JOURNAL OF SERVICE-LEARNING IN HIGHER EDUCATION

The Journal of Service-Learning in Higher Education is an online, international, peer-reviewed journal for the dissemination of original research regarding effective institutional-community partnerships. Our primary emphasis is to provide an outlet for sharing the methodologies and pedagogical approaches that lead to effective community-identified outcomes. The Journal of Service-Learning in Higher Education is a subscription-free journal with a review board made up of faculty from various academic disciplines of the member institutions of the University of Louisiana System as well as other nationally and internationally accredited colleges and universities and affiliated organizations

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Forward

Welcome to the 2016 edition of the Journal of Service-Learning in Higher Education. What you will see again, in this issue, is just a snapshot of the work and the passion that is inherent in university-community partnerships. Maybe you will see some of yourself, your students and your colleagues in the work reported here. Or it is possible that an idea that you have for the next course term, has been formulating - but is not quite clear until you read where others have succeeded and have faced challenges. What often goes unnoticed, year after year, are the names and the faces of the faculty who are dedicated to the design, implementation, and the leadership of service-learning courses. Teaching a transformative class is more challenging for both the instructor and the students. It takes dedication, attention to detail, and a tireless commitment to the learners' experience. This journal was created to provide an additional forum for sharing those experiences and ideas through peer-reviewed research. It was developed and is maintained through the efforts of a handful of full-time faculty and through the support of the University of Louisiana System. Dr. Morris Coats, one of our most dedicated editors and a faculty member at Nicholls State University, died this past December. This issue is dedicated to him. The Daily Comet of Lafourche Parish, Louisiana published a piece that you can find through this link. Thank you, Morris.

My Best,
David Yarbrough

Forward
by
David Yarbrough
Executive Editor

Abstract

Multi-disciplinary programs are growing, and serve an integral role in fostering knowledge transfer among disciplines and the community. Despite their importance, relatively little has been written on how to foster success in multi-disciplinary higher education engagement initiatives, particularly in ways that encompass service-learning. The current work highlights unique multi-disciplinary needs for knowledge transfer, critical and creative thinking, and building bridges between academia and practice. The SOLL model, a sustainable, integrative framework that encompasses lecture, operative, and service-learning, is summarized as one way in which to meet such multi-disciplinary needs. The current work discusses two applications of this model in graduate and undergraduate consumer science engagement initiatives.

Fostering student credibility through sustainable engagement initiatives: An application of the Service, Operative, and Lecture-Learning (SOLL) Model

Meghan E. Norris

> "Principles for the Development of a Complete Mind: Study the science of art. Study the art of science. Develop your senses- especially learn how to see. Realize that everything connects to everything else."
> — Leonardo da Vinci

Introduction

The academic world is changing in such a way that multi-disciplinary initiatives in teaching, research, and engagement are being facilitated. For example, there are now multi-disciplinary programs in cognitive science, women's studies, and environmental studies to name a few. As an exemplar program, the consumer sciences are also multi-disciplinary, including areas such as community development, consumer behavior, economics, family studies, finance, hospitality, retailing, textiles, and psychology. This non-exhaustive list of consumer science disciplines highlights the breadth of education that students in such a multi-disciplinary program typically receive. Not only are programs such as these multidisciplinary in terms of academic content, but they also require students to develop the applied skills to succeed outside of the classroom.

Despite many papers being written regarding academics and application within discrete disciplines, many such needs for multi-disciplinary programs are unique and under-recognized. For example, a primary challenge in multi-disciplinary programs is providing students from extraordinarily varied backgrounds with the academic content knowledge required for credibility in a multi-disciplinary field, in addition to hands-on applied experience for credibility within the community. Credibility is paramount when considering the qualities of a multi-disciplinary student. Credibility is comprised of expertise and trustworthiness (Hovland, Janis, & Kelley, 1953). Thus, an exemplar multi-disciplinary student would be an expert in their knowledge and skills related their specific

discipline area. Additionally, an exemplar multi-disciplinary individual would have at least tangential understanding of the other areas related to their area of expertise, demonstrating the strength of multi-disciplinary perspectives. The second component of credibility cannot be overlooked: trustworthiness. Multi-disciplinary individuals must demonstrate evidence-based knowledge and skills that are reliable and sound. If these two credibility components are missing, engagements between students and community (including industry) could lead to negative outcomes.

This paper provides an overview of the theoretical rationale underlying the Service, Operative, and Lecture-Learning (SOLL) Model (Norris, 2014) which has been suggested as a rigorous way of facilitating student credibility through experiential learning within higher education (Norris, 2014), with potential points of translation for business (Norris and Carter-Rogers, In Press). Importantly, this paper goes beyond previous publications by providing two concrete examples of how SOLL has been applied within a multi-disciplinary higher education program at both graduate and undergraduate levels. Application successes and lessons learned are discussed.

Fundamental to the SOLL model is the idea that in order to develop student credibility within a multi-disciplinary program, unique curriculum should be explicitly recognized. Specifically, there is a need for multi-disciplinary programs to 1) foster multidisciplinary knowledge transfer in both theory and practice, 2) integrate creative and critical thinking in both theory and practice, and 3) build bridges between academe and practice.

1. Fostering Knowledge-Transfer in a Multi-Disciplinary Program:

In order to be credible in multi-disciplinary academics or industry, an individual must have comprehensive and integrative multi-disciplinary training. For example, in order to be successful in community pro-health messaging, a student must know what makes a compelling campaign (psychology, marketing), must understand budgeting (finance), and must have an understanding of impact from a given campaign (economics). In addition to integrated knowledge of many areas, students in community pro-health messaging also must have creativity, demonstrating skills in areas such as design. Having a broad course load to develop comprehensive and integrated knowledge is not a challenge in and of itself, but facilitating multi-disciplinary knowledge and skill transfer among content areas requires active instructor participation in curriculum goals and development. Specifically, faculty must engage in inter-departmental discussions of curriculum goals, and design lecture material and assignments that require integration between prerequisite knowledge and current content. This can be a time-consuming and effortful process.

2. Integration between Creative and Critical Thinking:

Critical thinking is a hot topic in higher education. Although the concept of critical thinking is often discussed as one general ability, the nature of critical thinking is actually quite complex (e.g., Kennedy, Fisher, & Ennis, 1991). For example, Facione worked with the American Philosophical Association and defined critical thinking to be "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference as well as explanation of the evidential, conceptual,

methodological, criteriological, or contextual considerations upon which judgment is based" (1990).

Based on such work, it seems that critical thinking is *not* creative (Kennedy et al., 1991). Although it is now recognized that creative and critical thinking should be integrated (Beghetto & Kaufman, 2010; Sternberg, 2010; Tsai, 2012), the initial lack of integration between creative and critical thinking has resulted in an implicit tension, particularly when a multi-disciplinary area contains both arts and science components. In such disciplines, some students and faculty may desire and demonstrate strong creativity skills, whereas others rely heavily on linear, critical thinking. There is a clear need for a formal strategy in post-secondary multi-disciplinary programs to develop and integrate complementary critical and creative thinking skills.

3. Building the Bridge between Academe and Practice:

A third challenge in multi-disciplinary programs is the seeming lack of teaching how to translate knowledge between academia and practice. Often, academics are considered in an ivory tower with little understanding of "the real world." Although this lack of bridge has been addressed in terms of research (e.g., Wallerstein & Duran, 2010), there appears to be a dearth of literature addressing how to teach students to build such bridges. Furthermore, bridge building must be taught with care, fostering a sense of responsibility on behalf of students. A poor interaction could lead to negative outcomes for organizations and a failed learning opportunity for students.

Developing Faculty and Student Credibility in a Multi-Disciplinary Program through Engagement:

In order to meet multi-disciplinary needs, curriculum must foster multi-disciplinary knowledge transfer, creative and critical thinking, and build trustworthy bridges between academia and the community. To ensure credibility, curriculum should address these needs in a multi-level approach that matches the needs of a multi-disciplinary program. The current work overviews and provides examples of a framework to assist faculty in reaching these program outcomes. This model specifically demonstrates a way to incorporate traditional lecture based learning, operative skills-based learning, and service-learning at both the undergraduate and graduate level.

An Overview of the SOLL Model

Many models exist to account for learning, and it is not the intention of this model to account for *how* learning occurs. Rather, the Service, Operative, and Lecture Learning (SOLL) Model is a multi-method of curriculum development that fosters credibility through knowledge transfer, creative and critical thinking, and bridge building across three dimensions: the content dimension (lecture-based learning), the skill creation and development dimension (operational learning), and the application/evaluation (service-learning) dimension (Norris, 2014).
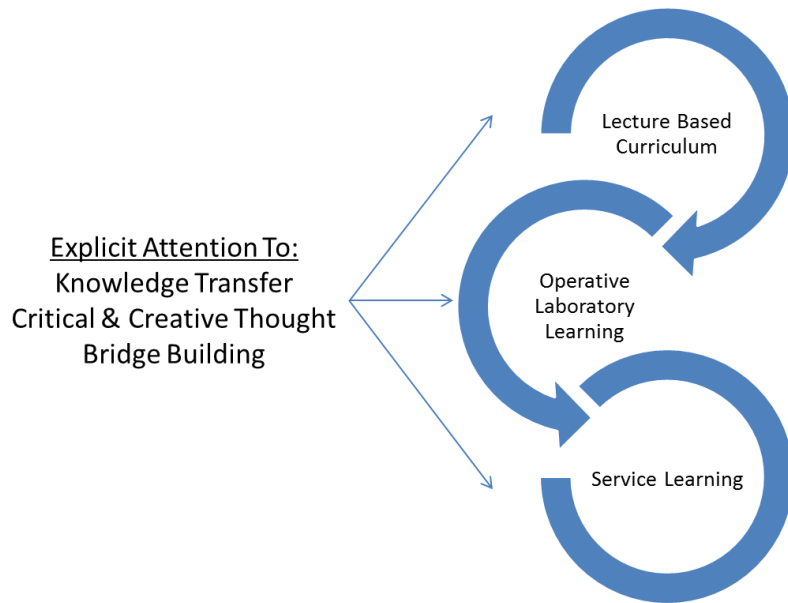
Figure 1. The SOLL framework for developing multi-disciplinary curriculum (Norris, 2014)

Lecture-Based Learning: Lectures remain the primary teaching method used in universities (Edwards, Smith, & Webb, 2001). Although lectures may risk lacking interaction and engagement (e.g., Black, 2005; Kozma, Belle, & Williams, 1978), they do have positive aspects: good lectures have been shown to inspire (Edwards et al., 2001), promote student consideration of provocative ideas and current events (Donicar, 2005), and lectures provide students with an opportunity to have assistance navigating complex scholarly issues (Laing, 1968). The contention of this model is *not* that university lectures should be avoided, but rather traditional lecture formats should be supplemented with additional forms of learning, ideally within the same course for maximum student engagement with the content.

Lectures provide an ideal opportunity to begin facilitating knowledge transfer among related disciplines. They allow for discussion of case studies, video presentation of complex scenarios, and the instructor can explicitly probe both creative and critical thought by referring to content from related disciplines. The foundations for connections among academia and the community can be made through making connections between community challenges and course material.

Operational Learning: Operational, or functional, learning focuses on students developing and refining the specific processes and skills needed to achieve a certain outcome. This type of learning would be most easily fostered in a lab setting where students can engage in hands-on or simulated experience of a given concept.

