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Abstract

As society trends towards increased cultural diversity, the need for *cultural competence* in the field of occupational therapy (OT) becomes more acute. Immersion in another culture within the curriculum offers the student an opportunity to put their knowledge into practice and recognize the need to competently interact with members of another culture. This study explored the impact of a service learning trip to Haiti, providing seating and mobility services, on all four factors of cultural intelligence (CQ; i.e., metacognitive CQ, cognitive CQ, motivational CQ, behavioral CQ) for occupational therapy doctoral (OTD) students. Using the cultural intelligence scale (CQS), a one-group pretest-posttest design with a paired-samples *t*-test ($\alpha < 0.05$) rejected the null hypotheses to support service learning as a pedagogy which enhanced the four factors of CQ for the sample. With increased emphasis on producing culturally sensitive OTD professionals, service learning projects in a cross-cultural setting as a pedagogy extend beyond skill development (e.g., wheelchair fittings) to building coping strategies for interacting with clients (metacognitive CQ), enhancing knowledge of culture (cognitive CQ), persisting to overcome any cultural barriers (motivational CQ), and building the behavioral repertoire (behavioral CQ) of occupational therapists. Contrasting the results from this study with research into the efficacy of short-term study tours, service learning positively impacts behavioral CQ, whereas short-term study tours do not have the same impact. This article details the service learning project and provides recommendations for future research.

Keywords

Cultural competence, service learning, Haiti

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Exploring the Impact of Service Learning in Haiti on the Cultural Competence of OTD Students

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ABSTRACT

As society trends towards increased cultural diversity, the need for cultural competence in the field of occupational therapy becomes more acute. Immersion in another culture within the curriculum offers the student an opportunity to put their knowledge into practice and recognize the need to competently interact with members of another culture. This study explored the impact of a service learning trip to Haiti, providing seating and mobility services, on all four factors of cultural intelligence (CQ; i.e., metacognitive CQ, cognitive CQ, motivational CQ, behavioral CQ) for occupational therapy doctoral (OTD) students. Using the cultural intelligence scale (CQS), a one-group pretest-posttest design with a paired-samples *t*-test ($\alpha < 0.05$) rejected the null hypotheses to support service learning as a pedagogy which enhanced the four factors of CQ for the sample. With increased emphasis on producing culturally sensitive OTD professionals, service learning projects in a cross-cultural setting as a pedagogy extend beyond skill development (e.g., wheelchair fittings) to building coping strategies for interacting with clients (metacognitive CQ), enhancing knowledge of culture (cognitive CQ), persisting to overcome any cultural barriers (motivational CQ), and building the behavioral repertoire (behavioral CQ) of occupational therapists. Contrasting the results from this study with research into the efficacy of short-term study tours, service learning positively impacts behavioral CQ, whereas short-term study tours do not have the same impact. This article details the service learning project and provides recommendations for future research.

INTRODUCTION

As society trends towards increased cultural diversity (i.e., demographic differences; McGrath, Berdahl, & Arrow, 1995; as cited in Ely & Thomas, 2001), the need for cultural competence becomes more acute, particularly within the field of occupational therapy. Cross, Bazron, Dennis, and Isaacs (1989) defined cultural competence as “a set of congruent behaviors, attitudes, and policies that come together in a system, agency or among professionals and enable that system, agency or those professions to work

effectively in cross-cultural situations” (p. 7). In order to effectively practice from a client-centered perspective, occupational therapists must understand the client’s culture, or “the sum of the experiences, values, beliefs, ideals, judgements, and attitudes that shape and give continuous form to each individual” (Royeen & Crabtree, 2006, p. 3). These cultural differences can significantly impact the way occupational therapists practice. Cultural considerations for providers include client comfort level with physical contact, gender roles, and perspectives on disability, as well as the impact of culture on overall occupational participation and engagement.

