

1-2013

More Questions Than Answers: Assessing the Impact of Online Social Networking on a Service-Learning Project

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Recommended Citation

Moeller, Mary R. and Nagy, Dianne (2013) "More Questions Than Answers: Assessing the Impact of Online Social Networking on a Service-Learning Project," *International Journal for the Scholarship of Teaching and Learning*: Vol. 7: No. 1, Article 12.

Available at: <https://doi.org/10.20429/ijstl.2013.070112>

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Keywords

ervice-learning, Diversity, Teacher candidates, E-mentoring, Social media

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This article details the evolution and results of a service-learning project designed to extend cross-cultural relationships via online social networking between students at a U.S. Bureau of Indian Education boarding school and teacher candidates in a required diversity course. The goals for the partnership included helping Native American students identify personal strengths through mentoring relationships, and encouraging teacher education candidates to develop their intercultural communication skills. We assessed the project using qualitative and quantitative measures: identification of significant themes emerging from teacher candidates' reflections; comparison of recurring reflection themes to stages of Bennett's Developmental Model of Intercultural Sensitivity; and statistical analysis of candidate responses on Cushner's Inventory of Cross-Cultural Sensitivity. The analysis reveals challenges and opportunities for student and candidate learning and stimulates questions that shape future directions for service-learning in an increasingly digitized world.

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Introduction

Connection is what people crave; it is what makes us human. Maslow (1954) illustrates the importance of relationships with others in a "hierarchy of needs" where the need to belong and to be loved is second only to physiological and safety needs. As social beings, we seek the company of others to satisfy these innate desires. Today, online social networking sites present new venues for personal connection and relationships.

The network of the World Wide Web and the tools of social media enable people to connect across the globe like never before. A Nielsen study revealed that, in 2009, an estimated two-thirds of Internet users visited social networking sites, 100 million YouTube videos were viewed every day, and there was a 1382% growth rate in Twitter users between January and February. The study also reported that the number of people using social networking sites on mobile devices jumped from 6.4 million in July of 2008 to 18.3 million in July of 2009 (Nielsen, 2010).

High school students are one demographic heavily involved in online communications. A study by the Kaiser Family Foundation found that online social networking sites captivate a significant portion of the time and attention of P-12 students, ranking as the most popular form of computer use. The study revealed that over half of 15- to 18-year olds use online social networking sites, while almost half visit these sites daily (Kaiser, 2010).

College students also regularly invest their time in the use of social networking sites (Heiberger & Harper, 2008; Ellison, Steinfeld, & Lampe, 2007). The Higher Education Research Institute's (HERI) *Your First College Year 2007* survey revealed that most college freshmen reported spending "between one and five hours on online social network websites in a typical week" with almost 10 percent spending in excess of ten hours a week on these sites; 94 percent of students accessed them weekly (HERI, 2007).

The volume and variety of young people interacting online render it a rich environment for collaboration and civic engagement.¹ Recognizing the potential for social media to create active, engaged citizens, the Corporation for National and Community Service sponsored a grant competition to promote the engagement of college students in service through social media (CNCS, 2008). The Midwest Consortium for Service-Learning in Higher Education was awarded such a grant dedicated primarily to disbursing small subgrants to seed innovative projects. Each project developed a website on Ning, a platform for creating social networking websites. A social network site is defined as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (p. 1, boyd & Ellison, 2007). Ning allows users to create a customized community website with full control over membership and privacy levels.

This article details the evolution and results of one such project and explores the following questions through qualitative and quantitative data:

1. Is online social networking an effective tool to build mentoring relationships between service-learning participants from diverse backgrounds?
2. Do online interactions contribute to the development of intercultural sensitivity?
3. What benefits and challenges emerge from using this high-tech medium in a traditionally face-to-face pedagogy?

Context

A young Native American student's cell phone chat, twenty-first century technology in action, provided an immediate link to traditional cultural knowledge. The elder at the other end of the line listened to the girl's request: "I'm with these people at a workshop and they're looking for some words in our language to describe the field of education as a valuable gift, something important to life." After listening for a moment, the young woman jotted two words on a dinner napkin; her friends at the table nodded their agreement. The Lakota phrase *wiconi waste* (pronounced wee-choh-nee-wahsh-day) or "the good life" thus

became the foundation of our project title. [We later changed the spelling from *waste* to *washte* to avoid confusion.]

Pre-service teachers enrolled in a diversity course at the university will be referred to as candidates; their instructors will be referred to as instructors. *Wiconi Washte: Education* began as a workshop created in 2009 to serve the needs of two populations: high school freshmen from a U. S. Bureau of Indian Education boarding school and teacher candidates enrolled in a required diversity course at our Midwestern university. The workshop introduces high school freshmen to the career of teaching and helps them explore and celebrate their individual abilities while teacher candidates develop their skills working with diverse students. The workshop is part of a larger Success Academy begun in 2000 at the request of administrators seeking ways to retain more freshmen at their boarding school. Located just twenty-five miles south of our campus, the boarding school serves approximately three hundred 9-12th-grade students from approximately sixty different native tribes across the country (Lee, 2007). Each spring semester, a cohort of these students visits our campus to attend career exploration workshops hosted by the university's colleges. Administrators from both institutions designed the academy for mutual benefits; the program is intended to help students prepare for and succeed in college and to foster a campus culture that promotes such success (Lee, 2007).

While our state's population is comprised of 10% Native peoples, our university diversity officer states that student enrollment includes about 1% Native American students, (J. Nolan-Andrino, personal communication, February 6, 2012). Because we draw most of our university students from small towns and farming communities in the region, we comprise a relatively homogenous group of Caucasians from northern European descent. Due to the rural nature and relatively low-income of this population, most of our teacher candidates have had limited opportunities to interact with diverse populations, and few have travelled to places where they might encounter people of different ethnicities. This lack of exposure to diversity is particularly troublesome for our candidates because it may limit their effectiveness in communicating and understanding their future students from diverse backgrounds (Cushner, 2009).