Despite the intuitive necessity for quality laboratory assignments, research suggests that many labs fail to achieve their goals. Specifically, professors are spending time and effort in managerial tasks rather than probing and challenging student thoughts and skills (Hofstein & Lunetta, 2003). Additionally, as Hofstein & Lunetta demonstrate, most lab assessments, at least in scientific domains, focus on paper-and-pencil

assessments rather than practical skills obtained. Applications of the current model probe and challenge student thoughts and skills while minimizing administrative time, and stressing the importance of skill creation, development, execution, and refinement.

Like lectures, operational learning contexts provide opportunities for comprehensive learning, albeit in a skills-based context. Knowledge transfer can occur through operational learning by creating assignments that require integration of content and skills across disciplines. For example, a mass-messaging assignment could include a budgeting component complimenting a traditional design element. By thoughtfully integrating content from multiple disciplines, assignments will engage students in creative thinking through the necessity of translation among discipline content, and will also engage students in critical thinking to evaluate the resulting product. Allowing students to self-generate "real world" challenges to address in operative learning assignments facilitates student commitment to the project, and highlights the connections between coursework and the community.

Service-Learning: Service-learning, according to the National Service-Leaning Clearinghouse (n.d), is a pedagogy that strives to integrate meaningful community service with traditional classroom learning to enrich learning, foster student civic responsibilities, and strengthen communities. Thus, service-learning is not merely engaging in community service, but rather fostering translation between scholarly learning, and community application for the greater good. Service-learning initiatives have been shown to have numerous positive student learning outcomes including development of personal efficacy, leadership, communication, and sense of social responsibility (see Eyler, Giles Jr., Stenson, & Gray, 2001 for a comprehensive review).

Despite positive student learning outcomes, service-learning can be unsustainable, and very little has been written about the professor's role in service-learning (Cushman, 2002). Thus, there is a need for faculty to have exemplar models of integrating service-learning principles with traditional classroom contexts to promote sustainable service-learning initiatives. By designing course objectives that promote the use of well-known teaching methods such as lectures and operative learning assignments that directly support service-learning initiatives, professors may be better able to maintain such initiatives.

Service-learning also provides a venue to foster the learning objectives outlined in the SOLL model. Knowledge transfer is a necessity in service-learning projects. Students are required to draw on their knowledge base in order to successfully engage and better communities. Because applied contexts are so varied, students will also necessarily engage in creative and critical thinking to achieve their goals related to their particular community engagement opportunity. Students should critically evaluate creatively generated ideas, demonstrating that they are trustworthy participants in the engagement. Student identification of real-world issues that are course relevant begins to foster connection with the community. Engaging directly with those issues furthers this connection in meaningful ways. If lecture and operative learning reliably highlighted the importance of synergies among multi-disciplinary knowledge, creative and critical thinking, and bridge building, sustainable and fruitful service-learning outcomes should result.

Case Study 1: Application of SOLL to Post-Graduate Course Development

The SOLL framework was first applied in an introduction to research post-graduate course in the consumer sciences.

Lecture Learning: Lectures were delivered twice per week in 75-minute sessions. Lectures primarily involved critical evaluation and discussion of scholarly research papers across disciplines in the consumer sciences. Class time additionally provided a platform for guest lectures from experts in multiple domains of the consumer sciences, providing multi-disciplinary content exposure to students. Knowledge-transfer was facilitated by choosing course readings from a variety of disciplines that addressed similar content issues, fostering comparison and contrast among perspectives. Students were required to demonstrate creative thinking through generating multi-disciplinary perspectives of content application, and then demonstrate critical thinking to evaluate those generated perspectives. Bridge building was conducted at this phase by probing questions that stressed the importance of applicability and translation of research papers across different communities.

Operational Learning: Knowledge transfer was facilitated through operative learning in a number of ways. First, students were required to attend research talks across campus, promoting the use of academic skills in areas outside of expertise while also fostering connections among disciplines. Students were required to write academic abstracts for talks attended which were to include both content and applicability. This facilitated student learning of cross-discipline content, the applicability of that content, and as well fostering a critical academic skill. Students also engaged in multi-disciplinary literature reviews. Additionally, students chose to write a grant application for a project that required them to make multi-disciplinary connections in a highly valued academic context.

Operative critical and creative thought initiatives were paramount in this class. Discussions and assignments highlighted for students that many critical questions could be applied across disciplines, such as considering the nature of an experimental sample. Additionally, it was discussed at length how to integrate multiple methodologies to address one common problem. Through the use of carefully planned multi-disciplinary speakers who shared common themes, students were able to gain both creative and critical "a-ha!" moments as they became aware of the connections between different methods and approaches. This was evidenced in final papers where many students generated very creative syntheses among concepts covered in this class.

Finally, evidence-based bridge building through operative learning was crucial in this class. Students were taught practical research skills through two hands-on library search seminars, two required oral research talks, repeated abstract writing, and a final research proposal, all of which contained requirements for making "real-world" applicability connections. Implementing multiple instances of learning for each skill allowed for skill practice and development based on explicit feedback from the instructor. Students reported that they appreciated these repeated learning experiences to develop expertise.

Service-Learning: Service-learning was a new concept to the graduate students involved in this project. To facilitate experiential service-learning, students were asked to choose a not-for-profit agency to learn about and work with. The students chose a national not-for-profit that promotes financial literacy, a topic that students in the class were passionate about. Students then engaged in a four-pronged service-learning project.

The first prong of this project required students to conduct background research on financial literacy, specifically exploring how to measure financial literacy. This prong specifically facilitated knowledge transfer, as financial literacy is a complex and multi-faceted problem. The second prong of this project focused on student research. Specifically, students applied for ethics clearance, programmed a Qualtrics survey on financial literacy, and conducted this survey of financial literacy in the local area. This research was conducted to facilitate critical thinking with the goal of applying student findings to assist the organization in their mission of increasing financial literacy. Third, students conducted a comprehensive audit of the online promotional materials for their chosen organization, providing evidence-based recommendations for improvement, further integrating knowledge from multiple disciplines and fostering both creative and critical thought. Finally, students engaged in canvassing on behalf of the organization, by handing out educational and promotional materials. This was the culmination of the application of SOLL, connecting students to an overarching mission of course-relevant community engagement. Students were fortunate to have received the grant mentioned in the operative learning section to fund this engagement process.

Graduate-level Outcomes Associated with Applying the SOLL Framework:

As a result of fostering knowledge transfer, critical and creative thinking, and scientific insights across three levels of learning, there were a number of tangible positive outcomes. First, students gained opportunities to compare and contrast course lecture material across disciplines. This provided opportunities for students to practice critical evaluation of content across many domains, facilitating knowledge and skill transfer. Second, students gained experience applying for grant funding and applying for ethics clearance. These are critical experiences for any student planning to conduct research during their career. Third, most students in the course encountered their first experience collecting survey data. This aspect of the project served to teach important concepts such as fair compensation, sampling techniques, and language-barrier considerations. Fourth, students were able to use their multi-disciplinary knowledge and skills to provide concrete, evidence-based suggestions for improvement to a promotional website to a not-for-profit organization. Finally, students were able to engage in promotion of an organization they felt passionate about.

Graduate-Level Limitations and Challenges:

Applying SOLL for the first time requires effort and professor engagement. With practice and publication of SOLL-based projects across courses, professor investment is expected to decrease. A second limitation is that it is easy to "dream big" as a professor when using SOLL. For example, the data collected in the post-graduate course is valuable. However, the semester has ended and it has been challenging to maintain student engagement in the process. SOLL projects should either be developed

so as to be fully completed within a given course, or should be program-level initiatives with explicit carry-over between semesters.

A second, practical challenge resulted from all assignments being provided to students online in separated, distinct files. Although the intention was to provide clarity between assignments, separating the documents actually led to greater confusion and poor conceptual linkage between lecture, operative, and service-learning components. This limitation was corrected for in the following undergraduate course by providing all assignments in one file with more explicit connections.

Case Study 2: Application of SOLL to Undergraduate Course Development
The SOLL model was applied to an undergraduate course in visual merchandising.

Lecture Learning: In this course, students met three times per week. Two meetings were lectures that were 50 minutes in length. Lectures covered traditional visual merchandising display content, in addition to social influence techniques that provided students with evidence-based, scholarly information regarding features compelling communication strategies. Lectures regularly featured videos and demonstrations to illustrate course concepts, in addition to guest-speakers and a field trip.

Students were regularly and intentionally asked to draw upon knowledge from other courses to shed new insights on current course material, fostering knowledge-transfer. Additionally, students were asked to provide creative and critical insights into problem solving issues that arose as a result of class discussion. For example, students were asked about ways to minimize theft through merchandising (creative thinking), and then were asked why those methods might fail (integrating critical thinking). Finally, lectures also included guest speakers from community retailers, and a field trip to a local retailer to foster bridge building.

Operational Learning: In order to facilitate knowledge transfer between lecture content, course prerequisite content, and skill development, this course had weekly laboratory sessions that lasted for 1 hour and 50 minutes. This was the only required laboratory-based course within the departmental course curriculum, and thus labs in this context were a novel experience for many students. Facilitating knowledge transfer, weekly lab assignments required application of multi-disciplinary content including budgeting, application of communication techniques in display, floor layout, and store design. Students engaged in critical evaluation of their creative ideas, as assignments required evidence-based justification of any recommendations made through the lab assignments (see Norris, 2013 for a laboratory guide focused on translating theory to practice). Fostering responsible bridge building, students were asked to continually think about the impact (positive and negative) of their generated merchandising plans in various communities.

Service-Learning: Service-learning is a still a new concept to many undergraduate students. To facilitate the teaching of service-learning pedagogy, students were first assigned a project to create a display that promoted service-learning activities currently happening within the department at differing levels: student engagement in service-

learning activities, faculty engagement in service-learning activities, and departmental involvement in service-learning activities. This allowed students to become familiar with the nature of service-learning engagements, and helped to create a buzz around the positive engagements happening within the institution.

Following the first program-based display project, students were asked to identify the names of not-for-profit organizations that they would like to work with. The professor first contacted those organizations and asked whether they would like to work with the visual merchandising class such that students would interview the organization to determine organization goals, and students would then create a promotional display for the organization on campus at a local location of the organization's choice.

Facilitating knowledge transfer at this level was paramount for success. Students were provided a comprehensive assignment guide (see Lab 5 in Norris, 2013) that prodded connections between lecture and laboratory content and the final service-learning display. Students necessarily engaged in creative and critical thinking when generating promotional material for their not-for-profit partner. Students were guided to provide evidence-based considerations for display goals, and then were encouraged to generate ways of achieving those goals that could be supported by evidence learned in class. This evidence-based evaluation of creative ideas fostered both comprehensive thought and evidence-based engagement.

Undergraduate Outcomes Associated With Applying The SOLL Framework:

By following the SOLL framework for undergraduate course development, a number of important educational goals were satisfied. First, students gained necessary knowledge from lectures specific to the creation of compelling merchandising, and students were encouraged to link this knowledge with what they had learned from other courses and life experience. Second, students gained safe, hands-on experience applying knowledge and developing skills through laboratory activities. Integral to all of these assignments was the requirement for students to provide scholarly justification for opinions provided. Creativity was encouraged, as was scholarly justification of newly created ideas prior to implementation. Providing such justification was challenging for students, highlighting the need to teach responsible, evidence-supported engagement. Third, students were able to apply their knowledge and skills in the "real-world" via a service-learning project that allowed them to gain recognized experience in merchandising in such a way that also bettered the community. Because students generated organizations for which to engage with, students had true ownership over their project.

In order to achieve success and maintain student motivation, a key component to such skill development was the opportunity for students to re-do any written assignments throughout the term within a week of receiving written feedback and their initial grade. Many students took advantage of the opportunity, gaining skill practice based on feedback and improving their grade.