A recent Pew Research Study estimated that by the year 2060, non-whites (i.e., all others, Asians, blacks, Hispanics) will make up the majority of the United States population (Taylor, 2014). This estimate highlights the urgency for occupational therapists to work towards cultural competence to meet the occupational needs of rapidly changing domestic demographics. While continuing education certainly has a role in this process, fostering cultural competence in the next generation of occupational therapists begins at the university level during academic preparation.

Didactic cultural training in the classroom has proven effective with the use of case studies and other resources based on the responses of instructors who incorporate such material (Matteliano & Stone, 2014). While classroom instruction may shape attitudes and awareness of cultural issues within the field of occupational therapy, immersion in another culture as part of the curriculum offers the student an opportunity to put their knowledge into practice and recognize the need to competently interact with members of another culture. The goal of this study was to explore the impact of a week-long service learning trip to Haiti on the cultural competence of occupational therapy doctoral (OTD) students.

In January 2016, 12 OTD students from a program in the Midwestern United States traveled to Haiti to serve with an organization called Wheels for the World (WFTW) to provide seating and mobility clinics for people with disabilities. This experience constituted part of their OTD curriculum, specifically fulfilling the requirement for their Global Outreach and Missions course. This experience was designed to increase cultural competence and promote a global perspective in keeping with the American Occupational Therapy Association’s (AOTA) Centennial Vision (AOTA, 2015, p. 1).

As noted, the intent of the service learning project in a cross-cultural setting centers not only on skill development, but also the use of experiential learning to facilitate cultural competence crucial to training future occupational therapists. Due to the experiential nature of the service project, cultural intelligence (CQ), a four-factor construct introduced by Earley and Ang (2003), was selected by the researchers to assess cultural competence using the Cultural Intelligence Scale (CQS). The CQS measures metacognition or ability to develop coping strategies, cognition or cultural knowledge, motivation or capacity to persist and behavior or a repertoire of behavioral patterns (Ang & Inkpen, 2008; Earley & Peterson, 2004; Ng & Earley, 2006).

An analysis of the data obtained from this study will serve to provide evidence for the efficacy of international experience as part of OTD program curricula. This immersive, hands-on experience should serve to improve cultural competency, specifically the cognitive, metacognitive, motivational, and behavioral aspects of competence as measured by the CQS.

LITERATURE REVIEW

A central tenet of occupational therapy is client-centered practice and respect for the autonomy of each client. A core value of the profession is equality, defined by the AOTA Code of Ethics as “treating all people impartially and free of bias” (AOTA, 2015, p. 2). Another Standard of Conduct outlined in the same document is autonomy, or the “duty to treat the client according to the client’s desires” (p. 4). To practice equality and respect client autonomy, understanding a client’s culture emerges as a crucial element of the occupational therapy process. Herein, culture is defined as shared behavioral patterns and symbols representative of a group which guide conduct or actions (Kluckhohn & Kroeberg, 1952; as cited in Black & Mendenhall, 1990). The Occupational Therapy Practice Framework (OTPF) recognizes culture as a vital component of occupation in including culture as a contextual factor impacting occupational performance (AOTA, 2014). While it may not be realistic for an occupational therapy practitioner to have an in-depth understanding of every client’s culture, a basic skill-set of cultural competence is necessary to be sensitive to and respect these cultural nuances as they are encountered. Rather than concentrating on specific cultural norms and practices, CQ reportedly facilitates the development of a mindset by which to observe and interact within a cross-cultural context in a way that demonstrates the flexibility to adapt and effectively engage diversity.

Accepting the need for cultural competence within occupational therapy education and practice, the question turns to pedagogy. While robust research on traditional methods of instruction exist, there is also increasing evidence that students may also benefit from service learning. A widely accepted definition of service learning emerged from the work of Jacoby (1996) who wrote, “Service learning is a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development” (p. 5).

