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## **Service-Learning and Undergraduates: Exploring Connections Between Ambiguity Tolerance, Empathy, and Motivation in an Overseas Service Trip**

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As service-learning becomes more common in undergraduate education, further research is needed around assessing student learning outcomes and character development. One component of high-quality service-learning is written reflection, which has the potential to capture a wealth of data on learner characteristics. This study evaluated learners' behavior and motivation to participate in service trips, the development of personality characteristics, and the revelation of those characteristics in reflection using Winne and Hadwin's 1998 model of the self-regulated learner as it relates to the service-learning context. Researchers analyzed connections between learner experiences and changes in their ambiguity tolerance, empathy, and motivation via pre- and posttest surveys and reflection data. Relationships were identified between motivation and satisfaction, as well as frequency of reflection and personal change. The author offers a profile of an "optimal" overseas service-learner for consideration.

**Keywords:** service-learning, global citizenship, ambiguity, student outcomes, empathy

Service-learning is a widespread curricular tool used in secondary and postsecondary educational settings throughout the United States (Bingle, Clayton, & Hatcher, 2013; Jagla, 2008; Wade, 2008). Indeed, service-learning programming in public high schools increased from 27% in 1984 to over 80% by 1999 (Kleiner & Chapman, 1999). Similarly, Campus Compact (2016) lists its membership at nearly 1,100 colleges and universities that ascribe to the mission and vision of developing community and student capacity for civic and social responsibility—central tenets of service-learning pedagogy. Service-learning can serve multiple, diverse functions. It can be an exercise in democratic participation (Battistoni, 2000), a cultivator of global citizenship perspectives (Perry, Stoner, & Tarrant, 2012), or an application of content knowledge in, for instance, an engineering capstone course that serves a community partner (Bielefeldt et al., 2011). Service-learning can help to develop skills, transform perspectives, and create critical self-awareness. Developmental commonalities, however, are consistent since service-learning can foster positive emotional and cognitive growth in students across contexts, in a variety of settings and at multiple levels (Eyler, 2000; Steinke & Fitch, 2014). Learners encounter questions of social justice, undergo character development, build agency, experience empowerment, and engage in learning in a way that relates to their own experience and understandings (Einfeld & Collins, 2008; Wade & Saxe, 1996). For community members, service-learning projects can form or strengthen partnerships for improving programming, structures, and quality of life (Reeb & Folger, 2013).

Service-learning is distinct from pure community service, which typically comprises an extracurricular endeavor that lacks the reflective component necessary to deepen learning experiences (Vogelgesang & Astin, 2000). The National and Community Service Act of 1990 gave an open-ended, experiential, but also more explicitly connected definition to learning and development. They state that it is a method "under which students or participants learn and develop through active participation in thoughtfully organized service (p. 5)" that has academic integration and time for reflection. The most recent and arguably most accepted definition was offered by Bingle, Clayton, and Hatcher (2013), who described service-learning as:

a component of civic engagement [that] can be defined as a course or competency-based, credit-bearing educational experience in which students: (a) participate in mutually identified service activities that benefit the community, and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of personal values and civic responsibility. (p. 338)

The common thread connecting these definitions is that service-learning is an exercise that is intentional and systematic, with learners gaining new knowledge about themselves and their world through a service experience (or experiences) in field-based settings.

Service-learning can take many forms, but high-quality service-learning experiences are marked by a combination of integrated learning, community service, collaborative development and management, civic engagement, contemplation, and evaluation and disclosure (Smith et al., 2011). Through service-learning, students apply curricular knowledge in real-world settings to open up a world of knowledge and insight beyond the skills of the career (Smith et al., 2011). In addition to meeting academic objectives, service-learning can also address character education around multiculturalism and cross-cultural communication competency (O'Grady, 2014).

The contemplation, evaluation, and disclosure aspects of service-learning all represent reflective processes with the intent of developing both the identity and self-efficacy of learners. Service-learning promotes individual learner development through reflection and self-awareness, including building capacity for self-authorship and agency (Jones & Abes, 2004). For undergraduate students in a post-adolescent stage, establishing identity, purpose, and independence are all key motivators for learning and character development (Chickering, 1964; Chickering & Reisser, 1993; Torres, Jones, & Renn, 2009). Thus, service-learning meets the needs of a diverse set of learners, and each developmental experience is uniquely captured through reflection (Hatcher, Bringle, & Muthiah, 2004).

### **Statement of the Problem**

Many service-learning studies frame their analyses with cognitive outcomes such as content knowledge and intellectual development—for example, students' understanding of mathematics, public policy, or social justice (Bradford, 2005; Mitchell, 2014, 2012; Simons et al., 2010). This focus on service-learning's cognitive outcomes must be paired with an examination of its impact on student development (Reeb & Folger, 2013). This study was rooted in theories of self-directed learning (Winne, 2001; Winne & Hadwin, 1998) and post-adolescent identity development (Chickering, 1964; Chickering & Reisser, 1993). By applying these two frameworks to individual learner experiences, the study sought to describe service learners' behaviors in an effort to better understand their motivation, attitudes, and personal development. There is also significance in understanding student experiences in the context of short-term service-learning abroad. Specifically, Perry, Stoner, and Tarrant (2012) called for further study into short-term study abroad to understand learner outcomes in relation to perspective development and global citizenship. In addition, the usefulness and learner outcomes of short-term study abroad have been questioned in service-learning literature in fields such as environmental studies (Tarrant & Lyons, 2012).