Undergraduate Limitations and Challenges:

The application of SOLL to an undergraduate visual merchandising course was the second application of the framework and thus this initiative benefitted from valuable experience. Notably, the development of a comprehensive laboratory guide that

dovetailed with the course syllabus ensured student expectations and conceptual linkages were clear. Having a detailed laboratory guide in advance of the course made not only student life easier, but also made execution and connection much easier from an instructor standpoint. Administration time was very low, and student interaction time was high.

A challenge associated with SOLL is that it places a high degree of responsibility on students to carry out tasks, especially when engaging with community organizations. As a result of students generating the organizations to work with, the students were invested and committed to their tasks. However, ensuring that organizations have open and direct communication with the instructor is essential in maintaining positive outcomes in case student initiative wanes.

This specific SOLL application had inherent financial costs. Specifically, costs included materials for display and student transportation costs. The author was fortunate to receive a grant to administer this project that covered fees. Objects purchased for display will be stored and reused in future projects to minimize future costs.

General Discussion

Multi-disciplinary programs are pivotal, preparing students to be well-rounded in their area of expertise and thus able to make unique and critical insights. In order to foster credible multi-discipline learning, faculty can benefit from a multi-level framework for course and curriculum development. The SOLL framework for course development provides a guide for such multi-level learning by first laying a knowledge foundation through lecture-based learning. Once content has been disseminated, operative learning can occur that promotes skill creation and refinement in a laboratory setting. Once necessary skills have developed, engaging in service-learning allows skill demonstration in a context that is beneficial for both students and the community. SOLL extends past research by stressing the importance of knowledge transfer, understanding of scientific method, and both creative and critical thinking within each level of learning.

Tangible Positive Outcomes

Graduate students learned content through lectures, completed skills-based assignments, and engaged in a service-learning project. Graduate students were able to successfully apply for funds for an interdisciplinary project that sought to improve financial literacy through promotion of a not-for-profit organization. This not only led to a positive experience for those involved, but also led to significant student C.V. development. For example, students were able to include successful achievement of grant funding to their list of accomplishments, and many students chose to present their findings at local conferences.

Undergraduate students learned display and evidence-based communication concepts through lectures, and industry-relevant skills related to concept application through lab assignments. The opportunity for students to re-do lab assignments following instructor feedback allowed for constructive feedback to be incorporated into revisions resulting in additional skill practice, and improved grades upon resubmission. Finally, students were able to have ownership over a very positive service-learning

project by choosing a not-for-profit organization with which to work, and students will be able to include this work in developing portfolios.

Unresolved Issues and Future Directions

Engaging in multi-level learning fosters credibility in students and promotes positive engagement, but also requires instructor time and institution financial support. Such hindrances may have contributed to past findings that service-learning projects tend to be unsustainable. These constraints are likely to be mitigated through advanced planning, detailed syllabi and laboratory guides, and by creative attainment of required materials either by way of teaching grants, or by reusing already available materials.

Importantly, to date much of the research on service-learning has focused on student and community perceptions of success, with few instructor narratives being readily available. This prevents careful consideration of what surely are diverse instructor perceptions regarding barriers and benefits of service-learning engagements. Given the resource-intensive nature of service-learning, the field will benefit from an intentional exploration of instructor experiences. Providing examples of (un)successful engagement initiatives will provide opportunities for the service-learning community to learn, benefitting from the experiences of others. Empirically studying the efficacy of guides for how to implement service-learning will also help to build a solid foundation from which to develop sustainable service-learning engagements.

In summary, SOLL course development combines lecture, operational, and service-learning to teach knowledge transfer, critical and creative thought integration, and scientific inquiry. The current work demonstrated application of SOLL to both graduate and undergraduate students in consumer sciences. SOLL can be used to foster multi-disciplinary knowledge breath in many content areas, and is intended to promote a sustainable foundation for developing skills that are necessary for effective translation to community application.

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International service learning: benefits to African teachers.

Julie Maakrun

Introduction

Our world, largely through technological advances, has become ever increasingly interconnected. Educators are now more than ever required to learn and teach through the lens of global mindedness, requiring the capacity to teach students how their actions and the actions of others affect people in all parts of the world; encouraging them to be change agents driven through their own critical thinking and actions (Chareka, Leyte & Mills, 2010).

It is critical for pre-service teachers to build their own critical capacity to think globally and as educators they will ultimately respond in either local or global contexts. Global thinking underpinned by civic mindedness, response to need and a call to social action, have all been on the increase in higher education as universities seek to internationalise and produce more globally minded and civically engaged students, as such, service-learning has now become an increasingly important element that offers new approaches to teaching, learning and civic engagement (Boland 2009, Eisenhardt & Sittason, 2009). Consequently, service- learning provides an avenue for students to build sensitivity to issues and problems faced by members of society, heightening the importance for responsive teaching and learning (Swick, 2001).

Background

This specific service-learning experience was conducted in an international setting in Africa. It was the result of a visit to the University of Notre Dame, Australia Sydney campus by the director of a non government organisation to pre-service teachers which encompassed establishing links with the government of Kenya to provide education to some of the local community's most disadvantaged citizens. This particular community was

Abstract

This paper reports on a study aimed at exploring the benefits of an international service-learning experience for teachers employed in a rural primary school in Africa. The primary school, where these teachers are employed was the focal point of an international visit in December 2012 by twenty-four undergraduate primary education students from the University of Notre Dame, Australia. Teachers were interviewed and their responses analysed qualitatively. Explorations of teacher benefits of this visit were articulated in themes that emerged including benefits to the children at the school and the impact the visit had on teacher pedagogy. Teacher responses revealed that the teachers valued the visit immensely as it provided a balance to the school curriculum which teachers articulated as having its primary focus on the country's national standardised testing regime. The article serves as an initial investigation into the gap that exists in current service learning literature, namely the impact of international service learning experiences for members of the host community. Limitations of this study and future implications of this specific visit are also explored.

predominantly internally displaced peoples and orphaned children in a rural area situated northwest of the country's capital, Nairobi. The non-government agency, were responsible for building a primary school for the community, funding the education of students through external sponsorship and the employment of local teachers. The school has a current enrolment of 360 children aged from four to nine years. In addition to the school, the non government agency also built a children's orphanage currently meeting the needs of eighty children. At its inception, involvement in the service-learning experience was based on the good intentions of teacher educators and participating pre-service teachers.

A total of twenty four pre-service teachers elected to participate in this particular experience in December 2012 and were each responsible for the financial costs associated with the experience. In the lead up to the experience the students were required to attend a number of pre- departure meetings that covered logistics of travel; planning and resourcing a variety of teaching activities; a small degree of cultural awareness training and involvement in fundraising endeavours to support building projects in the host community.

This particular service-learning experience was structured to deliver a creative arts and sports program to children at the host school. For the host community in general, this program is delivered outside the parameters of the regular school year as the visiting pre-service teachers arrive one week after the official end of the host school's regular academic year. Children's attendance at the host school during this time is not mandatory, although many choose to continue to come. For the pre-service teachers, this visit begins directly after the conclusion of their academic year and lasts for two weeks. For teachers at the host school, this additional time is part of their negotiated workload with the non government agency and teachers are remunerated accordingly.

As a relatively new experience for both teacher educators and pre- service teachers from the University of Notre Dame – Australia's Sydney campus, the impacts of this experience are short term and outwardly visible. Children at the school became enamored with the pre-service teachers, a substantial amount of educational resources that were taken were left behind and through fundraising events building projects at the host school were undertaken. Apart from these outward signs, children at the host school participated in learning experiences that they ordinarily would not be exposed to, due in part to the demands of the education curriculum in Kenya.

Literature Review

Service learning as education

This service-learning experience reflects the complexity faced in how one would begin to place the experience in the broader contextual understanding of service learning. As a concept, service learning can be viewed through multiple lenses and perhaps can be regarded as a fusion of many possibilities including but not limited to experiential, progressive, social and multicultural education, social justice, action, community and undergraduate research and critical theory (Butin, 2006).

Through an educational lens, service learning is defined as an educational methodology that combines community service with clear learning objectives, preparation for community work, and purposeful and critical reflection (Gelmon, Holland, Driscioll, Spring & Kerrigan, 2001). As a pedagogical tool, service learning is a prevalent strategy which combines learning in community contexts with academic knowledge. As pedagogy, it seeks to combine service and academic learning to promote increased understanding of course content while helping students develop knowledge, skills and cognitive capacities to deal effectively with complex social issues and problems (Hurd 2006). Thus in education service learning is both methodology and pedagogy.

This specific experience is a pedagogical tool and is co curricular, no course credit is assigned to students who choose to participate; the experience is not directly linked to a specific course unit or learning objectives however it would be safe to argue that content knowledge embedded in a number of academic units is built upon; the experience is undertaken outside the parameters of a regular semester; students do provide a service intended to meet the needs of others and finally, vital to the notion of service learning, students engage in critical written reflection, both of which are aimed at fostering awareness of self, response to issues of diversity, social and civic responsibility .

Service learning as transformational experiences

As pedagogy and as a sustained immersive practice, service learning has immense transformational potential (Butin, 2005a). As transformational methodology, it allows for questions to be raised and for action to be taken.

Service learning as transformational experiences are realised in local, national and international settings. Service-learning in developing countries has been on the rise since the early 1990's (Rubin, 1995). It combines academic goals and instruction with experiential learning through the delivery of organised service activities designed to meet the objectives of community partners (; Crabtree, 2008; Hammersley, 2012). Specifically, service learning programs in international settings provide opportunities for students to act globally, optimising the potential that their actions will be reflected in their thinking and responding locally. International service-learning experiences in particular offer distinctive opportunities to enhance both academic achievement and the professional development of students (Brindley, Quinn, & Morton, 2009; Knutson Miller & Gonzalez, 2010). Thus, ISL experiences allow 'Participating individuals to acquire a new understanding about life, culture, self and others' further, that ... teaching abroad makes more significant and long lasting changes in teachers' classroom practices' (Walters, Garii, & Walters (2009 p.152).

Student benefits from service learning

The benefits to students from such programs, is well documented in literature. Hurd (2006) contends that research demonstrates that courses incorporating service learning provide a number of benefits including deeper understanding of course content and the ability for students to apply course materials to new situations whilst developing a better understanding of complex world problems. These types of experiences allow

students to learn through active participation and they provide a purposeful service to the community whilst engaging in reflection activities. For students, three key elements are required to make service learning a valuable experience. According to the National 4H Council (2000) there initially needs to be adequate preparation which includes setting out of objectives of the service experience; secondly, the service needs to be meaningful, it should ultimately make a difference to the community or someone's life and finally, the service experience is guided through discussion or reflective writing.

Proponents of service learning would support the notion that it enhances individuals' sense of community and belongingness to something which is greater than themselves (Lisman, 1998). Ideally for pre-service teachers, it would enhance a respect for and tolerance of diversity, gaining greater awareness of societal issues whilst developing a greater moral and ethical sense (Coles 1993). Butin (2003) would suggest that for students, the experience of engaging with those different from themselves will allow them to come to better understand, respect and engage with the cultural plurality of diverse societies, for the majority of pre-service teachers, these societies will exist in the classrooms in which they will ultimately teach. Further this cultural perspective would acknowledge that the outcomes of service learning are embedded within the process itself. 'As such, a cultural perspective privileges the affective, ethical, and formative aspects of service learning and is concerned with linking these experiential components to local, national and international issues. (2003, p.1681)

Roose (2001) contends that international placements allow teachers, the opportunity to recognise the importance of culture, its connection to community and the relationships among and between language, culture and practice. For teacher educators, ISL can be used to foster ownership of, sensitivity to, and participation in community-building activities that transform approaches to learning (Swick 2001). It can also lead to teacher educator members having an increased understanding of students, a better sense of student learning and deeper connections between themselves, the students and the institution.