Giles and Eyler (1994) traced the roots of learning through experience to the writings of Dewey who advocated that knowledge be combined with experience in order to be usable and transferable. Dewey (1953) advanced an experimental or experiential approach to education, indicating that the quality of the experience and maturity of the learner, as well as the links between experiences, impact the educative potentiality. Herein, a learner interacts with the environment in a holistic manner or process, according to experiential learning theory (ELT) (Kolb, 1984). The process of adaptation occurs by holding two dimensions in tension: (a) prehension through concrete experience (CE) and abstract conceptualization (AC) and (b) transformation through active experimentation (AE) and reflective observation (RO) (Kolb, 1984). Experiential learning capitalizes on holistic adaptation. The idea of experiential learning evolved over

time into the concept of service learning and became a more widely studied pedagogy within academic circles.

Several prior studies with occupational therapy education have shown evidence for the efficacy of service learning as a pedagogy. Gitlow and Flecky (2005) found that a service learning experience involving a community project investigating accessibility issues impacted students' conceptualization of the individual, environmental and social constructs of disability. Furthermore, the quantitative data from the study revealed that more than 90% of the participating students increased their personal comfort level in working with individuals from different cultures. Another study by Greene (1997) found that service learning impacted occupational therapy students' appreciation for some of the core concepts of the profession of occupational therapy including dignity, equality, and justice.

Other research within occupational therapy education has focused on the benefit of cross-cultural interaction to enhance students' global perspectives. Aldrich and Johansson (2015) found that a course involving international online interactions between students provided a beneficial pedagogy to explore differences in culture and the practice of occupational therapy. Their study utilized undergraduate occupational science students in the United States and Sweden and subsequent survey responses of each group related to their interactions.

Increasing diversity within the domestic population and globalization has shifted the environment, directly impacting occupational therapists and necessitating adaptation (Kolb, 1984). An occupational therapy professional needs to fully engage in experiential learning as a means to adapt. Herein, service learning in a cross-cultural setting resembles the environment in which OTD students will function, moving beyond knowledge or passive learning to highly rigorous and participative learning (Lewis, 2005; Puck, Kittler, & Wright, 2008).

Cultural Intelligence as Cultural Competence

Described as an ability to manage interactions in cross-cultural situations, CQ serves as a means by which to assess cultural competence. Earley and Ang's (2003) framework of CQ mirrors the multiple intelligence literature, including Sternberg and Detterman's (1986) framework composed of the same four factors: metacognition, or the way of thinking that fosters the development of coping strategies; cognition, or cultural knowledge; motivation, or efficacy to persist; and behavior, or a repertoire of behavioral patterns (Ang & Van Dyne, 2008; Earley & Peterson, 2004; Ng & Earley, 2006). Essentially, CQ offers a broader understanding of intelligence and noted that both mental flexibility and adaptive performance associated with CQ increased the likelihood for individuals to demonstrate successful intelligence in a diverse context.

As a capability, CQ appears malleable and, thus, seems open to change and improvement. Rather than concentrating on specific cultural norms and practices, CQ facilitates the development of a mindset by which to observe and interact within a cross-cultural context in a way that demonstrates the flexibility to adapt and effectively engage

diversity (e.g., Ang et al., 2007; Earley & Peterson, 2004). Both formal instruction such as training pertaining to cultural norms and behaviors, as well as experiences like international travel, should enhance CQ (Van Dyne, Ang, & Nielsen, 2007; Wood & St. Peters, 2014).

Accordingly, service learning should capitalize on experiential learning as a means by which to improve cultural competency as gauged by the CQS. Ng and colleagues (2007) proposed that motivational and behavioral CQ would impact the amount and quality of experience, because individuals with curiosity and confidence (i.e., motivational CQ) seek intercultural interactions using interpersonal skills (i.e., behavioral CQ) to build cross-cultural relationships (as cited in Ng, Van Dyne, & Ang, 2009). Individuals with high cognitive and metacognitive CQ would employ complex schema (i.e., cognitive CQ) to observe cues with the propensity to withhold judgment when disparate cues emerge to explain the differences (i.e., metacognitive CQ), promoting both reflective observation (RO) and abstract conceptualization (AC). Finally, all four factors would influence active experimentation. Equipped with both strategy (i.e., metacognitive CQ) and understanding (i.e., cognitive CQ) of the cultural context, an individual would proactively implement (i.e., motivational CQ) an appropriate behavioral plan (i.e., behavioral CQ).

