# Service Learning in Action:
# Integrating Reflection to Deepen the Educational Experience

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## Abstract

A constructivist learning environment perspective was applied to the potential for library science international service learning projects to provide a short term learning environment that introduces pedagogy, provides the opportunity to develop and apply new skills, energizes students to develop cultural competence, and develops reflective skills towards the pursuit of wisdom. Through the service learning experience, students are able to contribute directly to underserved communities while evolving their own cultural intelligence. The role of reflection in the service learning environment emerged as the dimension with highest significance in terms of short term educational goals of the program and long term student development as citizens of the world. Students reported that the actual experience of reflective behavior exceeded their anticipated levels of reflection at the beginning of the project. Professors reflected on the overall results in order to enrich the experience for future participants.

*Keywords:* learning environments, international service learning, assessment, reflection, pedagogy

## Introduction

Education ideally fulfills two outcomes: it empowers individuals with the knowledge necessary to approach economic challenges from a position of strength, and it provides richness of experience by exposing the learner to facets of culture that allows for the informed and responsible use of gained knowledge. These objectives can be met by service learning projects (SLP) that provide a temporary learning environment to accomplish educational goals.

Since 2003 the College of Information (COI) at the University of North Texas (UNT) has sponsored library science SLPs in Thailand (2003 to 2006), Albania (2008), Ukraine (2010), Peru (2011), and Russia (2012). In each setting, students and faculty worked for a three week period as a project team with partner educational institutions to assess and improve library service for K-12 international students. As with any SLP, previous projects have provided students from UNT with a combination of real-world practice in school library settings along with exposure to cultural experiences that cannot be replicated in the classroom setting.

For this study, "service learning" is defined as a course of study that integrates classroom based instruction and hands-on activities with exposure to local concerns and cultural influences, ultimately directed toward meeting local needs (Florman, Just, Naka, Peterson & Seaba, 2009). Service learning differs from volunteerism in that it "deliberately integrates community service activities with educational objectives" (Bringle & Hatcher, 1999, p. 179). "International", for the purposes of this study, is defined as: occurring in a country outside of one's country of residence or origin. In the case of this study, all of the participants are citizens of the United States, with the project occurring in Russia.

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Service learning projects (SLPs) provide students of all ages and backgrounds with opportunities to integrate real world experiences into the learning framework. The questions this study seeks to consider are: how do service learning environments (SLEs) serve the education of undergraduate and graduate library science students in terms of core competencies and cultural development? Furthermore, how can these experiences benefit underserved communities and cultures, specifically in countries outside the United States?

Numerous studies detail the educational and experiential value of academic SLPs in both local and international settings (Barry, 2011; Bringle & Hatcher, 1999; Burns, 1998; Giles & Eyler, 1994; Nutefall, 2009; Riddle, 2003); furthermore, each of these studies highlights the importance of reflection as a differentiating factor between volunteer projects and SLPs. Reflection is an attribution that informs and transforms knowledge and action (Risko, Roskos & Vukelich, 2002). By creating learning opportunities where students can reflect and assess their own learning the educational value of a service learning environment can be extended to support the development of reflective thinkers (Jones & Dotson, 2010).

While there are a limited number of studies that detail methodologies for assessing the impact of service learning on students, development of a comprehensive toolset to assess the effectiveness of SLPs as learning environments is necessary. This pilot study seeks to apply a constructivist learning environment perspective to the assessment of an international SLP involving Library and Information Science students.

## Theoretical Framework

Theoretically, the study was grounded on the constructivist point of view that learning environments are individual "constructions" (Tobin & Fraser, 1998, p. 626) which are neither independent from, nor external to their participants (Lorsbach & Basolo, 1998). Lorsbach and Basolo state that students and teacher simultaneously contribute to the creation of their learning environment; they interact within it and individually perceive it as observers. This view emphasizes the importance of student and teacher perceptions in the study of learning environments. These perceptions reflect one's personal interpretation and beliefs of the degree to which the physical and social setting of a class permits or hinders learning.

The aspect of learning environment research which focuses on conceptualizing, assessing, and investigating how *classroom participants* perceive the socio/psychological aspects of their learning environment has received significant attention over the past 30 years and has been used to evaluate educational reforms (Dryden & Fraser, 1998; Taylor, Fraser & Fisher, 1997). Assessing how *school library participants* perceive the socio/psychological aspect of their learning environment has been studied recently (Schultz-Jones & Ledbetter, 2009, 2010a, 2010b) and draws on the foundation of learning environment research established for the classroom, with emphasis on the science classroom.