A Human Relations course, required in the first or second semester of our three-semester teacher education program, is the primary course where candidates focus on understanding pluralistic societies, cultural perspectives, the impact of biases and stereotypes, and ways to engage various groups of students. In this course, candidates learn that diversity is broadly defined to include such qualities as socioeconomic status, religion, sexual orientation, ethnicity, race, geographic region, language, exceptionalities, and gender. Given the course goals, our programmatic need for more interaction with diverse student populations (NCATE, 2008), and the need for the Native American high school students to have college students as role models (Lee, personal communication, March 8, 2009), having teacher candidates in the Human Relations course develop and host Success Academy workshops seemed like a perfect fit.

Participants

To distinguish between the different groups of participants involved in the ensuing collaboration, Native Americans enrolled at the boarding school will be referred to as students; their teachers will be referred to as teachers. Pre-service teachers enrolled in the Human Relations course will be referred to as candidates; their instructors will be referred to as instructors.

During two consecutive semesters of the Human Relations course, 110 candidates participated in the workshops and wrote about their perceptions of course experiences. These reflections were collected by two instructors of two sections of the course and were used as data for purposes of this study. Candidates in this course are predominantly white and female; they are the traditional ages of college sophomores and juniors.

Also involved in the project were students enrolled in one section of the boarding school's technology course during two consecutive semesters. The number enrolled ranged between nineteen and twenty-two. Their teacher did not require these students to communicate with the candidates, but presented the project as an opportunity to showcase their work. We learned through their teacher that the students appreciated the website; however, any further information from their perspective was beyond the scope of our project.

Process

In the spring of 2009, teacher candidates in four sections of the Human Relations course hosted five workshops for the boarding school students. To prepare the candidates for this experience, we explained that the goals of the workshops were to encourage Native American students to consider the value of higher education in general, and the teaching profession in particular; to help these students identify personal strengths through a multiple intelligences test; and to give candidates an opportunity to develop their own interpersonal communication skills, specifically in working with a diverse student population. We also previewed the workshop agenda (which included formal learning, self-exploration, creative expression and socializingⁱⁱ) and defined our expectations for how students and candidates would interact during the two-hour face-to-face session. When the candidates evaluated their workshop experiences, they expressed a strong desire to interact for a longer time. They agreed that one afternoon did not provide enough time for a relationship to develop: "We need more time to really get to know these students, to learn from them, and to develop our communication skills." In response, we created a website that allowed us to move some of the original workshop goals to an online environment and extended opportunities for mentoring relationships to evolve between candidates and students.

Over the summer, the process of planning the website and securing the necessary permissionsⁱⁱ strengthened our teacher education department's partnership with the boarding school and stimulated new opportunities for collaboration and engagement, including four teacher education faculty members attending the school's fall teacher in-service seminar and candidates visiting the school's technology class. The technology teacher served as our primary contact at the school, and she invited us to visit her class. Five groups of 15-18 candidates each spent one hour, meeting, engaging and observing students in the technology course that provides the bulk of their limited computer accessⁱⁱⁱ.

Collaborating with the boarding school technology teacher connected our online networking goals to the goals of the technology course and to student needs. We valued these face-to-

face encounters between candidates and students as a way to jump-start online relationships, and we encouraged participants to discuss opportunities to reconnect with each other in cyberspace. As the students created movies and worked with graphic images in their class, the website served as a gallery for displaying their work, and the candidates served as an interested audience and appreciative critics. In their face-to-face meetings with the students, candidates expressed their positive reactions to the quality of the work and technical skills displayed on the site.

During one of the first sessions of the Human Relations class, we introduced the website to the candidates with instructions on how to join the private network. Candidates were instructed to create a profile by uploading a picture. Although the website began filling up with video clips and graphics from students, our candidates were slow to upload their profiles and pictures. We assumed that the face-to-face meetings and opportunities to reconnect with students online would intrinsically motivate our candidates and we did not stress extrinsic motivators such as academic credit and deadlines. The website development was an exploratory activity and without the prompting of well-structured course assignments early in the semester, many candidates postponed and even neglected to access the website. As a result, our momentum faltered and candidates did not engage in robust online exchanges during the fall semester.

Recognizing this deficiency, we modified our course requirements in the spring semester, assigning more academic credit and deadlines to the requirement of uploading a profile and picture. Candidates were given two weeks to complete this initial step to become members of the network; most complied with this requirement. We also added a small-group assignment for the candidates to produce a two-minute commercial promoting the teaching profession. We uploaded these videos to the website and showed them to the technology class students in our face-to-face meetings. We again asked candidates to post comments to the students and to engage them in conversation. Our expectation was that those cyber conversations would help us reach our project goals of encouraging the students to consider pursuing higher education and providing candidates with opportunities to practice interpersonal communication skills with a diverse population. We gave the candidates an assignment to post comments to the students after their visits to the technology course, believing that the face-to-face encounters would facilitate online responses. Candidates were instructed to monitor the website for materials uploaded by the students and to use the knowledge gained from their visits to spark a conversation. Candidates were given four weeks to post a comment to earn a small amount of academic credit. By May 2010, the website had a total of 146 members from both semesters; eight observers and instructors are not included in the count. Table 1 illustrates the number and types of website activity of both students and candidates. The term “*posts*” indicates written comments uploaded to the website.