HYPOTHESES

The research in this study builds upon tenets of previous research by examining the impact of an international service-learning project on cultural competency (i.e., CQ) of OTD students. The researchers assert the following hypotheses:

Hypothesis 1: Service learning as a form of experiential learning will enhance metacognitive CQ.

Hypothesis 2: Service learning as a form of experiential learning will enhance cognitive CQ.

Hypotheses 3: Service learning as a form of experiential learning will enhance motivational CQ.

Hypotheses 4: Service learning as a form of experiential learning will enhance behavioral CQ.

METHOD

Participants

The sample for this study was a sample of convenience including all 12 Huntington University first-year OTD students who voluntarily participated in a service learning trip to Haiti with Wheels for the World. The students were given an option to participate in a local service experience with a population of adults with disabilities or to participate in the international service learning trip to Haiti. For the sample ($N = 12$), ages ranged from 20 to 26 years old. Males represented 16.7% of the respondents ($n = 2$), and females

represented 83.3% of the respondents ($n = 10$). The student participants had varying degrees of prior cross-cultural experience with 16.7% having had no prior international experience ($n = 2$), 50% having traveled internationally two to three times ($n = 6$), 8.3% having traveled four to five times ($n = 1$), and 25% having traveled six or more times ($n = 3$).

Instrument

To ascertain initial CQ score, the pre- and posttests represent the Ang et al. (2007) four factor CQS composed of 20 questions (see Appendix). The measurement contains four subscales (i.e., factors): metacognitive (4 items), cognitive (6 items), motivational (5 items), and behavioral (5 items). Using a Likert-type scale (1 = strongly disagree; 7 = strongly agree), participants rate questions corresponding to metacognitive CQ (e.g., "I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds"), cognitive CQ (e.g., "I know the legal and economic systems of other cultures"), motivational CQ (e.g., "I enjoy interacting with people from different cultures"), and behavioral CQ (e.g., "I change my verbal behavior when a cross-cultural interaction requires it").

Instrument reliability. To develop the CQS, Van Dyne, Ang, and Koh (2008) operationally defined all four factors and developed numerous statements associated with each factor as a means by which to develop the scale. From an initial pool of 53 items, Van Dyne et al. retained 40 items to present to a group of Singaporean students ($n = 576$). Running a confirmatory factor analysis (CFA), items with ". . . high residuals, low factor loadings, small standard deviations or extreme means, and low item-to-total correlations" (Van Dyne, Ang, & Koh, 2009, p. 238) were discarded. Using the 20-item scale, Van Dyne et al. (2008, 2009) demonstrated reliability using alternative forms reliability and split half test. With a non-overlapping sample ($n = 447$) of Singaporean students, Van Dyne et al. (2009) completed another CFA, showing moderate correlation among the four factors with variance at acceptable levels and generalizability across samples. A subset of the second group ($n = 204$) completed the CQS after a four-month period to reveal longitudinal measurement invariance. Again, Van Dyne and colleagues (2008, 2009) employed a CFA to demonstrate good fit and alternative form reliability to support invariance. Finally, to evidence generalizability across countries, Van Dyne et al. (2008) conducted research with an American student sample ($n = 337$), again demonstrating invariance and applicability across cultures. Moreover, tests regarding reliability prove appropriate for instrument development (Creswell, 2012; Golbeck, 1986).