### **A Theoretical Framework for Service-Learners**

For this study, we used a combination of frameworks to operationalize the actions of institutional stakeholders and individual service-learners at a private university in the northeastern United States during a service-learning experience in a developing nation. To describe the university's intended curriculum for service-learners, we applied Chickering's (1964) theory of identity development to an experiential education process (i.e., the service-learning experience). To describe the students' activities during and after the service-learning experience, we applied Winne and Hadwin's (1998) model of the self-regulating learner.

## Post-Secondary Student Development

Chickering (1964, 1993) outlined seven vectors for postsecondary, late-adolescent learner development: developing autonomy and independence, managing emotions, developing competence, developing interpersonal relationships, establishing identity, developing purpose, and developing integrity. After a 10-year study of college undergraduates' identity development from their sophomore to senior years, Chickering created a comprehensive model of seven vectors for student development for other institutions to use in enhancing their understanding of development beyond the classroom in higher education. Institutions of higher education have embraced this model of the postsecondary learner, applying it in a variety of contexts from first-year leadership programming to interpersonal skills training for undergraduate nursing students (Ross, 2010; Salisbury, Pascarella, Padgett, & Blaich, 2012). Chickering's work has informed myriad studies over the last 30 years, including attrition in community college online courses, a development process related to transgender undergraduates, and civic engagement around religion and identity development (Droege & Ferrari, 2012; Dugan, Kusel, & Simounet, 2012; Tirrell & Quick, 2012).

Experiential learning is a particularly powerful vehicle for developing the seven vectors identified by Chickering (1964, 1993). Indeed, experiential learning, long been a hallmark in certain fields of higher education (e.g., engineering co-ops, nursing clinical rotations, teaching placements, etc.), and Chickering's model has spread to other fields, from library studies to computer science (Matusiak & Hu, 2012; Walton, 2012). Evolving from the work of Dewey (1916) and Kolb (1984), experiential learning theory states that knowledge emerges from a multi-step process: First, a learner has an experience (e.g., a service episode) or is exposed to information or a context that is disorienting in preparation for said experience; second, the learner reflects upon it; finally, the learner makes connections and/or applies the knowledge through assignments, writing, or other forms of expression. The transformation of experience into learning takes place through reflective observation and active experimentation (Kolb, 1984; Kolb, Boyatzis & Mainemelis, 2000). Accounting for the importance of learner-centered assessment, reflective assignments are used to understand the learner's processing of the experience and growth (Webber, 2012). Reflection is the most common—and perhaps most effective—assessment for service-learning, as it captures the unique processing of each individual experience in a deep, qualitative manner (Bingle, Clayton, & Bringle, 2015; Eyler, 2002; Hatcher, Bringle, & Muthiah, 2004). Further, critical reflection—an intentional process of elaborating meaning perspectives and actively, persistently reviewing past beliefs and knowledge—can be used in formative and summative ways to assess learner development (Dewey, 1933; Jameson, Clayton, & Ash, 2012; Mezirow, 1990). Eyler and Giles (1999) likened this type of deep transformative learning to making the leap from coloring within the lines to exhibiting understanding to creating a new picture entirely in order to show new perspective.

## Service-Learning and the Seven Vectors of Student Development

Based on the widely accepted understanding of service-learning as a developer of student emotional, behavioral, and cognitive characteristics, an assumption can be made that service-learning *qua* experiential learning can assist students' progress along the seven vectors identified by Chickering (1964, 1993), particularly in relation to competency development and purpose as it pertains to postsecondary learners. For service-learners, core competencies include ambiguity tolerance and empathy, and purpose is developed through their motivation for service (Kiely, 2005; Lundy, 2007). Ambiguity tolerance refers to the learner's ability to view complex or incongruous situations as “desirable, challenging, and interesting” (Furnham & Ribchester, 1995, p. 179), and to engage them without denying or distorting information. Perry, Stoner, and Tarrant (2012) pointed to the transformation of students in short-term study-abroad experiences in terms of meaning-perspective shift and flexibility they develop to prepare for and flourish in an uncertain future. Huber (2003) found that experiential learning develops ambiguity tolerance and prepares students for real-world situations in which rules and expectations are not always clearly defined. Empathy is defined as “feeling in oneself the feelings of others” (Eisenberg & Strayer, 1987, p. 391). Jones, Rowan-Kenyon, Ireland, Niehaus, and Skendall (2012) found that students who

