champion the overall effort from start to finish. Successful programs will build their own momentum in the majority of cases, but virtually any program will begin with the nucleus of an idea by one, or at most, a small group of individuals who have a vision of what could be realized.

The importance of the sixth point above cannot be overestimated. Projects like The Knowledge Café depend strongly on having a vision of what can be created and the combination of skills and perseverance necessary to address issues and unforeseen hurdles as they come up. Flexibility (point 3) is also an absolute necessity. To that end, projects of this type are likely to be most successful for instructors that thrive in an environment of high uncertainty and constant change. The combination of dealing with adult learners having widely divergent levels of prior skills and the importance of being able to address real-time problems and issues brought up within the sessions can wreak havoc with carefully outlined lesson plans. For instructors that grasp, and also embrace, the strategies needed to work in this learning environment, projects like The Knowledge Café can be highly positive experiences.

**Future Work**

Given the success of The Knowledge Café to date, there is strong excitement on both sides of the campus-community partnership to see the relationship continue in subsequent years. From a pure research point of view, the first year’s activities were highly experimental and provided valuable input for refining the program in future years. With program logistics fully developed and a refined concept of what all parties expect from the collaboration, it will be important to collect additional quantitative and qualitative data on participation and outcomes. Considering the format and content of The Knowledge Café
sessions, projected upgrades and changes may be broken down for each of the next two years.

**Year Two**

Increasing participant engagement within the sessions is a primary goal for the second year of the program. The intent is to move from a format that involves a majority of presentations with Q&A plus limited participation activities to a format that captures more of the true spirit of a knowledge café as defined by Gurteen (1998). Termed “Studio Workshops,” these sessions will afford participants the opportunity to work collaboratively to share knowledge and solve business problems of mutual interest within the context of The Knowledge Café. Facilitated by brief presentations on business-focused creative tools such as Edward deBono’s *Six Thinking Hats* (1985) plus various “mapping” tools such as process mapping, mind mapping, and customer-journey mapping, participants will use a process known as “adaptive expertise” to reach their business goals (Hatano & Ouro, 2003; Schwartz, Bransford, & Sears, 2005). Adaptive expertise involves individuals who can draw on their knowledge to invent or adapt strategies for solving problems within a specific knowledge domain, and then in an ideal sense, learn to transfer higher-level learning from one domain to another. With suitable facilitation, Studio Workshops should enable participants to better zero in on the concepts that will be most beneficial to their own specific business needs. Thus, year two is anticipated to involve less formal lecturing and more emphasis on collaborative learning moderated and coached by the facilitator.

As this manuscript reaches print, “year two” activities are well underway and results to date reflect positive reactions by the majority of participants to the program enhancements noted above. As The Knowledge Café has moved forward into more complex topics, attendance has fallen slightly (ca. about 10%), but a dedicated group of regular attendees has also emerged and is working hard to build on the concepts mastered during the first year of operation. Notably, members of this group are beginning to volunteer to lead or co-lead sessions as a way of bringing their personal expertise into the mix. This level of engagement is also seen through the Studio Workshops where attendees are demonstrating a strong desire to collaborate on more difficult social media projects.

As “year two” moves forward, student engagement is still relatively low, but there are important signs that this is changing. (Recall that university students were not the original target market for The Knowledge Café.) Several instructors on campus, noting the value of the materials presented, offer their student extra credit to attend sessions and to follow up by describing their learnings in short written essays. Building on the success of these initial efforts to engage students will be important in future years for The Knowledge Café as is noted below.

**Year Three and Beyond**

Thinking beyond the second year, efforts will be undertaken to enhance The Knowledge Café by incorporating broader campus participation through more traditional course-
based community service learning. Although details remain to be worked out, it is envisioned that a campus-based partnership between two or more instructors of courses in business, communications and/or computer science could add substantial value to The Knowledge Café by engaging their students as guest speakers on relevant technical and business topics, service-learning partners for the business participants in attendance, or even as resources to the Studio Workshop sessions proposed in year two. Such an effort has tremendous potential for both sides of a partnership. Students would be exposed to a large number of local business individuals who are diligently working to expand in the local economy. Business individuals would benefit from increased access to students who are currently studying the latest technical content in social media, business communications, and general good business practices.

Currently, The Knowledge Café has operated exclusively as a campus-community partnership within a small- to medium-sized ex-manufacturing city of about 50,000 people that is in the process of reinventing itself as a technology center. Within this environment, all parties agree that the partnership has been very successful. It would be very interesting to apply this same partnership model to either smaller or larger venues. For example, in smaller venues such as small college towns, there may be fewer alternative avenues for residents to explore learning opportunities like those provided through The Knowledge Café. While this scenario would be predicted to enhance attendance and engagement, further research is needed for confirmation. On the other hand, in larger venues such as major cities and/or their surrounding suburban communities, additional sources of readily available expertise might be predicted to make partnerships like The Knowledge Café harder to establish. This latter point is currently under investigation by the author through a university grant to establish a separate branch of The Knowledge Café in a nearby suburban area that contains a higher concentration of larger businesses and industries.

The Knowledge Café is likely to be in constant evolution to meet the changing needs of both the campus and the community. What has been established to date, however, is a mechanism or process for collaborative learning that is working well within the local environment. To the extent that all partners can keep a strong focus on maintaining this mutual benefit, the success of the Knowledge Café is likely to continue to build.

Acknowledgments

The work described in this paper was supported by a grant from the Middletown [Ohio] Community Foundation, with additional support by Miami University Middletown and the Center for Teaching and Learning on the Miami University Middletown Campus.

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