Instrument validity. As noted, Van Dyne et al. (2008, 2009) examined the CQS with various measures, including ". . . cognitive ability, emotional intelligence, and CJDM, interactional adjustment, and mental well-being" (Van Dyne et al., 2009, p. 245). CQ proved distinctive from all of the aforementioned measures after running a CFA. Controlling for age, gender, and country of origin (i.e., U.S. or Singapore), Van Dyne and colleagues performed a hierarchical regression analysis to demonstrate incremental validity. Kim, Kirkman, and Chen (2008) also demonstrated discriminate validity for emotional intelligence (EQ) and CQ, using Wong and Law's (2002) 16-item

EQ scale. Research conducted by Ward, Fischer, Lam, and Hall (2009) and Ward, Wilson, and Fischer (2011) also called into question the incremental and predictive validity of the CQS. Ward et al. (2009) indicated that CQ failed to predict adjustment above and beyond that of language proficiency (self-rated) and EQ. Herein, measures regarding adjustment differed among studies conducted by Van Dyne and colleagues and Ward and colleagues. Seemingly divergent results described above as Van Dyne and colleagues emphasized successful interaction and Ward and colleagues' use of sociocultural adaptation.

Procedure

Upon obtaining IRB approval for the study, the Cultural Intelligence Scale (CQS) was administered to the sample of 12 students at 2 intervals. The students were assigned a number to identify individual changes in CQS scores without compromising anonymity. The first administration took place at a team meeting approximately 7 weeks prior to the Haiti trip and prior to any cultural orientation related to the trip. This first CQS administration served to establish a baseline cultural competence for each student and the group collectively as the students had varying degrees of prior cross-cultural experience. The details and logistics of the service learning experience and preparation are included in our procedure to better understand the experience and any subsequent changes in cultural competence.

Prior to departure for Haiti, the students received basic instruction in principles of kinesiology, seating and mobility assessment, as well as Haitian cultural orientation. One of the student participants was actually from Haiti and provided an in-service on Haitian culture including a traditional Haitian meal, basic language, and history of the country. The participants also had general preparation for serving cross-culturally, including several activities related to cross-cultural immersion. These activities included goal-directed tasks operating in groups that had unspoken, prearranged cultural norms involving behaviors and language. Students were required to identify the behaviors and language of the group to work towards completing objectives within the context of the group's cultural norms. These activities simulated situations that would be encountered in Haiti as students worked across language and cultural barriers to provide seating and mobility services.

The students and faculty chaperone (author Nathan Short) departed for Haiti on January 9, 2016 and returned on January 17, 2016. They served with an organization called Wheels for the World, a faith-based, non-profit organization, providing free seating and mobility clinics in the developing world using donated, refurbished mobility equipment from the United States. The entire team consisted of the 12 Huntington students as well as other occupational and physical therapists and team members who arrived from various parts of the United States. Breakfast and dinner took place each day at the boarding facility with traditional Haitian meals served. Each day also included team meetings to prepare and debrief for the day and also included talks from an in-country partner on Haitian culture and society. Local Haitians were also present at the facility, many of whom spoke conversational English, and were able to interact with the students.

The team led five days of seating and mobility clinics using mobility items that had been previously donated, refurbished, and sent to Port-au-Prince ahead of the team. The seating and mobility clinics were held in churches and other community facilities in the outlying areas around Port au Prince. Each clinic consisted of five seating teams including a lead occupational or physical therapist, a lead mechanic, and student assistants. The students served in the role of seating assistant, mechanic assistant, and a historian role. The students were assigned to one of five seating teams each day and assisted a lead occupational or physical therapist in performing mobility assessments as well as modifying and fitting mobility equipment. The seating assistants served in assisting the occupational or physical therapist to perform an assessment and prescribe mobility equipment. The mechanics assistants served by assisting a lead mechanic to make physical adjustments or add modified components to chairs based on the therapist's recommendation. Our student who served as historian photographed the trip and took stories from clients served.

Through their various roles, the students had the opportunity to interact with many Haitian individuals as well as use a translator for the majority of clients who spoke only Haitian Creole. Several students also had the opportunity to make home visits and perform basic home assessments to determine the most appropriate mobility aid for the environment. They also provided basic education to each client served on transfer technique, maintenance of the wheelchair equipment, and instruction on safe use of the equipment.