participated in short-term, experiential-immersion programs developed empathy through boundary crossing, personalizing, and intercultural exchanges. Theorists have conceptualized empathy in four forms: basic, historical, sociocultural (or ethnocultural), and socioeconomic. All forms have been studied through service-learning projects in various fields and settings (Fox, 2010; Nickols & Nielsen, 2011; Terry & Panter, 2010). Studies in lifespan psychology have shown that service-learning has a positive, significant increase in post-project empathy, as well as positive cognitive and personal development (Lundy, 2007). According to Chick, Karis, and Kernahan (2009), service-learners can build ethnocultural empathy by subjecting their experiences to the process of reflection and metacognition.<sup>1</sup> In one study, service-learning students presented more signs of empathy in reflective writing than non-service-learning students in the classroom (Wilson, 2011). Motivation can be extrinsic or intrinsic; intrinsic motivation can support learners' creativity and enable high-quality learning (Ryan & Deci, 2000). Research has suggested that motivation is nurtured more by intrinsic rather than extrinsic rewards, with constructs such as peer pressure, teamwork, agency, self-determination, and being a stakeholder all serving as motivating factors for student behaviors (Brecke & Jensen, 2007). Multiple studies have also found that service-learners' level of motivation, including intrinsic motivation to do service-learning, increased during their service-learning experience (Levesque-Bristol & Stanek, 2009; McLaughlin, 2010).

To characterize individual service-learners' behavior in the context of Chickering's (1964, 1993) development model, we employed Winne and Hadwin's (1998) model of the self-regulating learner. This model builds upon Bandura's (1986) work on self-efficacy. Bandura described the interconnectedness of individuals' biological, affective, and cognitive events with the environment surrounding them to shape their behavior and learning. Winne and Hadwin (1998) organized these interactions into four phases by which the learner processes information: defining a task, setting goals and plans, choosing tactics to learn, and metacognition. Each of the phases emerges from the learner's interaction with his or her environment (Winne, 2001). Paris and Paris (2001) asserted that self-regulated learning "emphasizes autonomy and control by the individual who monitors, directs, and regulates actions toward goals of information acquisition, expanding expertise, and self-improvement" (p. 89). For self-regulated individuals, learning is a process sustained through the effective self-management of behaviors and processes on the part of the individual learner, and also represents an endeavor in self-actualization (Maslow, 1943). The model's attention to cognitive, motivational, and contextual factors distinct to each learner (Greene & Azevedo, 2007) provides a useful framework for a careful examination of service-learners' individual learning processes.

To operationalize this combination of frameworks, we diagrammed the process of learning through service as a self-regulated learner combined with the selected developmental outcomes for identity creation (see Figure 1). Our model connects the service-learning experience with the inputs and outputs that define it as a self-regulated learning experience. The process begins with student self-selection to participate in service-learning and then sets about the process of defining tasks, setting goals, learning tactics, and reflecting. Reflection serves as the tool by which learners process their experience and reveal shifts in perceptions (Clayton & Ash, 2009; Mezirow, 1990). According to this model, empathy and ambiguity tolerance are the factors which should be affected by their experience and then revealed further in their reflections.

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<sup>1</sup> The terms *reflection* and *metacognition* are distinct and noted as such. For the purposes of this research, reflection is a process by which metacognition takes place. Metacognition is a larger overarching concept defined as "knowledge concerning one's own cognitive processes or anything related to them" (Flavell, 1976, p.232).