Table 1. Website Activity by Participant Type

**Boarding School Students
& University Native American
Club Members**

Candidates

37 student members	102 candidate members
7 university NA Club Members	
335 photos and videos uploaded	45 photos and videos uploaded
19 personalized front pages	20 personalized pages
27 posts	13 posts
Postings to candidates:1	Postings to students:4

After completing the assessments described below, we developed plans over the summer with a different teacher from the boarding school to use the website as a platform for a common-read book discussion between her students and our candidates. Several weeks into that fall semester plan, staffing changes prevented us from completing the literacy project or from using the website again.

Assessment

We evaluated the *Wiconi Washte: Education* project from multiple perspectives, including both formative and summative assessments: (1) pre- and post-experience candidate survey and reflections, (2) focused interviews with individual candidates, (3) taped interviews with small groups of candidates after face-to-face meetings with students, (4) a teacher survey, (5) teacher comments, (6) discussion among instructors following class discussions on the project, and (7) scrutiny of website usage. Analyzing the results of these evaluations in the context of a literature review enables us to assess our relative level of success in achieving our two primary goals: developing mentoring relationships and enhancing candidates' intercultural sensitivity.

The teacher survey and teacher comments (4 and 5 above) helped us evaluate the effectiveness of the service-learning partnership in terms of meeting the needs of her technology class students and of communicating clearly. The teacher indicated that her students appreciated the experience and enjoyed meeting with the candidates when they came to the school. She also noted an increase in student confidence and self-efficacy as a project result. Surveying the students directly was beyond the scope of this study.

Developing Mentoring Relationships

We created the website to provide additional opportunities for students and candidates to connect and interact. The abundance of graphics and videos posted on the site presented promising potential for online communication to emerge. The profiles uploaded by students often included sports settings, pictures of family and friends with formal, informal, and even silly expressions. From our perspective as instructors, conditions were ripe for candidates to make connections, relate common interests, and strike up conversations that could lead to genuine mentoring between them and students in this online setting. Candidates were familiar with the process of uploading graphics. We encouraged candidates to personalize their own pages to make them more attractive and engaging. We attached a small number of points to this assignment, believing that the online activity itself provided inherent

motivation for candidates to respond. While a few of our candidates responded positively to this opportunity to connect to students, most did not. Although class discussions and informal conversations often focused on the candidates' perceived barriers to communication, the few successful communications were highlighted in class as models. We showed the conversation in class and analyzed it in terms of successful communication and engagement. Candidates who attempted to befriend the students were not persistent enough to develop conversations beyond the surface level. For example, one candidate posted the following inquiry to a student: "your pictures look like fun! do you like to ski?" The response was brief: "it was just a skool trip but yeah i geuss it was fun..." End of conversation. The same candidate attempted another interchange by writing: "hi Leah! I am from [your hometown] too! How do you like being here? (personally, I think [our hometown] is way better)! You probably didn't meet me, but I am one of the university students who helped when you guys came to visit." No response was returned.

What could account for this lack of engagement? Studies on the emerging practice of e-mentoring assure us that developing online mentoring relationships is, in fact, possible. E-mentoring is a relatively new approach to the well-established practice of matching experienced and inexperienced people for the purpose of training. Our website concept and design aligns with the following definition of e-mentoring by Single and Muller (2001):

[E-mentoring is] a relationship that is established between a more senior/experienced individual (the mentor) and a lesser skilled or experienced individual (the protégé), primarily using electronic communications, that is intended to develop to grow the skills, knowledge and confidence and cultural understanding of the protégé to help him or her succeed, while also assisting in the development of the mentor (p. 108).

With candidates as mentors, we had hoped to enhance student understanding of the world of higher education and prompt them to consider careers in education. In the process, the mentors would gain insights into the lives of students and would develop their intercultural communication skills. Through the online service-learning relationship, we intended to benefit both the mentor and protégé by providing a platform for shared learning and growth that was both boundary-less and egalitarian (Bierema & Merriam, 2002), offering the logistical advantage of being able to communicate without regard to time and space (Shrestha et al., 2009).

E-mentoring offers the potential of leveling status between partners (Shrestha et al., 2009; Single & Single, 2005) and minimizing some of the power dynamics that typically characterize mentoring relationships (Bierema & Merriam, 2002). However, our project design, combining face-to-face meetings with online communication, prevented any masking of status differences. In addition, the personal profiles uploaded by participants visually reinforced their group identity, further defining their status. While our design did not allow for anonymity, the advantage of beginning the relationship with a face-to-face connection appeared to outweigh the possible increase in egalitarianism. Shrestha et al. (2009) suggested that some mentors may perform more skillfully and comfortably in face-to-face contexts, while Bierema and Merriam (2002) reported that parties who have never met in person find it difficult to achieve "virtual intimacy." We anticipated the addition of individual profiles would offer a further advantage: helping candidates relate to the students

by looking at their pictures. Shih (2009) noted the importance of informal glimpses into the lives of others, such as seeing someone's dog, for getting to know people.

Candidates' comments in class, in informal conversations with instructors before and after class, and in their written reflections clearly indicated that they enjoyed viewing the student profiles. This appreciation, however, did not translate into attempts to mentor the students. Conversations were not spontaneous on the website, and increasing encouragement from the instructors failed to stimulate more engagement. This lack of interaction seems to support Single and Single's (2005) finding that the online environment can exacerbate some of the challenges that hamper traditional mentoring. In face-to-face meetings, the physical presence of the other prods the mentor to action, and the mentee is likely to respond. A virtual presence does not appear to have the same catalytic effect.