Host community benefits from service learning

Whilst recent research supports the benefits of service learning for students, sadly to the detriment of service learning itself, there appears to be limited research about the impact of service learning on the members in the host community. Cruz and Giles (2000) suggest that this may in part be due to the theoretical, methodological and pragmatic difficulties in defining and analysing elements such as 'community' and 'community impact.' Research is also limited in relation to community perspective on cross cultural experiences as well as any long term impact of experiences on individuals within the communities (Crabtree, 2008). Stoecker & Tyron (2009) would contend that there is a continuing bias toward research into student learning goals, to the exclusion of community outcomes, as a result of service learning programs. Eby (1998) argued that community voice is often ignored or not heard and as such, to include the voice of community leaders in service learning would be of particular benefit so that any potential of harm or dissatisfaction as a result of the service can be avoided.

Mention needs to be made that there are some community satisfaction studies (Vernon and Ward, 1999; Ferrari and Worrall, 2000; Birdsall, 2005). Gelman et al.,

(1998) would suggest that there is positive community impact which results from service learning however, the emphasis has been on community satisfaction with students participating; relations with the institution and the immediate outcomes of the service.

Ideally, for service learning partnerships to be authentic they need to incorporate the perspectives of all stake holders. Jacoby (1996) highlights the importance that those being served must themselves control the service provided, that the needs of the community, determined by its members, will define what the service tasks will be. It can therefore be argued that for service learning to be truly transformational the voice of all stakeholders needs to be empathically responded to.

Research significance

Current literature serves to support the justification of this research. As mentioned previously, the inclusion of all stake holders is pivotal for service learning projects to be transformational.Stakeholders include students, teacher educators, institutions, organisations and members of the host community. Whilst inclusion of all stakelholders is important, this research is cognisant of the need and importance of building relationships as a vehicle towards establishing authentic transformational partnerships. Crabtree (2008) acknowledges that relationships are central to service learning experiences, regardless of whether the learning is conceptialised as teaching, development work or social justice.

Eby (1998) asserts that the majority of research around service learning is done by academics; as such the bias in research is towards the learning side of the experience. The needs of programs are skewed towards the interests of students rather than the needs of the community. He further contends that community voice is often ignored or not heard and as such, to include the voice of community leaders in service learning would be of particular benefit to avoid any potential of harm or dissatisfaction as a result of the service. Therefore, there is a critical need for organising such experiences to ensure they include community partners in ways that will at the same time meet the needs of a community whilst providing academic benefit for the student (Stoecker, et al 2009).

Research questions

The research questions were generated from the literature review. Therefore, the present study sought to seek answers from host teachers to the following questions:

Do you think that the children at the school liked having the students visit?
What impact did this visit have on the children in your class?
Do you think that the teachers at the school liked having the students visit?
Can you tell me more about why they did or why they did not?
Do you believe that this visit is a positive / negative one for the teachers at the school?
Do you have any suggestions as to how the visit can be improved?

Participants

Participants in the study were teachers, employed by the school at the time of the service learning visit. The school is situated 160 kilometres north west of Nairobi, close

to the town of Nukuru. The school currently educates 360 children, predominantly from families residing in the nearby internally displaced people's camp and from the children's orphanage, which along with the school was built and is funded by the NGO.

Participants, spoke both Kiswahili and English, were briefed as to the objectives of the study and allowed the opportunity to ask any questions of concern. Any potential language barriers were addressed by having the school's principal translate for any staff who required it, but this was not sort by any of the consenting participants. Participants were given a written consent form to sign if they agreed to participate. Confidentiality, anonymity and the right to withdraw from the study were ensured, the details of which were included in an information sheet. Participants were 77% female and 33% male, ranging in age from twenty to fifty-nine years and years of teacher experience ranged from three to thirty years.

Methodology

Data Collection and Analysis

Semi structured interviews and observations were used in order to identify the attitudes and dispositions of the teachers towards service learning. (Pickeral & Peters Eds., 1998) advocate for the use of such qualitiative tools in order to assess positive and negative features of involvement in service projects as well as assessing the responsiveness of the project to the needs and concerns of the community being served. The interviews were conducted individually with all assenting participants. Participants were advised that the interview would be conducted in English, recorded digitally and transcribed verbatim. Transcriptions would be done by an independent transcription service.

Discussion

Qualitative analysis of the interviews allowed an articulation of the benefits and value of the experience for both the children and teachers at the host school.
An articulation of the benefits to host children
One of the benefits articulated by a majority of the participants pertains to the impact on the children at the school. Participants commented that the creative arts and sports program filled a void in the holistic notion of teaching and learning at the school. This void was identified partly as the result of education being centred on national standardised assessments where the focus of learning is centred on key subject areas rather than on areas such as practical and creative arts and sport.

The following comments reflect many of the participant's views on the curriculum.
'The Kenyan syllabus, we only work, especially in the subject(s) that will come in examinations so we are just doing maths, English, science, those are the areas that (are in) the examination so we normally rush to finish those syllabus on those particular subjects but arts and crafts doesn't come in....'
'We are always trying to please someone else. I would say they're (children) tired we are doing it to attain goals and marks in (the) exam so that we can have

a better name but we're not doing it for the children. I wish we would do it purposely for the child.'

With this context of teaching and learning as a lived daily experience participants' responded to the benefits to host children of the program which reflected the curriculum void felt by teachers:

'I suppose the things they (the children) like doing, the arts, painting, drawing, singing – they really like it because in their normal timetable they really miss out on it.'

'What the students are doing is very good because we have seen a lot of activities being done. We are directing and teaching them (children) because of the exams. I think we need to change the curriculum is very tiresome to the children and it doesn't give them time to do these activities'

One of the more visible benefits commented on by the participants related to the range and variety of teaching resources provided for use in the host school. Resourcing at the school in comparative terms is limited, and so the supply of arts and crafts materials and general classroom resources were welcomed by the host teachers:

'I am very happy because you are bringing in many, many materials and the children love the materials.'

"You are coming with materials which is a very good thing...even the other teachers you know they are very much grateful'

An articulation of the benefits to host teachers

An area of perceived benefit to participants was the professional impact the service had on individual teaching pedagogy. Pedagogy here relates to the practice of what teachers do in classrooms with children that directly impact on the teaching and learning experience in the school. Participants reported:

'I've been challenged; I've learnt a lot from them (pre-service teachers) and so many other teaching methods that I didn't know, I've come to know through them, so even to me, as a teacher, I've also got(ten) something'

' Like yesterday, we went outside – I have never done it; I've taught for seventeen years and I didn't know that it can work very well. Yesterday we went out for a reading lesson. What we do in our schools here, we normally have reading – the whole class- but now they taught me a different tactic of teaching reading lesson(s)'

'I have learnt some more activities from the students and I wanted to practice before they go home,I wanted to make sure I got it...I want to incorporate the activities that I have learnt from the students so that my teaching will be very creative and something which is pleasing to children...they learn through play and they learn through doing activities.'

To what extent these attitudes manifest into the daily teaching practices long term, given the constraints previously mentioned, is unknown at this stage.
An articulation of attitudes of host teachers

Visiting pre-service teachers were assigned to work with a host teacher for the duration of the two week visit. This involved students meeting and working with host teachers to plan out what activities were going to be completed. A participant noted:

'I like them because the students also like the children; they like to play with them, they like to do activities with them. They also love them very much.'

An element that may have an impact on the benefits of service learning is when these experiences are timed and scheduled. As mentioned, for pre-service teachers, this experience occurred outside of regular semester time and for members at the host school, after the regular school year. Views were sought as to the timing of the experience and included:

'I guess this is the best time because you see we have already finished our year, our curriculum, our whole year (of) study and this time around we don't have many things to do. If you'd come in the middle of the year you would see like you're interfering with our syllabus for the year but now we have ended everything, we have completed the exams, I think there's no better time like this. Yes, this is the best.'

'...this is the best time when there's no exam, no distractions or structures set by the government so that nobody can say that you came and disrupted things.'

Future ISL experiences to the host community would be cognisant of host teachers' attitude towards the timing of the visit.

Limitations of the study

It is of note that as interviews were conducted face to face it would be difficult to eliminate social desirability bias, in essence the notion that the participants presented their answers to questions in generally positive terms rather than include negative comments. Not known at the time the research was conducted was that all teachers at the school were employed by the NGO responsible for the school. As such, it would be difficult to validate their responses as either being reflective of genuine sentiment or whether the participants felt that they needed to sound positive about the experience as it was organised in collaboration with the NGO. Additionally, children at the host school are sponsored through the NGO; some by service-learning participants, which may have had an impact on the answers given.

Conclusion and future direction

All international service learning experiences are aimed at developing global awareness, developing common understandings and collaboratively building social justice. The research findings reported here indicate that the experience is valued by host teachers for a number of reasons. It serves to fill an identified void in the school curriculum; allows host teachers an opportunity to reflect on elements of pedagogy; and for the host children it was evident that they enjoyed the company and variety of the activities and instruction they were offered.

The need to include the critical voice of community members to strengthen any continuous relationship is supported by current literature in the field. Strengthening

international service -learning experiences will be reliant on the quality of relationships developed between the host community and visiting teacher educators. Through these relationships it is anticipated that participants from the host country will continue to share their perspectives over time, and essentially limit the degree of social desirability bias in their communication. Further, if this international service learning experience is to be strengthened, teacher educators will need to continue to respond to cultural norms and sensitivities, develop open and empathic discourse so as to allow for the needs of all stakeholders to be concurrently met.

Taking subsequent groups of pre-service teachers to the same host community annually, the aim is to make the design of the experience sustainable for the long term and become critically significant to all stakeholders. Long term sustainability of the experience will potentially also allow teacher educators to explore the long term impacts of international service learning on this particular host community.

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Abstract

This paper presents a review of twelve studies on the effectiveness of international service-learning projects. The purpose of this review is to analyze, through the use of themes, the goals and issues affecting outcomes of such programs in order to evaluate the current uses of international service-learning within multiple fields. International service-learning goals range from producing a sense of civic engagement to transformational pedagogy and should be examined for their effectiveness within higher education. This study was conducted in the form of a literature review focusing on international service-learning research taken from the early 2000's to the present. Data focusing on program goals and outcomes was collected, and the findings suggest that international service-learning programs must focus on more than critical reflection in order to produce change in its participants—both students and community members. The findings also suggest that programs set goals that are not always readily met, and therefore, a few recommendations have been made for program improvement.

International Service-Learning: Common Goals and Issues Among Programs Across Disciplines

Ravyn McKee

Introduction

Service-learning pedagogy has been implemented in different disciplines throughout the years. Researchers have often argued whether service-learning should be considered a field or social movement and state that, despite being implemented in a variety of disciplines, service-learning is moving toward a field of its own due to its common body of knowledge produced as its research and theory develops (Giles, 1994). Implemented with the intent of extending service-learning across the globe in order to promote understanding and communication between nations, international service-learning research calls for an even more solid theoretical framework, as well as practice, as we consider the potential impact international service-learning can have on many disciplines around the world. Since international service-learning is interdisciplinary, there are many different goals for these programs throughout the world. However, the majority of programs implementing international service-learning as pedagogy state that civic engagement, critical reflection, and social awareness are goals that should be met through the program.

Service-learning projects hope to meet these goals through pedagogy that is both reflective and experiential. With different international service-learning programs within a variety of fields, it is important to have an understanding of the purpose and relevance of international service-learning in order to unearth effective executions of service projects on an international scale. While there have been literature reviews conducted on international service-learning literature and pedagogy (Crabtree, 2008), there still remains a need to focus on common goals and issues that arise during international service-learning projects—in all disciplines.