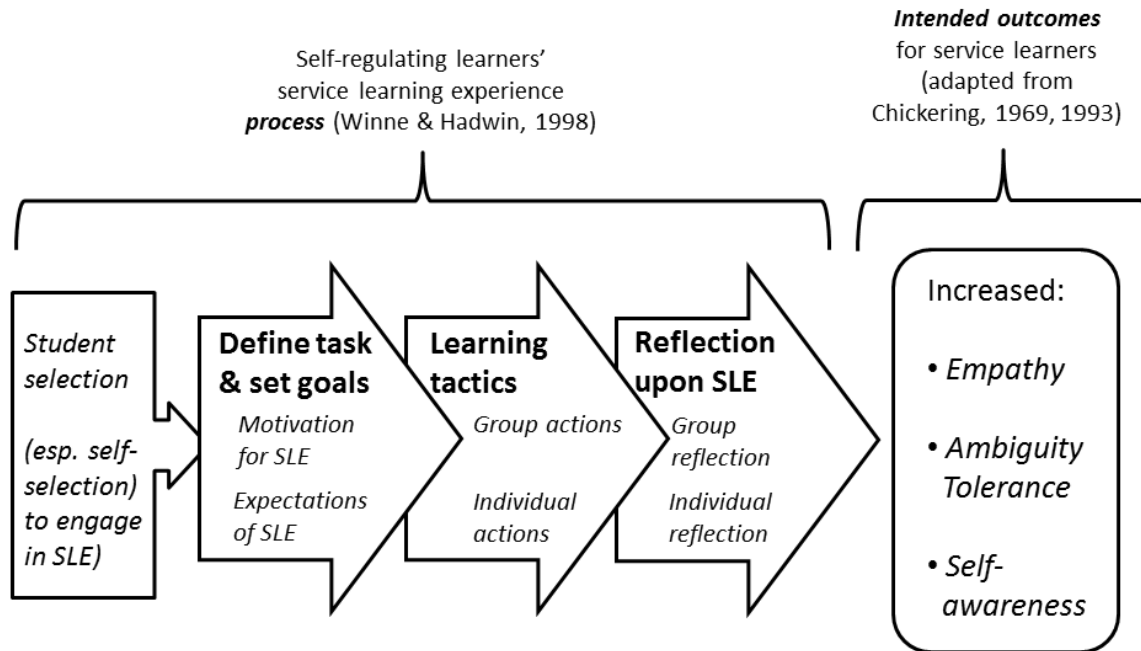


Figure 1. Model illustrating self-regulated learning and its operationalization in service-learning experiences.

Self-selection is a variable that affects motivation and must be considered when addressing service-learning (Levesque-Bristol & Stanek, 2009). Self-selected students will have different attributes, perform differently, and reach different outcomes than non-self-selected students. Weber, Schneider, and Weber (2008) found that students who self-selected service-learning projects over traditional instructional formats exhibited a higher tolerance for ambiguity. Self-selected students also typically have higher levels of intrinsic motivation and will therefore enter more deeply into service-learning experiences. For example, Levesque-Bristol, Knapp, and Fisher (2010) argued that there is a correlation between learners' intrinsic motivation and the perception that service-learning is enhancing their learning.

### Learning Outcomes, Reflection, and Student Development

Expectations for learning outcomes and satisfaction comprise another factor integral to the success of a service-learning experience (Holtzman, 2011). According to Lear and Abbott (2009), positive service-learning experiences demand that learners' expectations be aligned with those of the other stakeholders in the process. This alignment requires continual monitoring, most commonly through reflective writing. Guided reflection prompts, for example, allow learners to air negative impressions and simple misunderstandings, in turn allowing instructors to then make improvements in programming and adjust curricular objectives. McClam, Diambra, Burton, Fuss, and Fudge (2008) assessed expectations of service-learning through students' on-going reflections, which revealed participants' expectations and satisfaction with the experience.

Reflection is an essential component of all experiential learning and is particularly powerful in the context of service-learning. Throughout the literature, reflection is the assessment of choice for measuring individual growth and learning or even the success of an experiential learning program (Blumenfield, 2010; Cord & Clements, 2010; Novak, Markey, & Allen, 2007). From the learner's perspective, reflection provides an opportunity for both metacognition and emotional exploration. From a researcher's perspective, learners' reflective writing and statements can reveal the motivations underlying their

behaviors and provide context for academic success or struggles (Blumenfeld, 2010; King & Kitchener, 2004). Reflection need not be complicated or elaborate, but it must be given in a way that encourages connection making to work, allowing the individual to understand alternative explanations, explore cognitive disequilibrium, and consider challenges (Knight-McKenna, Darby, Spingler, & Shafer, 2011).

In examining students' reflection on service-learning, Sheckley and Keeton (1997) observed three patterns, or "effects," within students' thinking: the conduit effect, the accordion effect, and the cultural effect. These effects describe the ways service-learning experiences interact with students' preexisting schema during reflection. In the conduit effect, the service-learning experience fits into the student's prior accepted knowledge, and the reflective process reinforces this schema. In the accordion effect, the opposite interaction occurs: The reflection allows the student to see how the experience conflicts with his or her prior schema, creating cognitive dissonance. The cultural effect describes learning that interacts with the student's sociocultural landscape as the individual reflects upon his or her prior experience of cultural norms. Sheckley and Keeton's work has been applied to service-learning with library sciences graduate students (Becker, 2000) and within undergraduate communications courses (Oster-Aaland, Sellnow, Nelson & Pearson, 2004).

## Study Purpose

The purpose of this study was to explore connections between students' empathy, ambiguity tolerance, and motivation, and their experience of a service-learning trip to a developing nation, as revealed through reflection and other disclosures. Reflection serves not only as a processing tool for learner experiences, but also as a valuable qualitative indicator of student development and change (Altheide, 1987; Creswell, 2013). The study explored three research questions:

1. What motivates students to participate in service-learning experiences?
2. How do students address ambiguity, show empathy, and reveal motivators through reflection?
3. What connections exist between service-learning participants' characteristics (i.e., empathy, motivation, ambiguity tolerance) and their reflection?

## Methodology

### Participants

The study participants included 10 students (six male, four female) from a private, mid-Atlantic university with an active community service program that offers several service trips throughout the academic year and during breaks. (A complete overview of the participants' individual demographic data is included in Table 1.) This study focused on a summer service-learning trip (SLT) to a developing Caribbean nation, the university's first international service trip. The SLT did not confer academic credit, there was no compensation for students, and there were no institutional rewards that motivated the students to take part. Two university staff members accompanied the students and facilitated the trip: the director of the community service office and the director of a global studies program. All 10 students who went on the service trip consented to participate in the study.