Clinically, students were given opportunities to perform components of the assessment including obtaining client medical and functional history, occupational needs, physical assessment, as well as equipment and component recommendations. As the week progressed, the students were given more autonomy to participate in the process based on the student and clinician comfort level. The students had one day off to explore Haiti with an in-country partner, which included a trip to the local market and a visit to an orphanage.

While medical charts and formal medical history were not provided for the clients we served, various client presentations suggested diagnoses consistent with Parkinson's disease, cerebral palsy, lower and upper extremity amputations, cerebrovascular accident (CVA), and traumatic brain injury (TBI). Students participated in physical evaluation including assessment of range of motion and strength, muscle tone and spasticity, trunk control, and functional mobility. The students, along with their seating team, conversed with the individuals regarding the medical and functional issues.

The final CQS administration took place a week following the student's return from Haiti. Prior to the final administration, the students completed journaling about their experience and participated in a focus group. The administration intervals were intentionally planned to capture CQS baseline scores prior to the experience as well as a week upon returning to allow students time to process the experience. The authors feel the timing of administration is important to consider as students' emotions and

processing of their experience may certainly impact perceived cultural competence and interaction.

Data Collection

To determine the impact of the service learning experience, this study employed a one-group pretest-posttest design, collecting data prior to and after the service learning project in Haiti. As a convenience and voluntary sample, OTD students were invited to participate in both administrations of the survey with 100% participation rate.

RESULTS

Data Analysis

As a one-group pretest-posttest design, a paired-samples *t*-test ($\alpha < 0.05$) was employed to test the four hypotheses. Table 1 provides descriptive statistics for each of the four CQ factors at Time 1 (pretest) and Time 2 (posttest) with the means increasing from Time 1 to Time 2 for all factors, while the standard deviations decreased. For each of the hypotheses, the inquiry proposed that post-trip scores would increase, demonstrating a positive impact of the service learning on CQ. Herein, all four factors of CQ improved from pretest and posttest, indicating an improvement in cultural competency for the sample.

Table 1

Descriptive Statistics

Statistic	<u>Metacognitive CQ</u>		<u>Cognitive CQ</u>		<u>Motivational CQ</u>		<u>Behavioral CQ</u>	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Mean	17.58	23.17	15.75	26.25	24.67	30.42	20.00	29.17
SD	2.72	2.41	5.58	5.45	3.77	3.26	3.77	2.37
SEM	0.78	0.69	1.61	1.57	1.09	0.94	1.09	0.68

Metacognitive CQ. Executing a paired-samples *t*-test for metacognitive CQ demonstrated a statistically significant ($\alpha < 0.05$) difference between Time 1 ($M = 17.58$, $SD = 2.72$) and Time 2 ($M = 23.17$, $SD = 2.41$), $t = 6.80$, $p < 0.001$. The magnitude of the difference in the means was large ($\eta^2 = 0.81$). Therefore, Hypothesis 1 is accepted with metacognitive CQ exhibiting a significant difference between pretest and posttest scores.

Cognitive CQ. Executing a paired-samples *t*-test for cognitive CQ demonstrated a statistically significant ($\alpha < 0.05$) difference between Time 1 ($M = 15.75$, $SD = 5.58$) and Time 2 ($M = 26.25$, $SD = 5.45$), $t = 7.61$, $p < 0.001$. The magnitude of the difference in the means was large ($\eta^2 = 0.84$). Therefore, Hypothesis 2 is accepted with cognitive CQ exhibiting a significant difference between pretest and posttest scores.

Motivational CQ. Executing a paired-samples *t*-test for motivational CQ demonstrated a statistically significant ($\alpha < 0.05$) difference between Time 1 ($M = 24.67$, $SD = 3.77$) and Time 2 ($M = 30.42$, $SD = 3.26$), $t = 7.77$, $p < 0.001$. The magnitude of the difference in the means was large ($\eta^2 = 0.85$). Therefore, Hypothesis 3 is accepted with motivational CQ exhibiting a significant difference between pretest and posttest scores.