As a result, the purpose of this literature review is to present findings from twelve studies on international service-learning that articulate common goals and issues that arise in meeting outcomes in order to recommend improvement for future programs.

International Service-Learning Scholarship

Scope of This Review

This review was conducted to analyze the goals of twelve international service-learning projects in relation to issues that arose in meeting the outcomes of the projects as detailed from the studies. The overall goal of this review is to provide information on international service-learning so that an interested reader has enough information to see common goals between programs and understand what could be deterring the programs from meeting those goals in order to better comprehend service-learning in an international context. In order to meet the goals of this literature review, the following methods were used to locate and choose appropriate data sources.

Data Collection

For the purpose of this review, twelve case studies focusing on international service-learning were chosen because they involved student and faculty experience working within an international context as service was conducted for course credit. The purpose behind this restriction in the data collection was to ensure that the themes derived from the data analysis were emerging from similar studies in order to have continuity and consistency, especially since these studies were conducted across different disciplines. More specifically, the following criteria were used to distinguish appropriate studies to include in this review: 1. The studies must be published in academic, peer-reviewed journals. 2. The studies must be conducted on international service-learning projects as opposed to domestic service-learning projects. 3. The studies must be empirical—including qualitative or quantitative data focusing on the goals, issues, and outcomes of the international service-learning projects.

In order to meet the criteria restrictions, I looked for studies in academic databases such as JSTOR and ERIC, as well as online journals focusing on service-learning such as the *Michigan Journal of Community Service Learning* and *Frontiers: The Interdisciplinary Journal of Study Abroad*. The following keywords were implemented in my search for appropriate studies: international service-learning, goals, outcomes, and case study. The articles that were initially listed as relevant were then collected and the abstracts were read to continue narrowing down relevant sources for this study. As a result, twelve articles met all of the above criteria and were used in conducting this review.

Data Analysis

After the collection of appropriate sources for this study was complete, a content analysis of the data was conducted in order to identify themes across the different studies. This was beneficial because the studies were taken from a variety of disciplines with only the overarching focus of international service-learning in common. Therefore,

the results of this analysis provide a deeper understanding of the goals and outcomes of international service-learning programs and projects within a variety of different disciplines, places, and types of service. By conducting a content analysis on these different studies, themes emerged that provide a greater understanding of the role international service-learning plays in higher education.

The analysis process for the studies was as follows. The studies were each read once for understanding. As this was done, open-coding was used to find relevant themes in each article. Since open-coding was used initially, any information regarding the project's goals, issues, or outcomes was noted in the margins of the article. Then, after analyzing all of the articles' open codes, the codes were collected and put into larger themed codes for deeper analysis within the study as a whole. The codes that emerged dealt with project goals, issues, and recommendations for further research. Each of these themes will be expanded further in the results section of this paper. The studies used were as follows:

Figure 1

Author	*Date*	*Focus*
Prins & Webster	*2010*	*Examines student cross-cultural learning and interactions while in Belize*
Acquaye & Crewe	*2012*	*Emphasizes how a social work program at Howard University resulted in increased participation for students of color*
Liu & Lee	*2011*	*Explores cross-cultural experiences of college students performing international service-learning in Myanmar*
Miller & Gonzalez	*2010*	*Explores pre-service teacher outcomes in domestic and international service-learning contexts*
Kiely	*2005*	*Provides a longitudal case study from service-learning projects in Guatemala in order to provide a model for transformational pedagogy in international service-learning*
Amerson	*2012*	*Explores how an international service-learning (ISL) project fostered transcultural self-efficacy in nursing students participating in the project*
Cabrera & Anastasi	*2008*	*Explores whether transborder service-learning would develop a greater understanding of transborder issues and a sense of responsibility to help fix them*
Crabtree	*2013*	*Focuses on both positive and negative outcomes of a recent service-learning trip in Nicaragua*
Ducate	*2009*	*Describes a 4-week-long English class in Germany and provides student feedback on the ISL experience*

Greenburg	*2008*	*Discusses the author's experiences as he partnered, developed, and implemented an ISL project in Latin America*
Taylor	*2009*	*Examines student and teacher experiences during an ISL project in Guatemala*
King	*2004*	*Explores how students learn to critically examine self and society after engaging in an ISL project*

*All focuses taken directly from studies

Focus Questions

The questions that guided this review are as follows:
1. What are the goals of international service-learning projects, and how are these projects designed to meet their goals?
2. What issues arose within projects, and did these issues affect the project outcomes?
3. How is international service-learning research developing through these studies? What recommendations for further research were given?

Results

The results of the analysis show themes that emerged from the twelve studies on international service-learning. As a result, these themes represent commonalities in program goals, issues relative to program outcomes, and suggestions for improvement in future international service-learning programs.

Importance of Research

International service-learning scholars have stated the importance of having a research agenda, especially as service-learning moves into a field of its own (Kiely, 2005; Giles, 1994; Ver Beek, 2002; Crabtree, 2013). The importance of continued research within international service-learning stems from the need to have solid theory that guides pedagogical practice (Kiely, 2005; Giles, 1994). Therefore, international service-learning researchers state that research must be conducted in at least two areas: extensive research within the field and research conducted specifically for each service project (Giles, 1994; Crabtree, 2013; Kiely, 2005; Ver Beek; 2002). The difference between these two types of research is that research within the field focuses on theory, case studies, pedagogy, etc., while project-specific research includes learning about the community in order to further aid its needs (Ver Beek, 2002). Ver Beek (2002) states that projects must seek to understand the issues they come into contact with to a greater degree in order to be effective (62). Therefore, learning about a community before engaging in a service project allows service teams to better meet the needs of the community. On the other hand, learning about the project through qualitative and quantitative research allows members of the field to learn more about international service-learning's role in the community and education itself. Overall, international

service-learning must have a strong research agenda in order to continue improving theory and practice, which is reflected in many of the articles used in this study.

Goals for International Service-Learning

a. International Service-Learning as Civic Engagement

A major goal of service-learning has been to promote civic engagement and social awareness to students participants. International service-learning reflects these ideals as trips to other countries are used to instruct students how to analyze social dimensions through critical reflection and collaboration with the community in which they are working. Green (2003) states that service-learning has always been more than "doing good" (276), and therefore, we must instruct students in a way that allows them to develop a need for social awareness and civic engagement. Civic engagement and social awareness are goals for every one of the programs studied within this review. Not only are these goals sought for the students as they interact with community members, but the goals are also for faculty and staff as they develop a team of students for these projects. Acquaye and Crewe (2012) state that international service-learning teams often under represent students of color and that, as a goal of international service-learning, social justice should be met by all. Therefore, in order for international service-learning to accomplish its goal of civic engagement, all students and staff must develop awareness of social inequalities and injustices and then work alongside community members to produce change for good (Amerson, 2012). Furthermore, international service-learning encourages examining one's own values, culture, and country in order to engage in civic action on a global scale. Since service-learning is not merely community service, the goal of such programs becomes civic engagement that is born out of students' desires to see change in a community they have come to relate to or appreciate through their time spent within the service project (Kiely, 2004, 2005; Ver Beek, 2002).

b. International Service-Learning as a Transformative Experience

International service-learning has the ability to engage students in transformational learning as they participate in a service project that aims to change their worldview. Mezirow (1991) created a model that has helped recent international service-learning researchers explore the implications of service-learning as transformative pedagogy. This model focuses on enabling students to see the social dimensions of their own communities in light of the problems occurring in the communities they interact with in their time of service. The model's results suggest that "well-integrated service-learning programs focusing on social change, and emphasizing quality community placements, reflection, community voice, and diversity into their pedagogy are more apt to lead to transformative learning outcomes" (as cited in Kiely, 2004). Therefore, in order to be effective, transformative pedagogy through international service-learning focuses on enabling students to relate to the community through experience in order to promote transformation and understanding. In order to accomplish transformation, this theory focuses on how students learn as opposed to what they learn and also seeks student understanding during the process of both serving and learning (Kiely, 2005). As a result, it is the process of learning about the

community that provides transformation and a desire to continue aiding through service and civic engagement.

Furthermore, the studies call for service-learning as a transformative experience in a variety of different areas. While researchers like Kiely (2004, 2005) call for learning that is transformative for the students, others call for experiences that promote transformation in the community, in social dimensions, and in the type of reflection that leads to action within the service team. Kiely (2005) states that transformative learning extends well beyond critical reflection in a way that promotes lasting change in the mindset of the students engaging in the service work. He proposes that transformation moves beyond reflection through dissonance, personalizing, processing, and connecting (12). Dissonance refers to a student's realization of the inconsistencies of his or her previous frame of reference versus the contextual factors he or she sees during the length of the project (Kiely, 2005). Through dissonance, students begin a repositioning process that allows them to rethink assumptions about class and privilege as they deal with these aspects on a personal level as well as through self-examination during the service project (Kiely, 2005). Finally, as students connect with the community and project, their mindsets are transformed as they desire to contribute to lasting change through reflection and action.

c. Critical Reflection

A major focus of international service-learning pedagogy is on critical reflection that leads to action. While Miller and Gonzalez's (2010) study showed that critical reflection paired with course themes led to students' adopting career-related outcomes after their service projects (32), others have noted that critical reflection must be monitored through classroom activities with the intent of helping students move past reflection into action (Kiely, 2004, 2005; King, 2004). Furthermore, research on service-learning indicates that, while critical reflection is useful, it is not the only means necessary to developing critical consciousness within the students as they interact with the community. King (2004) discusses the defamiliarization students go through as they learn to identify more closely with community members' perspectives as opposed to their prior beliefs and assumptions (132). Through the notion of caring for the community members, students were able to defamiliarize themselves from what they thought they knew to what they saw, which allowed them to critically reflect on their preconceived notions, as well as the issues surrounding the community. However, while all of the studies represented here call for critical reflection, they all relay the importance of reflection that leads to awareness and then action—not reflection that does not move forward. The goal of service-learning is to enable students to question preconceived notions about society. As students see the contrast between their own lives versus what they witness on site during their service, they begin to question as they critically reflect on the reasons for these stark differences. Ruo-Lan and Hsin-Hua (2011) state that this reflection must be ongoing in order for students to truly learn.

Much of the critical reflection seen in these articles is through the medium of writing. The majority of international service-learning projects require students to reflect on their experiences through dialoging or writing in journals. Acquaye and Crewe (2012) assigned guided journaling after their students returned home while Greenburg (2008) and Cabrera and Anastasi (2008) required questions and journals. Jacoby (2009) states that reflection through writing should be a focus for learning in these service projects.

Therefore, it is through writing and dialoging that students are able to voice their critical reflections in a way that leads to their action.

   d.   *Nonreflective Modes of Learning*

   Kiely (2005) argues for the inclusion of nonreflective modes of learning within international service-learning projects. He states that these types of learning, such as collaboration with the community, caring, relating, and listening are ways of connecting with a community that do not require critical reflection (11). While Kiely argues that many service-learning projects value critical reflection over nonreflective modes of learning, there remains a need for these types of nonreflective learning in the literature used in this study. King (2004), a critical pedagogue analyzing the extent that privilege plays a role in service-learning projects, argues that collaboration and caring are two of the top priorities in any service-learning project. Green (2003) states this personal connection is what can aid students as they attempt to bridge their experiences with what they see at the service site (283). While many researchers have stated the need for critical reflection in order to help students identify and relate to the community members, King (2004) states that the students in his international service-learning project in Tijuana, Mexico did not need to critically reflect on the situation to understand how their experience "fundamentally differed" from the children's (130). Furthermore, Ver Beek (2002) asks service-learning educators to remember that more than a superficial understanding of the "served" community is needed in order to provide sustainable service-learning projects. In order to be effective, an international service-learning project must allow students to relate and collaborate with community members on a different level than through critical reflection alone.