The limited online interaction between the two communities also supports the concept of "frail commitments" as characteristic of virtual relationships, given the ease with which they can be initiated or ended (Bierema & Merriam, 2002). It is possible that the one-semester length of the project during the fall and spring semester iterations exacerbated this frailty of commitment. Candidates had approximately 12-weeks to complete their service-learning hours; unless they were placed at the boarding school for another education course later in their program, it was unlikely that they would be able to continue any mentoring relationship that was initiated. Did the short duration of our project contribute to an ambivalent passivity for both the mentor and protégé? Did this lack of a permanent relationship contribute to mistrust between groups?

Candidate perspectives. We collected reflections from 110 candidates during the two semesters of the website project. Candidates wrote in response to the following open-ended prompts about their perceptions of using the website as a communications tool with boarding school students.

1. What do you believe are the possibilities for using online social networking to communicate with the [boarding school] students?
2. What do you believe are the barriers for using online social networking to communicate with the [boarding school] students?

In our weekly instructor meetings, we used information gathered from class discussions and candidates' reflections to assess the website project.

The difficulty of establishing a trusting relationship online was a recurring theme in candidate reflections. Candidates noted the "non-realistic qualities that are a part of the Internet," and the "lack of intimacy" or the loss of credibility because of the online medium, rather than a "real life, reassuring, substantial relationship wherein both can learn from one another" in a face-to-face exchange. One candidate remarked that, "If I were a student [at this boarding school], I would find it difficult to be able to be even remotely open with a stranger...[there is a] need for a certain level of trust." Our candidates also lacked confidence in the trustworthiness of this medium for conveying a true sense of who the communicators really are. They feared that participants "might not ever truly have a sense of the person they are" because it is "difficult to access anything beyond surface level information" or "to ask for advice of someone you don't know or trust." Candidates expressed reservations about miscommunication between parties and worried about how

their friendly overtures might be interpreted: "think about the awkwardness that this could cause for the students. If we are trying to be friendly and adding random people, will they think we are creepy or too friendly?" Some candidates expressed concerns about their own sense of privacy, their own perceptions of social networking sites: "[There] needs to be more person-to-person interaction to create a comfortable atmosphere online...[I] hesitate to "friend" someone on a social networking site unless I knew them or had a friend in common; it's a sense of privacy and protection for me." Some candidates perceived e-mentoring as awkward, finding it "undesirable" as a way to meet new people. How can we reconcile this lack of trust and confidence in the medium of online social networking with its prolific use?

Other candidates challenged the concept of using a social networking site in an academic context: "Things such as Facebook are just used so much more that it becomes pointless in our minds to access another social networking site...[we] do not have time...[we] do not want to be involved in another social networking site." Some dismissed outright the possibility of establishing another online relationship: "For most people, at least for me, a successful relationship involves getting to know each other face to face not through an Internet site." "With limited time available to be on the computer, I don't think I would personally invest time into yet another computer addiction like another social network. I am on Facebook because my friends and family are on there...Simply joining a social network isn't going to spark friendships...Relationships don't spontaneously happen on other social networks like Facebook." Poor writing ability was also noted as an obstacle to such communication. If the students lack writing skills, they might hesitate to expose this deficiency in public; in practice, candidates might react with similar hesitation.

Instructor observations. One of the instructors conducted taped interviews of three small group discussions with fifteen candidates immediately following the face-to-face visits to the boarding school. The following open-ended questions served as discussion prompts:

1. What did you observe about Native American students today?
2. What did you do or say that helped you engage with the students today?
3. What did you do or say that was not as effective in helping you engage with students today?

Notes from these interviews were reviewed during the weekly instructor planning meetings for the course.

In observing our candidates in both face-to-face encounters and in the online environment, we noted evidence of a passive commitment to create relationships. Candidates were often hesitant to meet and greet. They appeared to lack confidence. While we anticipated that the students would be shy and perhaps even intimidated by the presence of college students, we hoped that our candidates would more readily and comfortably engage and interact. During the workshops and the field trips to the school, some candidates required overt encouragement and guidance, but the majority did make attempts to get to know the students. For the face-to-face encounters, we intentionally modeled and taught techniques for engagement. Still, some candidates hugged the walls during the visits to the school technology classroom while others were content to observe from the security of a chair in the back. Several candidates appeared to find a comfort zone by sitting next to one student, ignoring directions from the teacher to circulate among all the students.

Shrestha et al. (2009) noted that an impersonal setting, without the scrutiny that comes from face-to-face encounters, might be beneficial for both mentees and mentors. While we hoped that the online environment would improve candidates' abilities to converse with comfort and ease, the final website tally reveals that most candidates saw the online environment as a wall, further impeding the development of relationships. We did not intentionally instruct candidates in online communication strategies other than to remind them of appropriate use of language. Did the virtual world of online social networking create a sense of remoteness for candidates that allowed even more of them to hug the online walls, just as some did in the classroom encounters? Comments such as, "Technology and the Internet cannot facilitate a true relationship" and "[This site is] not valuable for 'affective' tutoring relationships" were common in the reflections, indicating that many candidates saw no reason to attempt online conversations.

Yet, despite claims from the candidates that "Tutoring requires rapport, face-to-face, direct contact," some of them were equally disengaged during classroom visits. Rationalization of motive might be serving as a defense mechanism here. Cushner and Brislin's (1996) framework for understanding cross-cultural interactions indicates that a certain level of anxiety and discomfort often accompanies individuals encountering new experiences in diverse settings.

Increasing Intercultural Sensitivity

The second of our two primary goals for this project was to enhance candidates' intercultural sensitivity. This goal was assessed by analyzing candidates' reflections and by implementing a pre- post-test. Assessment descriptions and results are detailed below.