The context for learning environment research uses the following definition: "*Learning environment* refers to the social, psychological and pedagogical contexts in which learning occurs and which affect student achievement and attitudes" (Fraser, 1998a, p. 3). The consideration of a classroom's learning environment built on the foundational work of Lewin (1936) and Murray (1938) and advanced with the development of evaluation instruments. As research on classroom learning environments continued to grow, the number of evaluation instruments increased in Western and non-Western countries (Fraser, 2002, 2007). These instruments have been used in several research studies reviewed by Fraser (1998b; 1998c), including investigations of associations between learning outcomes and classroom environments (McRobbie & Fraser, 1993) and the evaluation of educational innovations (Ogbuehi & Fraser, 2007; Maor & Fraser, 1996; Martin-Dunlop & Fraser, 2008; Monsen & Frederickson, 2004). Despite these documented efforts an examination of the context within which learning occurs in a project team school service learning environment has not included an application of the *learning environment* paradigm for assessment. Prior to 2009, these instruments had not been used in a school library setting (Schultz-Jones & Ledbetter, 2009, 2010a, 2010b).

For the purposes of this study two learning environment instruments were selected to form the basis of assessment because they are based on a psychological view of learning that focused on students as co-constructors of their own knowledge (Goh, Young & Fraser, 1995; Fraser & O'Brien, 1985). One has been used in past school learning environment research and one was recently developed for the school library environment. The questionnaires have two distinct applications: student assessment of the preferred learning environment and student assessment of the current learning environment. Both

instruments reflect the classification of scales according to Moos' (1974) scheme for classifying human environments into the three basic dimensions of Relationship (the nature and intensity of personal relationships within the environment, the extent to which people are involved in the environment and support and help each other), Personal Development (basic directions along which personal growth and self-enhancement tend to occur), and System Maintenance and System Change (extent to which the environment is orderly, clear in expectations, maintains control and is responsive to change) (Fraser, 1998c).

The *My Classroom Inventory* (MCI) is a valid and reliable instrument for the assessment of students' perceptions of constructivist classroom learning environments. While it was developed for use at the primary school level for children aged 8-12 (Fraser, 1998c), the MCI was selected as a basis for use with this assessment of a project team because of its distinctive ability to characterize the specific dimensions of satisfaction, competition, friction, difficulty and cohesion. These five dimensions relate to and support the development of inquiry based learning, and typifies the experiences of project team members as evidenced by prior service learning projects.

The *How My Library Supports Inquiry (HMLSI)* questionnaires were developed to evaluate student perceptions of student learning in an inquiry-based school library learning environment and the effect of this environment on student literacy and by extension, the *social good* (Schultz-Jones & Ledbetter, 2013). The development of these instruments was based on the MCI and the *What Is Happening In My Class* (WIHIC), developed by Fraser, Fisher and McRobbie (1996) for use in the context of secondary school level classroom environments and introduced the dimension of "reflection". Each HMLSI questionnaire uses 28 items comprising seven scales to measure students' perceptions of the degree to which certain psychosocial factors are prevalent in the school library: reflection, librarian support, involvement, investigation, task orientation, cooperation, and equity. These dimensions relate to and support the development of inquiry based learning and a constructivist learning environment. The factor structure, internal consistency reliability, discriminant validity, and the ability to distinguish between different classes and groups were supported for both instruments. Validation of these instruments used data from a Texas study of 872 elementary students and 639 secondary students, principal components factor analysis with varimax rotation and Kaiser Normalization to confirm the *a priori* structure of the questionnaires.

The *MCI* and *HMLSI* instruments were further adapted to accommodate data collection in a temporary project team learning environment at an international school setting by adapting the language to recognize the service learning environment. The modified instruments are named *My Perception of Service Learning Environments* (MPSLE) with ten elements assessed: Reflection, Faculty Support, Involvement, Investigation, Task Orientation, Cooperation, Equity, Satisfaction, Friction, and Cohesion. Incorporation of these instruments contributes a unique design for consideration of a variety of school library contexts within the burgeoning field of learning environments research (Nix, Ledbetter, & Fraser, 2001).

Since the school library provides a learning environment for the development of inquiry skills to advance student achievement, regardless of national location, the application of these assessment tools to an international service learning project in a school library context is worth examination. Further, this study of psychosocial aspects of the learning environment offers potentially valuable ideas for incorporation by library science educators and by extension the students with whom they interact. Much of the learning environment research focuses on the perception of a learning environment and the extent to which this perception matches what is preferred by students. There is a gap in the literature, however, on efforts to use this research as an assessment tool that can be used to transform a temporary learning environment to meet and enrich educational objectives. With this research study we propose to move the focus on perception to transformation with service learning projects by emphasizing the role of reflection in the learning process.