   Service-learning researchers have struggled with constructivist-led critical reflection as the sole means of promoting action because critical reflection is often done in the classroom away from the community (Kiely, 2005). However, nonreflective modes of learning within the field of practice paired with critical reflection can lead to action as students relate, listen, and learn to care for the community members they come into contact with. Since the goal of international service-learning is to provide communities across the world with aid and empowerment, it is important that service-learning pedagogues and researchers remember that interpersonal collaboration between students and the community can lead to caring and empowerment—with a smaller chance of privilege from either side (King, 2004).

   e. *Sustainability*

   International service-learning has been used throughout so many disciplines that the types of service-learning opportunities are almost endless. However, while there are many types of services being conducted globally, not all of them are as useful to community members as they could be. Ver Beek (2002) notes that international service-learning pedagogues must ask whether each project, "will be sustainable given the human, environmental and economic resources available locally" (64). It is with this issue of sustainability that most international service-learning advocates struggle, and it is also the reason behind the need for long-term service projects. The studies used in this literature review consistently state that long-term projects are ideal because they promote sustainability as the community members and project staff members work together to enact change that is lasting (Ver Beek; 2002; Kiely, 2004, 2005; Crabtree, 2013; Taylor; 2009). Furthermore, sustainability is a long-term goal of international

service-learning projects, especially when the projects deal with environmental work. Therefore, researchers state that, in order to be truly effective, service-learning projects must be sustainable in order to enrich the community rather than burden it further (Ver Beek, 2002).

Issues

a. The Label "Tourist" Versus Having a Tourist Gaze

As an international practice, service-learning requires students to leave the country that they are most familiar with in order to travel to another country in order to conduct service. As a result, students are often placed in hotels and hostels and can be mistaken for tourists instead of community members. Prins and Webster's (2010) study analyzes the effect the term "tourist" had on students working on a service-learning project in Belize. Prins and Webster (2010) note that tourists are usually in a foreign country due to leisurely activities while international service-learning projects require students to work hard in order to receive academic credit (8). Researchers note that a fundamental aspect of international service-learning is collaboration with community members (Kiely, 2005; Annette, 2002; Ver Beek, 2002; Prins and Webster, 2010; King, 2004; Taylor, 2009). While the tourist label may not hinder students' ability to work with community members, it can be noted that the term tourist can conjure negative stereotypes in the community about privileged Americans on vacation instead of being willing to communicate and collaborate for change (Prins and Webster, 2010). Not only does the term tourist have the power to evoke negative emotions in community members, but this term can also produce negative feelings in the students who want to relate to the community members in order to aid and empower them (Ver Beek, 2010). Furthermore, the term tourist, paired with the notion of privilege, can further burden the barriers of culture, language, and race that are already present in these projects (Green, 2003).

On the other hand, while students do not want to be labeled tourists and will often go out of their way to dispel stereotypes, they often struggle with viewing the community from a "tourist gaze" versus from a critically reflective stance. Students working on a service project in an international context often feel they must adapt to the environment and can look at their new surroundings from a non-native or tourist perspective (Prins and Webster, 2010; Annette, 2002; Kiely, 2004, 2005; Amerson, 2012; Ruo-Lan & Hsin-Hua, 2011; Ducate, 2009). The goal is not to get students to see from a community member's stance, but rather, to instruct students how to see the social inequalities present in the community through time spent with members as well as critical reflection. If students can see past the "tourist gaze" then they are better able to work alongside the community instead of for it (Prins and Webster, 2010). Overall, while a tourist gaze can hinder the service project, students usually are able to overcome feeling out of place through interaction with community members. As students interact with community members, relationships that are mutually respectful have the chance of forming as students see that they need the help of the community members as well to effectively complete the service project (Prins and Webster, 2010).

b. Who Benefits?

While international service-learning projects are intended to provide service and awareness of unequal social dimensions, data from the studies consistently show the need to understand who is benefiting from the service. According to Ver Beek (2002), many international service-learning projects do not fully understand the "true dilemmas of poverty and consequently provide little or no lasting benefit" (55). Like Ver Beek (2002), others have commented on the notion of "spring break projects" and short-term projects that may provide little, if no help at all (to the students and community) (Kiely, 2004; Ver Beek, 2002). Furthermore, King (2004) states that international service-learning can serve as the parallel to Freire's term *extension*. This term means that the person with the expertise (in this case the service) can lend the receiver powerless (123). Ver Beek (2002) also acknowledges this distinction and states that service projects must be designed so that "all should be contributing and benefitting from the relationships [developed during the project] (58)." Therefore, the goal is to have students learning with and from the community, and then the service project becomes more than just service to a community. The project becomes a relationship-forming task that allows all involved to learn about each other and work together so that those "serving" understand that they do not have all the resources and answers. In order to be effective, international service-learning must incorporate observation of, and communication with, the community.

Not only can there be an unbalanced power dynamic between provider and receiver, but there can also be power struggles within the confines of the service-learning team itself. Higher education is still primarily dominated by the white, middle class (Green, 2003), and this notion is often reflected in project teams for service-learning. As a result, Acquaye and Crewe (2012) studied an international service-learning program dedicated to including students of color as they advocated human rights and social justice through the international service-learning project. In the same regard, Green (2003) states the need for instructors to include "difficult stories" that detail social inequalities and injustices when teaching service-learning pedagogy so that the underprivileged do not remain so. In each of these studies, the researchers expressed the need for critical reflection and action in their students in order to create opportunities for social change. However, researchers are also careful to point out that an American group dominated by privileged white students does not always suggest social change. Instead, international service-learning should include students from many different backgrounds in order to ensure the validity of the reflection and action. Finally, the studies suggest that reflective action from the students must be coupled with those in the community in order to be effective and in order to create a program structure that does not place those being "served" as inferior to the "servers."

c. Tensions in Moving From Awareness to Action

Researchers have noted the tensions students feel as they gain a more thorough awareness of social issues that extend beyond national borders. Kiely (2004) and Cabrera & Anastasi (2008) both state that students often find themselves in a strange place between awareness and action as they realize the need for change within a community but struggle with enacting that change through what they learned during their service projects. Kiely (2004) labels this struggle the *chameleon complex* and states that a disconnect can arise out of what students aim to do with the knowledge

and awareness they have gleaned from the experience versus what they actually do (16). Along with the frustration in how little students feel they accomplish, Taylor (2009) states that many service projects are under time constraints that can add pressure to those involved. Many projects are conducted over spring break and last little over a week. Other projects last much longer, but students still feel pressure if not given the right resources. Therefore, while students deal with frustrations, they can often be offset if given the right curriculum that focuses on pairing with the community, and then the proper outlet for reflection at the end of the project.

Recommendations for further research

The twelve studies used in this literature review provide valuable information on the current uses of international service-learning within the field. Each study focuses on the objectives of the service programs in order to assess whether the outcomes meet these objectives, and if not, what changes need to be made. Therefore, researchers suggest implementing their recommendations in the future for further success in international service-learning programs. Some of the recommendations are: focus on relational aspects of service-learning (Crabtree, 2013), come to learn (Ver Beek, 2002), and tell the difficult stories (Green, 2003).

Researchers have stated that the relational aspects of service-learning projects are of utmost importance because they encourage communication and understanding between project members and community members. Crabtree (2013) notes that in order to be effective, service-learning must promote the relationship between project and community members so that learning that is two-way and promotes change can happen. King (2004) states that the best way to accomplish this is through caring and cooperation and that continued research in this area is beneficial for all involved in these projects.

Ver Beek (2002) suggests that further research be conducted on the difference between projects that "come to serve" versus those that "come to learn." While he briefly shows the difference between the two, he states that continued analysis of the benefits of learning from the community is important because it creates project members that value and empower those they are working with through the service. Service projects that come to learn allow mutual-respect relationships (Prins and Webster, 2010) to form as students realize how much they can learn from the community.

Finally, Green (2003) states that in order to advance the field of service-learning, the difficult stories involving class and race must be spoken of when teaching a service-learning course. She states that white, middle class students have been taught to silence those difficult stories, but if service-learning wishes to improve and advance, then these stories must be dealt with in order to enact change in both the service projects and the community members themselves.

Each of these areas for further research were recommended by the articles used in this study with the intent of extending the field of international service-learning and improving its implementation within a variety of fields. Also, further research can be conducted on the theoretical foundations of service-learning so that we have a greater understanding of the reasoning behind the current practices of international service-

learning. Annette (2002) states that international service-learning no longer only includes U.S. or U.K. students, but rather, has truly extended around the globe as instructors see the value in fostering social justice agendas in service-learning pedagogy. However, many studies continue to focus on American international service-learning projects and programs. Therefore, it would be beneficial if future research included studies on international service-learning from a variety of countries.

Limitations

As Kraft (2002) and Kiely (2004) note, a large portion of international service-learning research is anecdotal in nature. The nature of this research has been beneficial for the purpose of this article; however, this study does contain limitations due to the parameters that were set in this particular context. As noted above, this study was conducted using case studies as a primary method of data collection. As a result, the majority of the data collected was qualitative in nature, which makes it more difficult to gather themes that translate over disciplines and populations. While, it provides interesting findings, a larger study will be necessary for more cohesiveness in the field of international service-learning.

Conclusion

International service-learning is a fast-developing field that is widespread across disciplines. With a focus on civic engagement, transformative learning, critical reflection, and caring for communities, international service-learning has the potential to impact students across the world if implemented correctly. The studies used in this literature review reveal valuable information about current international service-learning projects implemented in many different countries. These studies have shown that while critical reflection is useful, international service-learning must become more than an intellectual project to be effective. International service-learning projects must emphasis partnerships between the projects and communities, and students must understand their role in enacting change in the community in order to be truly effective in meeting the goals of international service-learning projects.

Future Research

As international service-learning scholarship progresses, the field has the opportunity to move in a variety of directions that will aid students in their development of civic engagement for social justice. As can be seen from this study, many service-learning programs implement writing journals as a means of developing reflective action; however, there are very few studies that focus on writing development within the entire international service-learning project in order to promote literacy development. Therefore, I believe that future research within international service-learning should explore the relationship between reflection and literacy—both for the students and community members—in order to align international service-learning with composition studies. Compositionist Claude Hurlbert (2012) also urges the field of composition to consider teaching from an international perspective; "one informed by international

connection, dialogues, and exchanges and that has the possibility to take us beyond national and cultural boundaries that currently limit our vision and practices" (51). While he calls for international learning in the field of composition, there remains a lack of literature dedicated to international learning within composition at this point in time. Out of the literature found for this study, only three articles were written primarily for the field of composition. While the studies used detailed the use of journals and writing for critical reflection development, none of the articles focused on how the students' writing developed throughout the entirety of the service program. Therefore, in my future research, I would like to link international service-learning to literacy development and explore the relationship between writing at all stages of the service project in order to develop literacy skills within a multilingual composition classroom.