Developmental Model of Intercultural Sensitivity. In light of their reluctance to engage with the Native American students on the website and during classroom visits, we analyzed candidates' reflections through the lens of Bennett's Developmental Model of Intercultural Sensitivity (DMIS) (1986, 1993) to assess the relative levels of intercultural sensitivity they revealed. The instructors as researchers used open perception coding to reveal themes related to the DMIS stages (Miles & Huberman, 1994). Due to the nature of qualitative study, the researchers were intentionally aware of their assumptions and biases (Patton, 2002).

Bennett's model aligns with our constructivist course goal of developing capacity to accommodate cultural difference (1993). The DMIS identifies six stages of development across two sides of a continuum that correspond to the way individuals experience difference (Bennett, 1986). Three ethnocentric stages include denial of, defense against, and minimization of difference; ethnorelative stages include acceptance of, adaptation to, and integration of difference. We applied this theoretical framework to the candidates' reflections by identifying phrases and sentences that corresponded to Bennett's examples of what people say at various stages (1986).

Analysis of the candidates' reflections through the lens of the DMIS continuum revealed a broad range of intercultural sensitivity. The representative excerpts included here correspond to themes in each of the DMIS stages and illustrate the full range of candidate thinking. Some candidates appeared to operate at the ethnocentric *Defense* stage, characterized by the dualistic thinking and negative stereotyping shared in this observation:

These students have more chances at getting a higher education and I sometimes feel that they waste that opportunity. It was hard for me to watch videos of the students showing me what they did on the weekends and thinking of thousands of other students who would love the chance to go to school...and get paid. It [was] hard for me to think of those students with a 300 cellphone with a 200 iPod and telling me he was from Pine Ridge where they struggle to buy meals.

This expression of firmly held preconceived ideas and stereotyping assumptions shows evidence of black/white thinking.

Candidates' reflections consistent with rhetoric expressed during the ethnocentric stage of *Minimization* include "Having student up loading their work shows me that they are just like my friends and I." Individuals at this stage of intercultural sensitivity believe that people are essentially the same and "like me." This tendency to ignore differences diminishes the importance of recognizing individual needs. To progress towards greater intercultural sensitivity, candidates need to develop cultural self-awareness.

The ability to recognize cultural differences in values and behavior is a benchmark of individuals thinking at the ethnorelative stage of *Acceptance*. Evidence of a candidate operating at this level emerges in this reflection:

Every student is different, especially when it comes to personal learning, needs and interests. As a teacher, we need to accommodate all of these...what makes me think of this is everybody's display picture. Some people have a picture of themselves or with some friends, while others had pictures of art or other images...Some people provided an ample amount of information, whereas others did minimal. The website is also an opportunity for us teachers to learn about diversity.

Other reflections reveal similar levels of intercultural sensitivity:

The different backgrounds allowed us and the students to pick their own color and design scheme, personalizing it for the single person...the website is an opportunity for us teachers to see how everybody is different.

[It was] very interesting to see people of a different culture's artistic ways.

A website like that also allows the students to express themselves individually; every student is different...As a teacher, we need to accommodate all of these things and be aware of them.

Analysis of reflections indicates that the exchange of videos and personal photos on the Wiconi Washte website helped dispel some of the narrow, stereotypical views that many have of Native Americans today. Candidates looked at the diverse range of FIS images and saw for themselves the many types of personalities and backgrounds represented. Candidates were able to identify diversity within the boarding school student body. The following observation represents such a perspective:

I noticed photos of traditional dress next to photos of friends in hip hop styles; there was no one typical preference... the profiles and pictures uploaded depicted a wide-ranging variety of lifestyles and interests; the imagery included scenes of Western style rodeo, graphic Gothic masks, NBA basketball, NFL football, prom, traditional Indian pow-wows, urban, rural and the whole gamut of takeoffs on popular culture. In short, the FIS students presented themselves in ways typical of many non-Native American teenagers.

Finally, in Bennett's ethnorelative stage of *Adaptation*, a genuine sense of empathy emerges. This perspective is represented in the following candidate reflection:

I also learned that some of these students don't even know where their parents are and the Indian School is the only real home they have. It was such a shock to me to hear this because I could never imagine living at high school.

Analysis of candidate reflections through the lens of Bennett's DMIS scale revealed that this pool of seemingly homogeneous candidates, at the same point in their pre-service education, displayed markedly different and broadly ranging levels of intercultural sensitivity. It is important for instructors to be aware of such significant variation as they prepare course materials and discussion questions.

To assess whether or not these candidates revealed any changes or development in intercultural sensitivity as a result of this project, we applied the lens of another theoretical framework.

Inventory of Cross-Cultural Sensitivity. Our candidates took Cushner's (1986) Inventory of Cross-Cultural Sensitivity at the beginning and end of the fall 2009 semester. Pre- post-test scores were matched for each participant and analyzed with a paired-sample *t* test to identify changes in cross-cultural sensitivity. Although 76 candidates enrolled in the diversity classes took the pre-test, only 68 completed the post-test. After eliminating tests with blanks and answers out of range, 56 participants remained. The demographics of the sample were as follows:

- Gender: 41 Female, 13 Male, 2 No response
- Race/ethnicity: 49 White, 1 Asian, 2 Other, 4 No response
- Plans after graduation: 43 Teach, 4 Graduate school, 2 Other employment, 7 Unsure

The participants were representative of other candidates at our university.

The Inventory of Cross-Cultural Sensitivity (ICCS) consists of 32 statements with which participants are asked to rate their level of agreement or disagreement, ranging from (1) strongly disagree to (6) strongly agree. The instrument is designed to provide dimensional scores for individuals on each of the following subscales: cultural integration, behavior, intellectual interaction, attitude toward others, and empathy. After adjusting the values of the 17 reverse score items, individuals can be ranked relative to others from high to low levels of cross-cultural sensitivity (the higher the score, the more sensitive an individual is presumed to be). Participants completed a slightly revised version of the ICCS that was

appended to a shorter general survey about students' sense of self-efficacy and school climate.