**Table 1.** Summary of Participant Attributes

Pseudonym	Gender	Major	College of Study	Year	Citizenship	STEM Field?
Brian	M	Environmental	Engineering	Junior	American	Y

Engineering						
Fernando	M	Bioengineering	Engineering	Junior	American	Y
Steven*	M	International Affairs/ History	Arts and Sciences	Junior	American	N
Norman	M	Architecture	Arts and Sciences	Senior	American	Y
Willow	F	Chemistry	Arts and Sciences	Junior	Ethiopian	Y
Sasha	F	Math	Arts and Sciences	Senior	American	Y
Laura	F	Architecture/ Engineering	Arts and Sciences/ Engineering	Senior	American	Y
Soraya	F	International Relations	Arts and Sciences	Sophomore	American	N
Emmitt	M	Economics	Business and Economics	Sophomore	American	Y
Kirby*	M	Materials Science & Engineering/ Integrated Business & Engineering (IBE)	Arts and Sciences/ Engineering	Senior	American	Y

*Note.* Asterisks (\*) denote the students who reflected the most deeply and completely in their journals. None of the changes in empathy or ambiguity were significant.

During their 10 days abroad, the students visited different locations within the country, usually accompanied by a guide from the local embassy. Some activities were service-oriented, such as working with boys at a juvenile detention center or repainting a school. Other activities were culturally oriented, such as attending a steel drum lesson or listening to a history lecture. The students and facilitators documented all activities using university-provided video cameras. The videos mainly captured on-the-spot reactions of students as well as end-of-day reflective discussions. One participant also kept an extensive private journal during the trip, chronicling events and recording his reflections.

Following the SLT, two participants extended their reflection into additional projects. One student entered her photography in an on-campus competition, explaining the significance of the photos through her accompanying captions. Another student created a travelogue for the university, choosing video clips that captured trip highlights and connecting the clips to locations on an interactive map of the island.

## Data Collection

The study followed a mixed-methods design to collect quantitative data on participants' empathy and ambiguity tolerance, and then analyze them within the context of the qualitative data providing "thick description" (Geertz, 1973) of students' experiences, reflections, and motivation. Participants first completed a survey before leaving the country for the SLT. The survey collected participant demographic information, asked about their motivations for going on the trip, and incorporated elements of both the AT-20 ambiguity tolerance test and the Scale of Ethnocultural Empathy (SEE). The AT-20 (MacDonald, 1970) explores whether participants view uncertainty as an opportunity or a challenge; questions posed in the survey solicit yes/no answers to statements that reveal how comfortable the participant is when faced with uncertain situations. The scale demonstrates strong reliability ( $r = .86, p < .01$ ) and a retest reliability



of .63 for a six-month interval. To measure changes in empathy, participants answered questions on the SEE, which aims to understand individuals' comfort level when interacting across cultural boundaries (Wang et al., 2003). The reliability of the SEE has been tested at ranges between  $r = .73$  to  $r = .91$ ,  $p < .01$  and has a retest reliability of .76. The SEE also has subscales built into the measurement for more a detailed understanding of the realms in which participants gain or lose aptitude. These subscales are empathic feeling and expression, empathic perspective taking, acceptance of cultural differences, and empathic awareness. Upon their return, participants re-took the survey.

The qualitative dataset included written artifacts and video reflections created by the students, including any post-SLT projects or reflections. Additionally, the researchers conducted field interviews with professionals who worked with the students (e.g., learning partners and community liaisons) to provide additional context. Finally, researchers conducted extensive semi-structured interviews with all 10 participants. These interviews were also a source of reflection for the participants, as the questions ranged from factual recounting of events that occurred during the trip to students' emotional responses and perceptions of learning. The researchers presented the participants with emergent findings as a member check and to elicit additional insights about each of the constructs being studied (Lincoln & Guba, 1985).

## Data Analysis

The data analysis followed a two-stage process in the spirit of Teddlie and Tashakkori's (2012) call for methodological eclecticism—that is, expertly using both qualitative and quantitative techniques—to promote integration and discovery. First, the researchers analyzed the qualitative data case-wise, exploring meaningful change through experiential learning for individual learners. The analysis used emergent coding to identify themes in the data, with a secondary framework drawn from Sheckley and Keeton (1997) to analyze the different reflections, processes, and interpretations reviewed earlier. Motivation was assessed by both survey questions and information volunteered through their interview responses and any written reflections. Again, the researchers followed an emergent coding process to uncover motivations and to determine if those motivations could be organized into specific themes or categories.

After creating a qualitative profile of each learner, the researchers turned to the quantitative data. First, the researchers blind-scored participants' pre- and posttest AT-20 and SEE responses. These scores were then compared to the learner profiles generated from the qualitative data to observe whether learners' self-perceptions corresponded to their quantitative scores. Researchers also noted any shifts in the AT-20 and SEE scores before and after the trip, and sought corroborating or counter evidence through triangulation in the qualitative data.