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Service-Learning and Participation in a Capstone Spatial Science Course

David Kulhavy
Daniel Unger

Introduction

In this paper we demonstrate how PPGIS is used in spatial science by incorporating both service-learning and reflection within the Arthur Temple College of Forestry and Agriculture (ATCOFA) at Stephen F. Austin State University (SFASU). PPGIS incorporates technical skills, participation and meeting with constituents to foster social change; which mirrors a component of ATCOFA's mission statement. Schlossberg and Wyss (2007) used PPGIS and reflection in a community-based project developing a neighborhood service-learning project providing guidance on their integration within a teaching environment. They used student reflections to provide an overview of the process and to garner information on student outcomes after completion of the project. Their findings concluded that classroom-based PPGIS provided a positive learning environment; stressed the need for more community participation in the planning process; and that the timeframe of the projects was restricted by the 15 week course time. In developing a strategy for teaching a capstone spatial science course, a working knowledge of geographic information systems (GIS) is essential for ease of data entry, queries of a spatial database and preparation of a product suitable for the community user. The breath of the use of GIS is only limited by access to the user group and the compatibility of the data.

PPGIS is often considered "GIS in practice" (Sheppard, 1995). The use of PPGIS in service-learning works well in urban planning, landscape ecology and natural resources developing collaborative planning processes and disseminating spatial science information. In decision making

Abstract

Six undergraduate research projects were identified in a capstone spatial science course to demonstrate service-learning and reflection within a natural resource curriculum. Students met with state and national organizations and formulated plans for a Firewise certification program for a university; developed an historical trail encompassing cultural data into a spatial science database; assessed the geometric accuracy of the standard image bundle for DigitalGlobe's QuickBird multispectral imagery; developed a litter abatement program on a university campus; assessed the critical habitat of *Hibiscus dasycalyx*, the Neches River rose mallow, as a candidate for threatened species listing; and, assessed the utility of estimating the height of baldcypress trees, *Taxodium distichum*, from a distance using remotely sensed imagery. A Public Participation Geographic Information System (PPGIS) approach was used to incorporate service-learning into the course. Reflection was included as a critical component for students to evaluate their efforts during and at the conclusion of the projects. Results indicate that a combination of PPGIS and reflection produce a more inclusive spatial science product, heightens a student's experience, and produces a well-rounded society-ready spatial scientist.

using spatial science, local knowledge incorporation, spatial data analysis and the context of the spatial information leads to interactions of individuals and groups (Sieber, 2006). Brown (2012) reviewed PPGIS for regional and environmental planning developing a composite of attributes used in studies. Schlossberg and Shuford (2005) define PPGIS participants as stakeholders that bring knowledge or information to influence decisions.

The use of PPGIS within ATCOFA was adapted to an undergraduate senior level capstone course in spatial science. At the beginning of the course students were asked their knowledge of spatial science in the community or university and to outline a potential project. Students were adept at ArcGIS 10.1 (industry leading spatial science software emphasizing vector data; ESRI, Redlands, California) and ERDAS Imagine 10.1 (industry leading spatial science software emphasizing raster data; Intergraph, Norcross, Georgia). Once potential projects were chosen students entered into facilitated group discussions over potential skill building experience; shared skills and interacting with the community; and the value of a public-participation. Students were introduced to service-learning skills and the value of reflection as part of the capstone course.

Courses in spatial science lend themselves to service-learning and experiential educational opportunities and have historically incorporated aerial photographs, remotely sensed digital imagery via an aerial or satellite platform, GIS and global positioning systems (GPS) data. The capstone course in spatial science at ATCOFA combines strategic planning with stakeholders to achieve a result that is useful for the clients. The incorporation of PPGIS enhanced the learning experience by connecting students in the classroom with stakeholders for implementation of spatial science projects into land management decision making. The methods of Schlossberg and Wyss (2007) for incorporation of service-learning and reflection of interactions coupled with the concepts of Laituri (2003) for assessment of PPGIS case studies were utilized. Reflection of the activities chosen was an integral part of the course and increased the interaction of the students and the stakeholders. PPGIS links students and organizations to collect, analyze and interpret digital information and spatial data (Niles & Hanson, 2001). The components of Context, Connectivity, Capability and Content were utilized to evaluate the purpose, stakeholders, linkages, analysis, policies, infrastructure, computer literacy and data types and availability as the projects developed (Laituri, 2003).

Service-learning

To prepare the students for the PPGIS concept, service-learning was implemented and has the potential to reflect on and hone leadership skills through group dynamics and expert opinion (Newman, Bruyere, & Beh, 2007). Service-learning is course-based, meets identified community needs and provides reflection on the service to enhance course content and also personal values (Bringle, Hatcher, & McIntosh, 2006). Service-learning has three primary components: address a compelling issue; apply skills in an academic setting; and use purposeful reflection for student understanding for context in society. These components were used in the course as each project needed to solve (or try to solve) a compelling issue; needed to

apply spatial science skills in an academic setting; and take time for meaningful reflection for the context of the course at SFASU, the community and the region. To further assess these skills, a poster, PowerPoint presentation and final manuscript were prepared for the stakeholders.

Reflection

To fulfill incorporating reflection in spatial science, students gained critical thinking skills in both practical and theoretical environments. Reflection for service-learning in spatial science needs to be continuous, connected, challenging, in context and an integral part of the learning process (Kolb, 1984; Hatcher & Bringle, 1997; Eyler, 2002; Hatcher, 2011). As spatial science depends on one step or activity leading to another, monitoring of the process is important in the decision making process. The main common denominator in the projects was the use of ArcGIS 10.1 to create a digital working environment that was continuously modified. Essential to the success of the projects was construction of an attribute table that could be queried for decision making.

One way to strengthen the service-learning process is to engage in effective and rigorous reflection (Eyler & Giles, 1999; Eyler, 2002). Using reflection in service-learning moves students from lower order thinking skills (identify, describe, apply) to higher-order thinking skills (analyze, synthesize, evaluate) based on Bloom's Taxonomy of Educational Objectives. Early class periods were used to identify, describe and apply GIS skills to create a spatial database. Analysis, synthesis and evaluation were used to implement the findings. Prompting of questions using the rubric proposed by Ash, Clayton, and Atkinson (2005) included identifying and describing academic concepts that related to service-learning; application of the service-learning concept; analyzing and synthesizing the academic material in the context of experiences in learning. Evaluation of the material presented provides benefits for future learning. As spatial science requires an iterative process to complete tasks, the reflection portion provides a method to evaluate progress from the descriptive phase to the analytical phase. The hands-on approach to spatial science analysis lends itself to the overall functions of service-learning including critical reflection as a component that generates and deepens learning and reinforces higher order reasoning and critical thinking (Ash et al., 2005, Ash & Clayton, 2009).

Essential to effective service-learning is that the learning and service goals are integrated; experiences in the classroom and community are aligned with reflection activities and assessment; collaborative is evident; the pedagogy is flexible for capacity building for the participants (Felton & Clayton, 2011). The connection of the learning processes and outcomes makes service-learning for spatial science effective for learning and completing products but is challenging to implement in teaching (Felton & Clayton, 2011). University-community partnerships are imperative in developing service-learning opportunities for spatial science. Leitner, Elwood, Sheppard, McMaster, and McMaster (2000) categorized six models for delivery for community partnerships in spatial science including in-house GIS; university-community partnerships; publicly accessible GIS; map rooms; internet; and community GIS centers. The stakeholder-community relationship combined with communication and location of GIS set the framework for responsiveness to the needs of the stakeholders (Leitner et al., 2000).

In natural resource courses, students often work outdoors and evaluate data using spatial science. The learning approach that includes experiential learning components of active training for individuals to make learning and adaptive management are important skill sets in experiential learning in natural resources (Newman et al., 2007). GIS links technologies examining both the physical landscape and the human interactions with the landscape. The use of GIS for a particular community or locality can be used for problem solving (Laituri, 2003).

Using the concepts of Laituri (2003) these components were used to implement service-learning and provide an experiential learning environment. First is Context including purpose of the project or issue and does the problem consist of singular or multiple issues. What are the day-to-day decisions needed to arrive at a strategic outcome for both short-term and long-term gain? Second, are stakeholders represented and what are the partnerships being developed? Third are linkages with the partners as single or multiple agencies and development of professional backgrounds. Fourth is the unit of analysis, usually local or regional in our context. For Connectivity, the technology infrastructure and funding is identified across policies for facility use; and infrastructure of the GIS systems. The identification of an urban or rural setting is determined. Capabilities include the level of spatial science knowledge of the learner. For Content, data availability and information needed including public data often available at no cost; addition of new data collected; and qualitative or quantitative analysis of data. Schlossberg and Wyss (2007) suggest that a PPGIS course acts as a resource for service-learning and to take the project out of normal course requirements. They recommend developing an ongoing PPGIS laboratory to train and engage students in community projects independent of coursework.

Using these concepts, service-learning is implemented to fashion either user-requested products or GIS concepts developed for the local or regional community. Once projects are completed, an assessment is made of Context, Stakeholders, Linkages and Unit of Analysis following Laituri (2003). The inclusion of reflection in the process enhances the implementation and usefulness of the projects and provides continuity from one project to the next. Reflection gives students opportunities to include thoughts, feelings and subjective experience into courses (Molee, Henry, Sessa, & McKinney-Prupis, 2010). Service-learning is an effective pedagogy to link learning with addressing of society (Molee et al., 2010) and in natural resources service-learning promotes the context of the environment to promote learning and development (Easton & Monroe, 2009). In training natural resource professionals, learning and adaptive management need to become part of the approach to problem solving (Newman et al., 2007). By integrating adaptive management on a personal level, these individuals may be more successful in professional management needing these skills.

By incorporating community-based research early in the course, the students could meet with university (or community) members to participate in the project (Checkoway, 1997; Schlossberg & Wyss, 2007). The points are made to connect university knowledge in a way that is understandable to the local community. Incorporating service-learning enhances the experience by improving communications with stakeholders, increases the access to GIS knowledge and builds university-community partnerships (Checkoway, 1997; Schlossberg & Wyss, 2007). The benefits of the partnerships are that university often bears costs of software, hardware and data.

Community partners often do not have the GIS data sets, so university partners are important in supplying the data (Leitner et al., 2000). As Obermeyer (1998) states, students use a variety of approaches of GIS and spatial science tools to complete a project while keeping the stakeholders informed and appraised of decisions.

Context includes the type of technology and the setting for the PPGIS. These are developed in the context of service-learning to solve an issue or a problem. Within service-learning students: learn and develop with active participation in organized service experiences that meet community needs; are integrated into the curriculum for structured student time to think and interact; are provided opportunities to use newly acquired skills and knowledge with community participation; and extend their education outside the classroom into the community to foster relationships (Schlossberg & Wyss, 2007). The stakeholders work together with the participants and agencies. Reflection is an important part of the interaction as multiple feedback is required as an integrative process. This process provides focus as the project is defined and changes are made. The unit of analysis begins as a local project and expands as the details of the projects demands this. Linkages to agencies include university, community and regional cooperation. Context of the PPGIS projects includes contact with stakeholders and linkages to participants and agencies (Laituri, 2003).

Components

Components of the course included six projects (Table 1) developed to implement the PPGIS method while developing partnerships. The projects ranged from implementation of a national Firewise project at a university; adding cultural and social data to an historic trail within a GIS database; establishing GIS control points to evaluate the geometric accuracy of DigitalGlobe's QuickBird standard image bundle; using ArcGIS 10.1 to create a litter abatement project for a university campus; developing a digital photomosaic obtained from GoProHero3 images while using Python code to automate the mosaic process; and using remotely sensed data to evaluate and visually display baldcypress tree characteristics for streamside stabilization.

To assess the projects, they were defined in context of Simple to Complex with single or multiple issues with decisions made on a day-to-day basis or long-term strategic outcomes. Stakeholders are those that assisting in the decision-making of the projects and how involved they are in the partnerships and linkages as either single or multiple agencies. Trust refers to the relationship of the participants based on background and experience. Most of these projects were local with regional implications. For Content, preexisting spatial data was available for four of the six projects for spatial data.