A series of paired-sample *t* tests were calculated to compare mean pre-test scores with mean post-test scores on each of the five subscales. As illustrated in Table 2, no significant difference was found between pre- and post-test scores for any of the dimensions.

Table 2. Paired-Sample *t* Test Comparisons of Cultural Sensitivity at the beginning and end of the semester

Scale	Pre-Test	Post Test	<i>t</i> (55)	Sig
	Mean (SD)	Mean (SD)		
Cultural Integration	31.66 (6.65)	30.57 (6.95)	1.536	.130
Behavior	26.82 (3.04)	26.80 (2.77)	.044	.965
Intellectual Interaction	24.77 (3.33)	24.50 (3.37)	.624	.535
Attitude Toward Others	23.59 (3.79)	23.95 (3.60)	-.771	.444
Empathy	23.84 (2.73)	23.88 (2.97)	-.079	.937

Figure 1 depicts the absence of discernible differences between the mean score per item for each ICCS subscale in pre- and post-test scores.

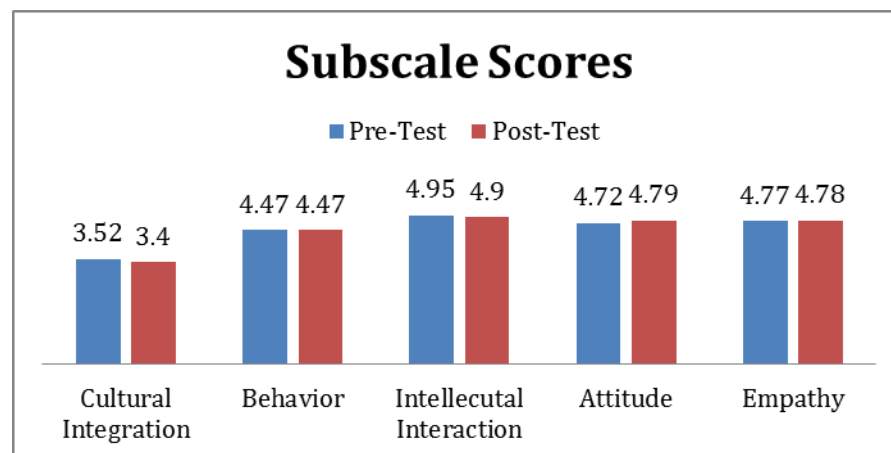


Figure 1. Mean scores per item for teacher education candidates in fall 2009

To test the subscales, a Pearson correlation coefficient was calculated for the relationship between the scores for items in each of the subscales. The correlations found were neither significant nor strong, and some items in the same subscale were even negatively correlated. [See Appendix A for the correlation matrices.] The fact that the items for each subscale did not exhibit linear relationships suggests that the constructs being measured were not well defined. The results may also indicate that the ICCS is not an appropriate tool to measure the intercultural sensitivity of a population that is as markedly homogeneous as our candidates.

The strictly quantitative approach of the pre- post-test design does not reveal nuances of candidate learning. We speculate that candidate responses on the pre-test may have been inflated as a result of ignorance and inexperience (Gay & Airasian, 2003). Lower scores on the post-test may actually indicate that a student is more self-aware and culturally sensitive at the end of the semester, rather than the reverse. Candidates might have been more confident before their diversity experiences since we, as instructors, noted how challenging interacting face-to-face at this high school proved to be.

The qualitative methods of this study (interviews with candidates, observation of interactions, and content analysis of reflective writing) revealed that the exchange of videos and personal photos on the *Wiconi Washte: Education* website appeared to help dispel some of the narrow, stereotypical views that many have of Native Americans today. Candidates recognized that the profiles and pictures uploaded depicted a wide-ranging variety of lifestyles and interests; the imagery included scenes of Western-style rodeo, graphic Gothic masks, NBA basketball, NFL football, prom, traditional Native American pow-wows, urban and rural environments, and a broad spectrum of popular culture. Evidence of learning about diversity was revealed in candidate observations about the wide range of student self-expression and the need for teachers to be aware of and accommodate such differences.

This ability to recognize diversity within the boarding school's student body is perhaps one of the most significant benefits candidates received from their experience. Research reports that the vast majority of Americans have narrow, stereotypical views of modern Native Americans: either as desperately poor or newly rich from casino profits (Doble & Yarrow, 2007). The project appears to have positively impacted candidate growth in this important area of professional attributes regarding diversity awareness.

Implications and Areas for Further Study

This study reaffirms the fact that the development of cross-cultural sensitivity is a difficult concept to measure. Given the complexity of the subject matter, research in this area requires a finely-honed tool; one that is able to elicit honest, rather than socially acceptable, responses. Enrollment in one course, in the mix of students' curricular and co-curricular experiences, is unlikely to significantly influence attitudes and behavior. Changes in nebulous developmental constructs such as cross-cultural sensitivity are more likely to manifest themselves in a longitudinal study.

The challenge of creating genuine online relationships between service-learning participants requires further exploration as we consider the value and future use of the *Wiconi Washte: Education* website. In evaluating low levels of candidate participation on the website, we recognize that programmatic structural changes are necessary. For example, extending the online service-learning experience beyond the limits of one semester would provide more time for relationships and trust to develop. Designating online activity as course requirements and spending more class time evaluating online interactions might elevate the value candidates place on such work. Single et al. (2005) identified coaching as a valuable tool for increasing participation. The National Mentoring Partnership (2010) suggested that such coaching should include regular email reminders to stay in touch with mentees and to encourage and motivate participants. While we discussed the development of the website in class and verbally encouraged candidate participation, we did not use e-mail to remind

candidates of the class expectations while they were online. Other strategies need to be explored to strengthen weak relationships between participants and to coax the involvement of casual observers and those who hug the virtual walls of the website.