The concept of reflection was introduced by Dewey (1933) and was considered to be a cognitive process of problem solving or thinking that was used to resolve an issue (Dewey, 1944). As Hatton and Smith (1995) record, he viewed reflection as "an active and deliberative cognitive process, involving sequences of interconnected ideas which take account of underlying beliefs and knowledge" (p. 34). Dewey (1933) and Schon (1983, 1987) also consider reflection as a cyclical approach that integrates problem identification, contextualizing the problem, data gathering and consideration of possibilities. This process applies not only to activities associated with a project team but individually and collectively as students make sense of a new cultural environment. And the value of reflection is the extension of

inquiry-based learning to incorporate lifelong problem solving skills and the ability to make meaning of experiences.

Furthermore, developing a well-rounded, cosmopolitan point of view will serve the information professional in his or her life of service, regardless of location or time (Monteil-Overall, 2010). In particular, librarians of all varieties will face cross-cultural hurdles that will test their understanding and ability to interact with students or patrons. Participation in a SLP is one method of expanding one's perceptions and providing opportunities for reflection on the experience is a constructive way to deepen and extend the educational experience.

## Research Setting

In May 2012 twenty students and five faculty members with the UNT-COI service learning study abroad project traveled to Moscow and Saint Petersburg, Russia to assist a large K-12 International Baccalaureate accredited school. The school delivers educational services with and to a diverse population, with 2,000 students and 40 teachers from more than 60 countries. Two school libraries reside within the Moscow and St. Petersburg schools, one for the primary and middle grades and one for the high school students. The project involved developing a recommendation for space appropriation for a consolidated school library in the Moscow school, organizing the school libraries and developing the associated and appropriate library policies that support the school library media center and the school curriculum.

The project encompassed common library practices (cataloging, policy development, circulation, etc.), cultural exposure experiences (visiting museums, locations of interest, and attending cultural events such as concerts and ballet performances), and cultural interaction opportunities (round table meetings with members of the Russian Association of School Librarians in Moscow and St. Petersburg). The learning environment, therefore, extended beyond the school boundaries to encompass a broader cultural context.

The group consisted of two undergraduates, fifteen master's level students, one doctoral dissertation candidate, and one non-degree seeking student who graduated from the UNT Masters of Library Science program in 2009. Of the five faculty members, one was the Dean of the College who accompanied the group for the introduction of the project only. The remaining four faculty members provided instruction and support to the student project teams. The project team was further divided into five task teams, each with specific goals: technology support, policy development, catalog assessment and revision, organization and cataloging of classroom sets, and space planning. Each task team took primary responsibility for the task team goal and each task team member rotated among all task teams so everyone had experience with each task. The teams were located in a large project area where communication was easily accommodated and all team's had convenient access to each other and the accompanying faculty members.

Both the participants from UNT and the sponsoring organizations used English as the primary language for communication at the project site; the majority of interaction with native Russian speakers was isolated to experiences outside of the library setting.

## Methodology

In order to evaluate and improve the project for future participants, nineteen of the students provided feedback related to the SLP learning environment. Student participants were provided with a total of four data collection instruments: The BFI-46A Five Factor Model personality survey, a student-investigator generated social network analysis (SNA) survey, and the *My Perception of Service Learning Environments* (MPSLE) surveys based on modified versions of the *How My Library Supports Inquiry* (HMLSI) (Schultz-Jones & Ledbetter, 2012) and the *My Classroom Inventory* (MCI). The initial set of surveys (MPLSE-Preferred and BFI-46A) was distributed by the student investigator at the beginning of the project. Participants responded to surveys on their own time before depositing completed surveys in an envelope which was sealed at the conclusion of data collection. The same procedure was used for the final set of surveys (MPLSE-Actual and SNA questionnaire). Collected data remained sealed until coding and data analysis was conducted.

Students also created and submitted a photo journal based on guiding questions as part of the reflective component of the SLP and completed a team participation evaluation instrument directed at

feedback for each individual team member. This report will focus only on the learning environment surveys. Example questions from the modified instrument are provided in Table 1.