Behavioral CQ. Executing a paired-samples *t*-test for behavioral CQ demonstrated a statistically significant ($\alpha < 0.05$) difference between Time 1 ($M = 20.00$, $SD = 3.77$) and Time 2 ($M = 29.17$, $SD = 2.37$), $t = 8.44$, $p < 0.001$. The magnitude of the difference in the means was large ($\eta^2 = 0.85$). Therefore, Hypothesis 4 is accepted with behavioral CQ exhibiting a significant difference between pretest and posttest scores.

DISCUSSION

Incorporation of a service learning component into OTD education as a means to facilitate cross-cultural competency appears promising. With increased emphasis on producing culturally sensitive OTD professionals, service learning projects in a cross-cultural setting as a pedagogy extend beyond skill development (e.g., wheelchair fittings) to building coping strategies for interacting with clients (metacognitive CQ), enhancing knowledge of culture (cognitive CQ), persisting to overcome any cultural barriers (motivational CQ), and building the behavioral repertoire (behavioral CQ) of occupational therapists. Findings associated with this study build on Gitlow and Flecky's (2005) findings that service learning facilitates a more complete comprehension of the client beyond immediate occupational therapy needs to the influence of the client's culture and associated constructs, reinforcing that service learning improves confidence to seamlessly interact with diverse clients.

The literature reveals domestic cross-cultural interaction as a means to improve cultural awareness specific to occupational therapy education (Aldrich & Johansson, 2015). Medical students have also demonstrated increased awareness and sensitivity to cultural issues after structured, experiential encounters with refugees (Griswold, Zayas, Kernan, & Wagner, 2007). While these studies addressed cross-cultural encounters in the United States within the context of the provider's culture, the current study examined learning through international, goal-directed experience with provider immersion in the client's culture. The student is immersed in the local language, environment, and customs prior to beginning the clinical experience. This cultural exposure prior to serving clients gave the student some context to provide culturally appropriate services once in the clinical environment. For example, as students observed the infrastructure and housing in Haiti, they realized the wheelchairs and mobility equipment prescribed would need to be durable and compact to navigate the rough terrain and narrow spaces of Haitian homes. They also realized equipment would need to be as portable as possible, as many clients relied on motorcycle or bicycle transportation from a neighbor or friend. These observations were confirmed as many clients left the clinic on the back of a motorcycle with the wheelchair stacked wherever space could be found. Serving clients within their own cultural context necessitates considerations and clinical reasoning that domestic cross-cultural interactions may not provide.

Improved cultural competence has significant implications specific to the occupational therapy practitioner. The client-centered, occupation-based perspective requires identification of the unique occupational needs of the individual and culturally competent occupational therapy recognizes cultural implications for individual occupational needs. Students serving in Haiti also realized the impact of Haitian culture on individuals' occupations and the need to adjust their interventions accordingly. For example, students training elderly Haitians on methods for independent transfers and mobility were rebuffed by family members proudly explaining the individual did not need to be able to do those things, the family would provide all the help the person needed.

The emphasis on autonomy and independence found in Western culture is often minimized in more familial cultures where the younger members of the family are expected to take care of older family members. The cognitive dissonance that occurs with students who have entrenched individualistic values encountering such dichotomy creates a sensitivity to cultural implications that will hopefully translate into practice. These critical incidents, described in the context of occupational therapy by Odawara (2005), allow opportunities for self-reflection on one's own cultural beliefs, biases, and assumptions as well as identification of the client's culture and implications on the OT process. Odawara (2005) described the critical incident approach to enhance the cultural competence of OTs through reflection on stories of the therapeutic process between Japanese patients and providers. While reflection on a prior clinical situation may serve to enhance knowledge related to cultural competence, international clinical immersion allows students to apply knowledge in an actual clinical scenario with the emotions, stressors, and rewards that go along with it. The emotional and physical aspects of encountering and adapting to critical incidents in real-time serve to solidify cultural knowledge as well as increase cultural sensitivity in future situations.