What are the possibilities for enabling electronic networks to truly connect two populations? One future direction to consider emerges from the success experienced by online book communities (Peowski, 2010). Public libraries with websites for book reviews created by teens draw spontaneous online contributions from this age group. Would it be possible to have Native American students and candidates form mentoring relationships while discussing books? Could the content of the book be the shared experience that appears to be missing from our current efforts? Although we had an agreement to establish an online book community during the subsequent semester, staffing changes prevented our ability to continue with the website project.

In addition, how might the design and openness of the website encourage more effective interactions between mentor and mentee? O'Neill (2004) suggested the possibility of increasing social capital through a group style of mentoring or "mentoring in the open" (p. 179). This design pools the knowledge and skills of participants in an open forum wherein responses are accessible to all. Research on learning communities describes several types of knowledge necessary for teacher development, one of which is "knowledge *in practice*" (Hammersness, Darling-Hammond, & Bransford, 2005, p. 382). Would there be opportunities within an open website for sharing expertise between teacher educators and candidates in the context of specific learning situations?

In a literary discussion, posting comments on the wall or on a personal page might nurture a sense of shared understanding and growth. Is it possible to create and nurture communities of practice or socially supported learning through e-mentoring between diverse service-learning partners in this type of structured environment? Would this open group-oriented process of sharing information be more culturally appropriate for certain populations and discourage the participation of others?

Single and Single (2005) suggested that while some people will engage in discussions, others will "lurk," reading but not responding to the posts. Yet, as Banks et al. (2005) noted, simply experiencing diverse communities does not necessarily drive learning; transformative understanding comes through observing and then reflecting. As candidates examined their assumptions and biases on the website, what was the value in that level of participation?

This investigation of the efficacy and appropriate use of an online social networking website to develop, foster, and maintain relationships between service-learning partners produced more questions than answers. Research on educational questions, in general, are often complex and require interpretation and discovery as methods of inquiry (Cochran-Smith, 2006). Although such qualitative research methods will lend insight into case studies, the findings will not be generalizable to all contexts (Patton, 1980). While the field of e-mentoring is becoming well established, connecting service-learning partners through online media is a relatively new approach and an area ripe for further research (Perren, 2003; Single & Single, 2005).

As Web 2.0 tools continue to develop, so too will opportunities to explore online social networking as a means of nurturing service-learning partnerships. The extent to which such efforts are successful will depend on several factors above and beyond the protocols already established for face-to-face partnerships. This study concludes with a list of recommendations for future e-mentoring practice and study.

- Guidelines for face-to-face mentoring relationships are valuable in e-mentoring contexts as well. Specifically, academic and/or social purposes need to be clearly established and communicated for the relationships to be valued and nurtured.
- The impact of the limited duration of semester-long projects should be investigated, particularly in the context of developing relationships in an online social network.
- Some participants indicated confusion over the concept of having an online *social* networking site that also has *academic* purposes. Further study should explore how to effectively link the academic and social applications of online networking.
- Developing a relationship based solely on electronic communication can be challenging. As our candidates suggested, relationships between mentor and mentee would benefit from face-to-face meetings. Further investigation might explore the quantity and quality of online vs. face-to-face encounters to ascertain the optimum levels for both types of interactions.
- The power of sharing images and personal profiles should be investigated as an important feature in using a social networking link, especially when those images can dispel misconceptions and stereotypes and stretch world views.
- The use of open online forums in a whole group mentoring process should be explored as a way to develop communities of practice that build social capital for service-learning partners.
- Although computers are increasingly available, the digital divide remains a concern. The accessibility of the necessary tools and technological skills for all participants should be considered to ensure a level playing field in e-mentoring situations.

Are there other unrecognized advantages and disadvantages to using online forums to develop relationships between service-learning partners? Might the public nature of this discourse be an obstacle to sharing? At the moment, we have more questions than answers.

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Appendix A

Subscale Item Correlations

Cultural Integration

Correlations

		16	21	26	27	32	33	38	39	43
16	Pearson Correlation	1	.166	.237	-.119	.301*	.311*	-.108	.243	-.250
	Sig. (2-tailed)		.222	.079	.384	.024	.020	.428	.071	.063
	N	56	56	56	56	56	56	56	56	56
21	Pearson Correlation	.166	1	.352**	.370**	.325*	.281*	.291*	.101	.107
	Sig. (2-tailed)	.222		.008	.005	.014	.036	.029	.457	.432
	N	56	56	56	56	56	56	56	56	56
26	Pearson Correlation	.237	.352**	1	.188	.141	.261	.069	.165	-.060
	Sig. (2-tailed)	.079	.008		.164	.302	.052	.612	.223	.663
	N	56	56	56	56	56	56	56	56	56
27	Pearson Correlation	-.119	.370**	.188	1	.140	.113	.256	.176	-.058
	Sig. (2-tailed)	.384	.005	.164		.305	.409	.057	.194	.673
	N	56	56	56	56	56	56	56	56	56
32	Pearson Correlation	.301*	.325*	.141	.140	1	.314*	.170	.359**	.080
	Sig. (2-tailed)	.024	.014	.302	.305		.018	.210	.007	.556
	N	56	56	56	56	56	56	56	56	56
33	Pearson Correlation	.311*	.281*	.261	.113	.314*	1	.091	.372**	.131
	Sig. (2-tailed)	.020	.036	.052	.409	.018		.504	.005	.336
	N	56	56	56	56	56	56	56	56	56
38	Pearson Correlation	-.108	.291*	.069	.256	.170	.091	1	-.017	.097
	Sig. (2-tailed)	.428	.029	.612	.057	.210	.504		.899	.478
	N	56	56	56	56	56	56	56	56	56
39	Pearson Correlation	.243	.101	.165	.176	.359**	.372**	-.017	1	.023
	Sig. (2-tailed)	.071	.457	.223	.194	.007	.005	.899		.868
	N	56	56	56	56	56	56	56	56	56
43	Pearson Correlation	-.250	.107	-.060	-.058	.080	.131	.097	.023	1
	Sig. (2-tailed)	.063	.432	.663	.673	.556	.336	.478	.868	
	N	56	56	56	56	56	56	56	56	56