The final step of the data analysis moved from cases to groups. The researchers sorted cases by demographic group and pre-trip experience to explore patterns and connections. As findings emerged, the researchers re-examined the data for counter evidence and tested the evidentiary warrant.

## Findings

### Participant Motivation: Intrinsic Interest in Service and Cultural Learning

Participants revealed two clear themes in explaining their motivations for going on the SLT: commitment to service and interest in cultural learning. Among service-oriented participants, the survey and interview responses highlighted themes of motivation to engage in community service and a commitment to social justice. For example, Emmitt cited his experience attending a religious high school that had high expectations of service. For him, the SLT was an opportunity to continue this prior commitment during a time period that fell outside of the usual academic demands of university life. Participants who were oriented toward cultural learning expressed a desire to travel or to develop cultural understanding. Laura, for instance, explained that she sought “a greater awareness and sense of cultural understanding” and

subsequently presented a photography exhibit based upon the service-learning trip. Only one student, Soraya, presented cultural learning as her sole motivation; the other nine students identified either service or a combination of service and culture and motivating factors (see Table 2.)

**Table 2.** Summary of Participant Characteristics and Outcomes

Pseudonym	Prior SLTs	Motivation	Service Expectation	SLT Satisfaction	$\Delta$ Empathy	$\Delta$ AT
Brian	3	Culture & Service	High	High	-0.139	-2.5
Fernando	3	Service	High	Low	-0.06	0
Steven*	3	Service	High	Low	-0.61	2
Norman	3	Culture & Service	Low	High	0.03	-3
Willow	3	Service	Low	High	0.13	-3
Sasha	2	Culture & Service	Low	High	0.06	1
Laura	0	Culture & Service	High	Low	0.13	3
Soraya	0	Culture	Low	High	0.13	0
Emmitt	0	Culture & Service	High	High	0.42	1.5
Kirby*	0	Culture & Service	Low	High	0.45	-2

*Note.* Asterisks (\*) denote the students who reflected the most deeply and completely in their journals. None of the changes in empathy or ambiguity were significant.

When comparing both their pre- and post-trip survey answers and triangulating that data with their individual interviews, all 10 students appeared to be intrinsically motivated to go on the SLT. As stated, the university provided no academic credit or other incentive for participating. Instead, participants identified internal goals and aspirations that they hoped to meet through the trip. Eight out of the 10 participants stated that service was so important to them that they planned to continue engaging in community service after graduation. One student stated that he would not be involved in hands-on service in the future but would instead use his (anticipated) business success to become a philanthropist.

### Interaction Between Service-Learners' Expectations and Satisfaction

The survey and interview questions exploring participants' motivations, expectations, and satisfaction with the trip revealed an inverse relationship between the participants' anticipated level of service activity and his or her ultimate satisfaction with the SLT. Of the 10 participants, five attached high expectations to the service they would be engaged in, while the other five held low service expectations (see Table 2). All of the participants with low expectations of service were satisfied with the trip, citing the blend of service and cultural learning as a positive experience. However, of the five students who had high service expectations, three indicated they were dissatisfied with the trip. In other words, for eight of the 10 participants, the level of service expectation was inversely related to their satisfaction with the experience.

## Inverse Relationship Between Prior Experience and Changes in Empathy

When sorting the data for theme identification, a pattern in experience and survey scores emerged in relation to the novelty of the trip for participants and a positive change in empathy. Participants who had not previously taken part in a service trip had positive shifts in empathy ( $n = 6$ ,  $m = .28$  on a 6-point scale), while those who were on their third or fourth service trip saw a decrease in empathy ( $n = 4$ ,  $m = -.10$ ). This pattern of positive shifts in empathy for first-time trip participants was also evident in the qualitative data gathered from interviews and the reflections shared by Kirby, the student who kept a private reflective journal. While the learning process was highly individualized and though scores may have decreased for the seasoned veterans, they still revealed learning and empathic connection making. As one participant, for whom the SLT was his third service experience, shared, “It’s getting a different perspective on yourself because when you are in the United States you don’t get that perspective because there are some things where we are all kind of the same in certain ways.”

Another example was Norman, who was participating in a service experience for the fourth time and who had an almost negligible uptick in empathy as measured by the SEE. In his interview, however, he exhibited connection making that indicated learning and empathy gains. Norman connected the experience of an international student colleague with the experience of being “different” in another place. Upon venturing out with another student, who was an East African national and self-identified as “looking like the locals,” the Caucasian student realized he felt very out of place in the Caribbean surrounding because he looked so different. He then turned to his fellow student and proclaimed, “This must be how you feel all the time!” While the sensitivity of the connection could be debated, the participant exhibited empathetic perspective taking, an observation that coincides with the largest gain in his subscale SEE survey scores in the area of empathic perspective taking (+.57). Table 3 shows a complete reporting of the subscales from the SEE.