Contrasting the results from this study with research into the efficacy of short-term study tours, service learning positively impacts behavioral CQ, whereas short-term study tours do not have the same impact. The nature of service learning, wherein OTD students interacted with members of the host country, as well as translators, required behavioral competence in working cross-culturally to achieve a goal. Study tours often fail to provide intimate interaction with members of the host country beyond business tours, interviews, and associated tourism. OTD students needed to persist in their cultural immersion in order to properly fit wheel chairs to accommodate client needs. The goal-oriented nature of the interaction appears to contribute to other factors associated with CQ as wheelchair fittings necessitate OTD students to attempt multiple strategies, persist to accomplish a stated objective, and work to communicate the objective to both a translator and client.

Recommendations

The results of this study support the inclusion of international service learning experiences into occupational therapy education as a means to enhance the cultural competence of future practitioners. Additional research is needed to confirm the findings of this study. In addition, further research into the impact of local versus global service learning should be considered. A key question centers on the degree to which local

service learning can impact the cultural competence of OTD students in contrast with global service learning. Qualitative research into OTD student perceptions of improvements to cultural competency may more fully conceptualize the reason for improved CQ.

Limitations

Several limitations of this study emerge, including a small sample size limited by the number of student participants on the Haiti trip. Logistics and transportation in Haiti limit the number of students and other group members that can be accommodated on a single trip. The implementation of similar research covering multiple trips is discussed as an implication for future research. Regardless, de Winter (2013) indicated that *t*-tests with exceptionally small sample sizes ($N \leq 5$) may still be applied, particularly when the effective size is large. Further research, as noted above, should be conducted to confirm the results associated with this study.

Another limitation involves the opportunity to practice cultural competence beyond the service learning trip to Haiti. While the CQS is indicative of cognition related to cultural competence, the students did not have another opportunity to put learned skills into practice prior to the final administration of the scale. Future studies could focus on the long-term impact of a similar experience in shaping the behavioral expression of cultural competence in other situations where participants are given such an opportunity.

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Appendix

The Cultural Intelligence Scale (CQS)

Read each statement and select the response that best describes your capabilities. Select the answer that BEST describes you AS YOU REALLY ARE (1=strongly disagree; 7=strongly agree):

I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.	1 2 3 4 5 6 7
I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.	1 2 3 4 5 6 7
I am conscious of the cultural knowledge I apply to cross-cultural interactions.	1 2 3 4 5 6 7
I check the accuracy of my cultural knowledge as I interact with people from different cultures.	1 2 3 4 5 6 7
I know the legal and economic systems of other cultures.	1 2 3 4 5 6 7
I know the rules (e.g., vocabulary, grammar) of other languages.	1 2 3 4 5 6 7
I know the cultural values and religious beliefs of other cultures.	1 2 3 4 5 6 7
I know the marriage systems of other cultures.	1 2 3 4 5 6 7
I know the arts and crafts of other cultures.	1 2 3 4 5 6 7
I know the rules for expressing non-verbal behaviors in other cultures.	1 2 3 4 5 6 7
I enjoy interacting with people from different cultures.	1 2 3 4 5 6 7
I am confident that I can socialize with locals in a culture that is unfamiliar to me.	1 2 3 4 5 6 7
I am sure I can deal with the stresses of adjusting to a culture that is new to me.	1 2 3 4 5 6 7
I enjoy living in cultures that are unfamiliar to me.	1 2 3 4 5 6 7
I am confident that I can get accustomed to the shopping conditions in a different culture.	1 2 3 4 5 6 7
I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it	1 2 3 4 5 6 7
I use pause and silence differently to suit different cross-cultural situations	1 2 3 4 5 6 7
I vary the rate of my speaking when a cross-cultural situation requires it	1 2 3 4 5 6 7
I change my non-verbal behavior when a cross-cultural situation requires it.	1 2 3 4 5 6 7
I alter my facial expressions when a cross-cultural interaction requires it	1 2 3 4 5 6 7

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Note. Use of this scale granted to academic researchers for research purposes only. For information on using the scale for purposes other than academic research (e.g., consultants and non-academic organizations), please send an email to cquery@culturalq.com