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Behavioral**Correlations**

		17	22	28	34	40	45
17	Pearson Correlation	1	.013	.133	.101	-.140	-.193
	Sig. (2-tailed)		.925	.329	.459	.304	.153
	N	56	56	56	56	56	56
22	Pearson Correlation	.013	1	.317*	.312*	-.182	-.402**
	Sig. (2-tailed)	.925		.017	.019	.179	.002
	N	56	56	56	56	56	56
28	Pearson Correlation	.133	.317*	1	.332*	-.443**	-.558**
	Sig. (2-tailed)	.329	.017		.012	.001	.000
	N	56	56	56	56	56	56
34	Pearson Correlation	.101	.312*	.332*	1	-.219	-.234
	Sig. (2-tailed)	.459	.019	.012		.104	.083
	N	56	56	56	56	56	56
40	Pearson Correlation	-.140	-.182	-.443**	-.219	1	.426**
	Sig. (2-tailed)	.304	.179	.001	.104		.001
	N	56	56	56	56	56	56
45	Pearson Correlation	-.193	-.402**	-.558**	-.234	.426**	1
	Sig. (2-tailed)	.153	.002	.000	.083	.001	
	N	56	56	56	56	56	56

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Intellectual**Correlations**

		18	23	29	35	41
18	Pearson Correlation	1	.378**	.355**	.380**	.442**
	Sig. (2-tailed)		.004	.007	.004	.001
	N	56	56	56	56	56
23	Pearson Correlation	.378**	1	.111	.135	.009
	Sig. (2-tailed)	.004		.417	.320	.949

	N	56	56	56	56	56
29	Pearson Correlation	.355**	.111	1	.149	.336*
	Sig. (2-tailed)	.007	.417		.274	.011
	N	56	56	56	56	56
35	Pearson Correlation	.380**	.135	.149	1	.229
	Sig. (2-tailed)	.004	.320	.274		.090
	N	56	56	56	56	56
41	Pearson Correlation	.442**	.009	.336*	.229	1
	Sig. (2-tailed)	.001	.949	.011	.090	
	N	56	56	56	56	56

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Attitude

Correlations

		19	24	30	36	42
19	Pearson Correlation	1	.327*	.042	.330*	.565**
	Sig. (2-tailed)		.014	.757	.013	.000
	N	56	56	56	56	56
24	Pearson Correlation	.327*	1	.080	.431**	.312*
	Sig. (2-tailed)	.014		.560	.001	.019
	N	56	56	56	56	56
30	Pearson Correlation	.042	.080	1	-.041	.058
	Sig. (2-tailed)	.757	.560		.766	.673
	N	56	56	56	56	56
36	Pearson Correlation	.330*	.431**	-.041	1	.260
	Sig. (2-tailed)	.013	.001	.766		.053
	N	56	56	56	56	56
42	Pearson Correlation	.565**	.312*	.058	.260	1
	Sig. (2-tailed)	.000	.019	.673	.053	
	N	56	56	56	56	56

* . Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Empathy

Correlations

		20	25	31	37	43
20	Pearson Correlation	1	-.190	.208	-.105	.004
	Sig. (2-tailed)		.160	.125	.440	.975
	N	56	56	56	56	56
25	Pearson Correlation	-.190	1	-.072	.140	-.041
	Sig. (2-tailed)	.160		.599	.305	.762
	N	56	56	56	56	56
31	Pearson Correlation	.208	-.072	1	.152	.356**
	Sig. (2-tailed)	.125	.599		.265	.007
	N	56	56	56	56	56
37	Pearson Correlation	-.105	.140	.152	1	.253
	Sig. (2-tailed)	.440	.305	.265		.060
	N	56	56	56	56	56
43	Pearson Correlation	.004	-.041	.356**	.253	1
	Sig. (2-tailed)	.975	.762	.007	.060	
	N	56	56	56	56	56

** . Correlation is significant at the 0.01 level (2-tailed).

Notes

ⁱ "Millennials who use social networking sites for civic causes are also more civically engaged... Although we cannot conclude that belonging to social networking sites alone causes an increase in civic engagement, those who engage online come from diverse economic and educational backgrounds, illustrating the potential of technology in bridging traditional civic gaps." America's Civic Health Index 2009 (www.ncoc.net)

ⁱⁱ As the B.I.E. high school acts in the role of guardian for many of its students, we requested and received consent from B.I.E. administrators for their students to participate on the site. In compliance with university IRB office, we focused our research on our students' perceptions and dispositions related to working with diverse populations, placing our candidates as the subjects of the research.

ⁱⁱⁱ The "digital divide" that has impeded access for some school children from lower socioeconomic groups in the past (US Department of Commerce, 2000) appeared to be a factor with the boarding school students. Although teachers at the school reported that their students had access to twenty-four computers in the library, in addition to the use of several classroom sets of computers on a cart, their students indicated limited experience with and access to technology.