**Table 3.** Summary of Participant Outcomes: Scale of Ethnocultural Empathy Subscales

Pseudonym	$\Delta$ Feeling & Expression	$\Delta$ Perspective	$\Delta$ Acceptance	$\Delta$ Emp. Awareness	$\Delta$ Empathy (Overall)
Brian	-0.4	0.857143	-1	0.25	-0.139
Fernando	0	0.142857	0.2	-1	-0.06
Steven*	-0.66667	-0.28571	-0.4	-1.25	-0.61
Norman	-0.06667	0.571429	-0.6	0.25	0.03
Willow	0.333333	0.428571	-1	0.25	0.13
Sasha	0	0.285714	0	0	0.06
Laura	-0.06667	0.714286	0.4	-0.5	0.13
Soraya	0.066667	0.285714	0	0.25	0.13
Emmitt	0.733333	0.571429	0	-0.5	0.42
Kirby*	0.466667	0.857143	0.2	0	0.45

*Note.* The asterisks (\*) denote the students who reflected the most deeply and completely in their journals. There was a significant difference in the scores for empathic perspective-taking ( $M = 4.24$ ,  $SD = .80$ ,  $t = .003$ ).

## Positive Relationship Between Depth of Reflection and Magnitude of Changes in Empathy and Ambiguity Tolerance

For the two trip participants who reflected the most deeply (i.e., in journals, writing, and on video), their empathy showed the largest drops and gains, respectively. Kirby, a first-time participant, spoke at great length during the onsite video reflections, had the longest post-trip interview time of the participants, and kept an independent structured journal that was updated daily throughout the trip. As a result of this reflection, his interview answers were more detailed and the interview length, with the same question set, ran twice as long as the next longest interview. The next deepest reflector was Steven, a senior and fourth-time service-learner. Steven was both a student participant and an assistant in the university's community service office; he had helped plan the trip and he also prepared summary materials for the community service office. These processes necessarily involved significant post-trip reflection.

If reflection is thorough and deep, the changes in empathy are larger. While the average change for the five repeat-experience participants represented a decrease of .10, Steven exhibited a .61 decrease in his empathy score. For the five first-time participants, the average change in empathy represented an increase of .28. Kirby, the most active reflector, exhibited a .45 gain in empathy. Ambiguity tolerance was less conclusive in terms of connections between first-time participants and trip repeaters. However, while ambiguity tolerance did not change in a pattern that allowed for clear paths to be studied, our first-time students came to the experience with higher ambiguity tolerance ( $m = 11.5$ ) than the norming sample ( $m = 10.45$ ) presented by MacDonald (1970). Further, AT-20 scores for those who were fourth-timers dropped by over one full point.

## The Role of Individual Written Reflection

The quality of reflections varied throughout the trip. The video reflections captured the opinions and reflections of the service-trip participants from a reporting level (i.e., describing current location, mechanics of day-to-day activities, etc.). However, for those students who disclosed that they reflected outside of the video cameras, the gains can be seen in the quality of their reflection, recall in interviews, and survey scores. Kirby kept his own journal using a word-processing program. The intent was to use this journal as an "offline blog substitute" for the blogging they wanted to relay their experience to their friends and family. This journaling was detailed and included information that exhibited connections to curricular lessons, empathy, and changes in perspective. Kirby had the most marked difference in his ambiguity tolerance and ethnocultural empathy as per the pre- and posttest survey; yet, that represented a drop in AT-20 score of two points.

In contrast to the video reflections, the written reflections provided more data for analysis. These written reflections also provided the researcher with far more extensive data than the video-recorded discussions. By drawing upon Kirby's and Steven's documents (the only students who disclosed significant reflections beyond the videos and interviews), the researcher was able to track their internal processes more closely. For example, the detail provided in Kirby's journal allowed the researcher to observe the learning processes theorized by Sheckley and Keeton (1997). Observations from the journal included information that could be categorized into the conduit, accordion, and cultural effects. The examples are striking, as the student worked through experiences in the journal. In the conduit effect, the students' learning reinforces and elaborates previously developed concept. In his journal, Kirby talked about the affirmation of his belief that service-learning trips are worthwhile: "It's very rewarding to give back to the community. You always end up accomplishing other goals while doing so (learning about the local community, experiencing local culture), while accomplishing your main goal of providing service and giving back." As for the accordion effect, Kirby wrestled with feelings of discomfort due to outsider status, eventually making a connection to life back at the university. He wrote, "I—we—are definitely all outsiders here. I think we can all finally understand what it's like to be in a minority at [our institution]." This may point to an explanation for Kirby's drop in ambiguity tolerance, as the outsider status disrupted the norm for the student in a way he clearly addressed in his reflection. Finally, the cultural effect was

clear in Kirby's discussion of his understanding of service in different societal contexts. These were observations that neither agreed nor disagreed with held beliefs, but represented learning as a result of being placed in a different culture. Kirby mused: "We discussed on the bus today that many [local citizens] don't understand this concept of service that we have; many considered it odd and somewhat heroic that we chose to perform service over going to the beach." This observation shows the student absorbing different cultural contexts for the very purpose of his trip and understanding how the population he is working with views his service.