Table 1
*Instrument Example From "My Perception of Service Learning Environments" (MPLSE) Survey*

| Preferred | Actual |
|---|---|
| **Supervising Faculty Support** | |
| The supervising faculty would discuss project activities with me. | The supervising faculty discussed project activities with me. |
| The supervising faculty would be interested in my project questions. | The supervising faculty was interested in my project questions. |
| The supervising faculty would move about the project teams to talk with me. | The supervising faculty moved about the project teams to talk with me. |
| The supervising faculty's questions would help me to understand what I am contributing to the project. | The supervising faculty's questions helped me understand what I contributed to the project. |
| **Friction** | |
| Conflict would exist between team members at the project site. | Conflict existed between team members at the project site. |
| Some team members at the project site would be aggressive. | Some team members at the project site were aggressive. |
| Certain team members would always want to have their own way at the project site. | Certain team members always wanted to have their own way at the project site. |
| Team members at the project site would often engage in conflict or argue. | Team members at the project site often argued needlessly. |
| **Reflection** | |
| I would like to think about the overall consequences of the project. | I thought about the overall consequences of the project. |
| New learning would relate to any questions I ask inside and outside of the project site. | I acquired new learning related to questions I asked inside and outside of the project site. |
| I would learn how team work is a part of life both at and away from the project site. | I learned how team work is a part of life both at and away from the project site. |
| I would acquire skills and knowledge that apply to the world inside and outside of the project site. | I acquired skills and knowledge that apply to the world inside and outside of the project site. |

Students answered four, five point Likert scaled questions for each of ten dimensions: Reflection, Faculty Support, Involvement, Investigation, Task Orientation, Cooperation, Equity, Satisfaction, Friction, and Cohesion. Each student provided separate responses about the learning environment at two instances in time: the first set of responses measured preferences at the beginning of the service learning project, while the second set of responses measured feedback for the same ten dimensions based on

actual experiences at the end of the project. Data collection took place over a three week window. Data was analyzed using a standard t-test comparing means for each dimension.

# Findings

Given the relative homogeneity of the group (the majority of the group was Caucasian females between the ages of 25 and 60), no analyses were conducted on sub-groups defined by ethnic, gender, or academic program based characteristics within the overall participant group. Table 2 provides results for all scales.

Table 2
*All participants' Preferred and Actual scales compared using paired sample t-test*

| | Means | | Standard Deviations | | |
|---|---|---|---|---|---|
| Scales | Preferred | Actual | Preferred | Actual | t-test |
| Reflection | 4.12 | 4.49 | .23 | .25 | 2.22* |
| Faculty Support | 4.61 | 3.99 | .22 | .59 | -4.23* |
| Involvement | 4.33 | 4.25 | .31 | .56 | -0.45 |
| Investigation | 4.16 | 4.16 | .36 | .58 | 0.00 |
| Task Orientation | 4.42 | 4.51 | .21 | .45 | 0.48 |
| Cooperation | 4.54 | 4.58 | .34 | .28 | 0.33 |
| Equity | 4.62 | 4.47 | .27 | .43 | -0.86 |
| Satisfaction | 4.36 | 4.30 | .38 | .52 | -0.30 |
| Friction | 1.95 | 2.87 | .96 | 2.20 | 3.02* |
| Cohesion | 4.30 | 4.26 | .43 | .39 | -0.23 |

*df* = 18
*α = 0.05

Of the ten dimensions that were examined in this study, three show significance: Reflection (t-stat = 2.22, t-crit 2.10, α = 0.05), Faculty Support (t-stat = -4.23, t-crit 2.10, α = 0.05), and Friction (t-stat = 3.02, t-crit 2.10, α = 0.05). These dimensions are discussed in the following section.

# Discussion

The role of experience in the education process is well established by both John Dewey (1938) and David Kolb (1984), who felt that direct experience resulted in a transformative process when coupled with instruction. In the spirit of this perspective, reflective behavior rises to prominence. Reflection is an essential component of the service learning model that distinguishes it from the classroom environment. Bringle and Hatcher (1999) point out that, "[service learning] students frequently encounter new circumstances and challenges. These experiences often create dissonance, doubt, and confusion" (p. 180). Consequentially, reflection allows students to reconcile differences between beliefs, perceptions, and experiences. In the case of the Russia 2012 project, students reported that the actual experience of reflective behavior exceeded their anticipated levels of reflection at the beginning of the project. A number of stresses may have contributed to this finding, among them: an unfamiliar spoken and written language, library practices and tasks which may have been new to certain students, and social and cultural practices that may differ significantly from those practiced at home. Moreover, the *ad hoc* nature of the social group, comprised of near strangers, may also contribute to this reflective behavior as participants evaluate new social connections and interactions within the context of the project and the experience.