## Discussion and Implications

One purpose of this study was to test the applicability of Winne and Hadwin's (2008) self-regulated learner framework to a service-learning context. We found that this framework was effective in guiding our appropriate choice of instrumentation and it revealed the critical role of reflection in processing the experience. The offline, private reflections afforded a space for participants to engage in deep thinking and growth, and future education and research design would benefit from the incorporation of deeper, private reflections. The quality, depth, and development of reflection leads one to Mezirow's (1990) and Clayton and Ash's (2009) affirmation of critical reflection as a necessary component of transformative development. Reflection is not only a research construct, but also a long-standing tool for growth and student development with regard to service-learning. Finally, the methodology chosen—that is, mixed methodology blending psychometric scores and qualitative reflection data—was a beneficial setup for capturing a more holistic picture of student experience and development.

As we triangulated within our cases—working among the interviews, survey responses, and documents/video transcripts—we found that the students had a strong sense of individual identity in relation to the personality traits tested. Those who were clearly frustrated by a lack of planning or their ability to "go with the flow" matched well with their AT-20 and SEE measurements. The sequencing of the data analysis—first coding the interviews and documents and then turning to the survey data—strengthened our impression of alignment between the qualitative and quantitative data sources and our confidence in our findings. One curious outlier worth considering in future research was the experience of Kirby, who lost points between the pre- and posttest for his AT-20 despite his acting as a super-reflector on the SLT experience. It would be worth considering, in future research, if an additional or different measure might be used to better understand the AT-20, or if other qualitative data collection mechanisms might be used to gain a fuller picture of that development.

Looking across our cases in their differing characteristics and outcomes, we were able to identify a profile of participants with maximum growth potential. These participants were going on this trip for the first time, self-identifying as casual community service participants during the school year, and motivated by an interest in culture. As discussed earlier, first-time participants all increased their empathy scores ( $m = .28$ ). Participants with the contrasting profile—that is, a repeat service trip participant (third time or more) with a high expectation of service—were disappointed with level of service but still appreciated the cultural component of the trip. When comparing this interview data to the empathy scores, it could be speculated that expectations hindered growth and left the participants dissatisfied. Thus, more research is needed to establish this as a phenomenon and understand its wider meaning. Indeed, this has been identified by scholars like McKeown (2006) as a priority for future research on short-term study abroad—and in our case service-learning trips.

The post-trip interviews comprised valuable research tools that provided a deeper and more complete understanding of the participants and their intentions and motivations. These interviews provided greater structure than the in-process video reflections recorded during the trip. As an example of the significance of structured reflection, Kirby kept his own structured blog. His empathy changed much more dramatically and positively than any other trip participant. Thus, we recommend that future service-learning projects and/or research efforts structure students' reflections (whether written or spoken, public or private) to ensure quality of reflection and guide the students more specifically toward learning

objectives. In future experimentation, reflection tools such as structured blogging or creation of reflective narratives and social-media curation through tools such as Storify ([www.storify.com](http://www.storify.com)) should be explored.

Colleges and universities are implementing service-learning to varied degrees and audiences throughout the nation and abroad. Coupled with the increasing popularity of service-learning is the changing face of study abroad to encompass more experiential learning and service abroad (Kutner, 2010). Higher education is internationalizing, and the ability to understand the experiential learning aspects that come with study abroad and service-learning will be necessary to meet that mission. At the same time, student identity development and individual learning markers must be understood to give the most rounded, deep-learning experience to undergraduate students. Our study intentionally selected a small set of participants and variables to observe and research. A wider study could yield different results and trends that are less likely to emerge in a sample size of 10.

## Conclusion

While this sample population represented a small fraction of undergraduates who participate in service trips, the connections and transformations that happened as a result of their experiences is telling. The findings of this study point to the importance of reflection in the service-learning process; however, more research must be done to understand what types of reflection are most useful in aiding the identity development and learning process. The use of reflection to work through lessons learned—both intentional and experiential—is necessary to allow for the deepening of an experience such as international service-learning. Reflection allows for learners to make more connections with the experience and its relation to their life. Technology has great potential to transform the reflective practice and to elicit deeper insights from students. If the experience of the super-reflecting first-time participant in this study is any indication, the structuring of regular reflection writing can yield changes in empathy and ambiguity tolerance, and allow for a more meaningful service experience.

Whether the goal is to create new knowledge, develop once-latent character traits, or create cognitive dissonance that radically shifts a learner's perspective, education is about change. That change cannot happen without giving learners the space to step back and reflect on lessons and experiences learned. Reflection is essential to change, and it is through such change that learning and development occurs. This study highlighted both the importance of individual reflection for positive changes in empathy, as well as the efficacy of reflection as an assessment for service-learning. Future research should examine the different types of reflection and its effect on the depth and meaning of experiential learning and new knowledge creation.

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