Qualitative data, in the form of individual photo journals with answers to a variety of challenge questions, will be assessed to glean the focus of student attention since the strength of Reflection as a learning environment dimension supports further focus on this element for future project iterations. Use of this data collection tool along with directed prompts or questions may provide researchers with broader perspectives not captured through the relatively limited responses offered by survey instruments.

Scores for Faculty Support indicate that students did not receive levels of faculty support as expected. When the correlation between the differences in perceptions of preferred and actual faculty support and the differences in perceptions of preferred and actual reflective experience is considered, a

positive relationship emerges (0.33, *df*=36, α=0.05), indicating that as faculty support increases, reflective behavior may increase. When actual faculty support is correlated with actual reflection, an even stronger result emerges (0.64, *df*=36, α=0.05), indicating that increasing faculty support may be a key contributing factor for a more reflective learning environment. Given the nature of the project, independent work skills and the ability of participants to make decisions is assumed, but younger generations of student may crave more interaction with peers and faculty (Becker, 2009). Conversely, the assessment encompasses four faculty members while the discrepancy may be directed at fewer than four of this faculty. Regardless, this dimension requires significant and continued educator reflection and raises the following questions: in what areas did faculty support exceed or fail student expectations, and how can faculty further support reflective behavior to encourage and deepen educational practices? This dimension will be tracked in future projects following modifications of behaviors and practices.

Friction also emerged as a dimension of significant interest. Friction displayed the greatest amount of variance between actual (2.20) and preferred levels (0.96), exceeding all other variances for actual (nearly 5:1) and preferred (between 2:1 and 3:1) dimensions. Additional analysis of the data shows that increased actual perceptions of friction were expressed by the majority of the participants. Of the 19 participants, 13 (68.4%) reported greater actual levels of friction than expressed in the preferred data. Of the remaining six participants, four participants (21%) reported less actual friction than preferred, and the remaining two participants (10.5%) reported no difference in their preferred and actual perceptions of friction. When the correlation between the differences in perceptions of preferred and actual friction and the differences in perceptions of preferred and actual reflective experience is considered, a negative relationship emerges (-0.39, *df*=36, α=0.05), indicating that as friction increases, reflective behavior may suffer. When actual friction is correlated with actual reflection, a similar result emerges (-0.33, *df*=36, α=0.05), indicating that limiting or preventing friction may contribute to a more reflective learning environment. Further analysis of the team participation evaluation instrument may also provide insight into the results for this dimension. Future projects will provide the opportunity to see if friction is unique to this participant group or is a common feature of service learning environments.

While both Faculty Support and Friction displayed significant results, neither has received the same treatment in the literature as Reflection, indicating opportunities for further exploration. Consideration of this dimension and examination of additional ways to provide reflective opportunities, either guided or interactive, will be explored to further enhance the educational opportunities for students involved in future service learning projects. Further analysis and consideration of Faculty Support and Friction will also contribute to building educationally rich and fulfilling service learning projects in the coming years.

# Conclusion

Assessing the learning environment of service learning projects is limited to this current study. Regardless of this limitation, the results are encouraging and provide directions for improvement and transformation of the service learning project experience. The K-12 International Baccalaureate accredited school of Moscow and St. Petersburg has invited UNT to continue the efforts of the project team in two subsequent years. This provides the opportunity to evolve and transform the project learning environment as we incorporate changes and measure the results of our efforts.

The use of additional assessment tools must be considered for future iterations of the project. These tools might include offering additional focus questions (some of which may request the use of narration free images as an expression of a participant's perceptions), speculative questions that explore the "whys" and "what" of participant thinking, and daily journaling activities to determine if reflective behavior is ongoing and builds upon previous experiences. By building a comprehensive bank of data related to reflection, researchers can determine if particular activities, be they cultural, educational or social, are more closely associated with reflective behavior. In addition, considering reflective behavior in the context of personality traits will allow researchers to tailor tasks and experience opportunities to maximize the potential for participant reflection. Moreover, assessment of this reflective behavior should not be isolated to one point in time and ongoing contact with participants both past and future will be established.

The cyclical approach to reflective thinking will become evident as we examine the practice of the service learning environment and emphasize relevant student self-assessment in learning, knowing and reflecting within a culturally diverse environment. However, for this to occur, researchers and faculty are

obligated to integrate this approach within future service learning projects and consider longitudinal evidence of the impact of modifications. In this way a progression of enriched experiences should be established.

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