For the Firewise project (Tables 2 & 3), students installed fuel load plots in the SFASU university forested area and entered data into the ATCOFA ArcGIS 10.1 GIS database. At this time reflection on the project included evaluation of components of the study and how each of those affected the outcome. Following this, students contacted the coordinator of the National Wildfire Working Group, Wildfire Urban Interface Team (WUI) for a fuel reduction plan. The Texas A&M Forest Service state coordinator for WUI visited the students at the university and recommended a plan for fuel reduction. This plan was approved and implemented and the students applied for Firewise

designation with SFASU becoming the first Firewise university in the United States. Students received recognition from the SFASU Board of Regents. Further reflection led to poster development and presentations at national forestry conferences.

Table 1. Spatial science projects developed through service-learning.

Project	Outcome
Firewise Communities/ USA® Recognition Program	SFASU was the first university to implement the Firewise program. An integrative process was used to identify community, install fuel measurement plots, construct an ArcGIS 10.1 GIS data set and set up queries to determine fuel load concentrations. Agency personnel were contacted and fuel loads were reduced; recognition was achieved by the Board of Regents at SFASU and the Firewise Communities program.
Ghost Trail Historic Trail Development	A 16 km trail was constructed in Nacogdoches, Texas incorporating historical data and constructing a data file in ArcGIS 10.1 to query the data for context of the information. A workbook was produced incorporating GIS locations and historic trail information and locations.
Accuracy Assessment of QuickBird Imagery	The geometric accuracy of QuickBird imagery was assessed by comparing established GPS control points in Nacogdoches, Texas with coincident raster pixels within the QuickBird image (Unger, Kulhavy, & Hung, 2013).
Litter Control	The campus of SFASU was divided into sections for groups to keep areas clean. A rating system was developed to assess litter with 0, no litter; 1, light litter; 2, moderate litter; 3 heavy litter; and 4 extreme litter. These ratings were added to an interactive ArcGIS 10.1 GIS database to update ratings. Groups were assigned to reduce litter. Digital images of litter were incorporated into the ArcGIS 10.1 GIS database and map product for use in litter clean up.
Neches River Rose Mallow Spatial Distribution	A GoProHero3 digital camera was used to create a mosaic of constructed garden plots. Data were mosaicked using Python code to rectify the images and create a digital map for query. The method was modified to evaluate distribution and location of the Neches river rose mallow, a species with limited distribution and incorporated into an ArcGIS 10.1 GIS database.
Baldcypress Evaluation	Pictometry® hyperspatial imagery was used to assess baldcypress tree height on a stream right-of-way (Unger, Kulhavy, Williams, Creech, & Hung, 2014b).

Data for the Firewise project was information rich including fuel load sampling database points, forest stand structure, GPS location of areas needed for fuel reduction

and entry of data into an ArcGIS 10.1 GIS database for spatial queries of fuel reduction areas (Table 3). The context of the project was moderate in complexity combining fuel sampling and fuel reduction. Students established measurement plots for fuels based on Deeming, Burgan, and Cohen (1977), Reeves (1988), Reeves and Lenhart (1988) and Sikkink, Luter, and Keane (2009). Decisions and linkages were made weekly in consultation with stakeholders with the Texas A&M Forest Service, ATCOFA, the City of

Table 2. Context defining the complexity of the PPGIS projects identifying the stakeholders, agency linkages; and the unit of analysis (after Laituri, 2003).

Case Study	Context: Purpose	Components		Linkages		Unit of Analysis
		Stakeholders				
	Simple → Complex	Daily Decisions → Strategic Outcomes	Marginal → Mainstream → Elite	Single → Multiple Agencies	No Trust → Trust	Local Regional → Global
Firewise	▼	▼	▼	▼	▼	▼ ▼
Ghost Trail	▼	▼	▼	▼	▼	▼
Accuracy Assessment	▼	▼	▼	▼	▼	▼
Litter Abatement	▼	▼	▼	▼	▼	▼ ▼
Rose Mallow Assessment	▼	▼	▼	▼	▼	▼
Baldcypress Height	▼	▼	▼	▼	▼	▼

Nacogdoches, and the National Wildfire Working Group. Fuels were identified by ATCOFA students and the Student Association of Fire Ecology (SAFE) and removed by the Texas A&M Forest Service after consultation with ATCOFA and SFASU based on the Community Wildfire Protection Plan Guide (Texas A&M Forest Service, 2012). Students with SAFE presented the plan and the removal of fuels to the SFASU Board of Regents. The project was conducted on a local basis but can be expanded to a regional or national scale.

For the Ghost Trail (Tables 2 & 3), historical data were incorporated into ArcGIS 10.1 as part of a 16 km walking trail. Reflection on use of the trail resulted in participants completing the President's Challenge for physical fitness. Once the trail was developed, it was accepted into a national trail database. Data were incorporated as written documentation of cultural and social points of interest along the trail and a workbook was printed for use as an historic trail guide. Data were from public sources and primarily qualitative. New data included updates to the route of the trails and additional information at each location resulting in additions to an ArcGIS 10.1 GIS database and

reprinting of the trails booklet (Table 3). Decision making was on a biweekly basis in consultation with the City of Nacogdoches, Texas and ATCOFA. The East Texas Research Center in the SFASU Steen Library was used as a reference for local historical information. A GPS map of the trail was local but the techniques for implementing historical data and an ArcGIS 10.1 GIS database can be expanded to other locations.

Table 3. Content for data availability and data types. Format, type and quality of data reflect location and how it is negotiated in cyberspace (after Laituri, 2003).

Case Study	Components			
	Content: Data Availability		Data types	
	Continuums			
	Information Rich → Information Poor	Public → Sensitive	New Data → Existing Data	Qualitative → Quantitative
Firewise	▼ (Rich)	▼ (mid)	▼ (mid)	▼ (Qualitative)
Ghost Trail	▼ (mid)	▼ (mid)	▼ (Existing)	▼ (Qualitative)
Accuracy Assessment	▼ (Rich)	▼ (mid)	▼ (New)	▼ (Quantitative)
Litter Abatement	▼ (Rich)	▼ (mid)	▼ (mid)	▼ (Qualitative)
Rose Mallow Assessment	▼ (mid)	▼ (Sensitive)	▼ (New)	▼ (Quantitative)
Baldcypress Height	▼ (Rich)	▼ (mid)	▼ (mid)	▼ (Quantitative)

An accuracy assessment (Tables 2 & 3) was developed for DigitalGlobe's QuickBird's multispectral image data of 2.44 by 2.44 meters spatial resolution encompassing the city of Nacogdoches, Texas. ERDAS Imagine 10.1 softwere was used to onscreen digitize 33 traffic line locations using a Trimble GPS Pathfinder® Pro XRS unit (Unger et al., 2013) (Table 2). To evaluate the geometric accuracy of the QuickBird data, the 33 individual traffic lines were compared to real-world Universal Transverse Mercator easting and northing coordinates of the 33 traffic line locations. Students found that QuickBird data were well within the stated positional error for a panchromatic and multispectral image bundle and can be used as a backdrop image to on-screen digitize GIS vector data (Unger et al., 2013).

For litter abatement (Tables 2 & 3), the SFASU campus was divided into segments based on litter accumulation on a scale of 0 (no litter) to 4 (excessive litter) and incorporated into an ArcGIS10.1 GIS database for cleanup. A university group was formed to assist in clean up and mapping. The project was selected by the Clinton Global Initiative for presentation as a method to galvanize groups and individuals in

campus clean ups. The Don't Mess with Texas program came to campus and celebrated the campus clean up. Presentations were made at EarthDay celebrations in Nacogdoches, Texas and with the SFASU gardens conservation education initiative. The project is continuing with target litter removal in less accessible areas of the campus forests and trails.

Hibiscus dasycalyx, the Neches River rose mallow (Tables 2 & 3), was recently added for consideration as a threatened or endangered plant (Federal Register, 2011). Its category for review was C, priority 2 for Texas. "We continue to find that listing this species is warranted but precluded as of the date of publication of this notice." (Federal Register, 2011, p. 66421). *Hibiscus dasycalyx* is a high priority listing. In the Federal Register (2012, p. 55968), *Hibiscus dasycalyx* was listed as a threatened species under the Endangered Species Act of 1973, as amended. *Hibiscus dasycalyx* was under consideration since 1997. Under the listing, 76 ha of critical habitat were designated in Cherokee, Houston, Trinity, Harrison and Nacogdoches Counties, Texas. To investigate the distribution of the Neches River rose mallow after a 1995 planting in Nacogdoches County, two GPS waypoints identifying the location of *Hibiscus dasycalyx* were located and plants, stalks and flowers were counted at the end of the 2013 growing season. Plants were located by measuring to each plant from one of two known GPS points. The project was completed in consultation with the Piney Woods Native Plant Center (PNPC), SFASU and a private property tract. To locate flowers, a GoProHero3 camera was mounted on a pole at 3 m in height and images were taken of plants and flowers. The images were mosaicked using Python code to rectify the images and create a digital map for query. The method was modified to evaluate distribution and location of the Neches River rose mallow, a species with limited distribution and incorporated into an ArcGIS 10. 1 GIS database.

In 2013, ATCOFA partnered with the County of Nacogdoches 911 District, the City of Nacogdoches, and the Nacogdoches County Appraisal District to purchase 2013 Pictometry hyperspatial imagery. Working with these agencies and the PNPC, students calculated the height of 60 baldcypress trees on the SFASU campus in April and May of 2013. On-screen estimates of tree height using Pictometry data were compared to field-measured tree height. The mean actual tree height of 23.20 feet when compared to Pictometry estimated mean tree height of 23.29 feet had a linear regression of $R^2=$ 0.999 (Unger et al., 2014b) indicated Pictometry estimated tree height is no different that field measured tree height. An additional 500 baldcypress tree heights were measured with Pictometry data as part of a stream corridor stabilization project with the PNPC. The project was reviewed with the Nacogdoches County Appraisal District partner. Once the baldcypress were located and measured, they were transferred to ArcGlobe for a visual assessment of the trees within a GIS interface. As a follow up project for height comparisons, students used a clinometer, a laser range finder, a telescopic height measuring pole and on-screen Pictometry measurements to estimate light pole height using multiple oblique angles within a web-based interface and found that Pictometry height estimates were significantly more accurate than both clinometer and laser range finder for height estimates (Unger, Hung, & Kulhavy, 2014a).

Conclusion

Reflection is an essential component of service-learning in PPGIS. Each group produced a poster and PowerPoint presentation for a professional conference and these were presented in local, regional and national meetings. Groups met with stakeholders to discuss their findings and how to continue to incorporate these in environmental settings. The addition of reflection as a formal requirement required students (and stakeholders) the time to analyze the projects and add additional goals as needed.

The production of the Ghost Trail project within an interactive ArcGIS 10.1 database allowed students the ability to update the project as monuments were relocated along the trail; or the trail was rerouted around construction areas. The production of the GIS database led to rapid changes in the trail map and the production of both an updated trail map and a revised booklet. Firewise produced a national product and SAFE is continuing to monitor the SFASU forest and work with the Texas A&M Forest Service, Wildland Urban Interface team to reduce fuel hazard. The accuracy assessment of DigitalGlobe's QuickBird imagery led to increased accuracy of ATCOFA images produced in both ERDAS Imagine and ArcGIS. Comparisons of land cover change over time were facilitated by the process. Litter abatement led to changes in times of litter pick up to early mornings to reduce liter accumulation. Student groups formed litter clean up teams and included work hours in the Presidents Volunteer award. Continual additions to the interactive ArcGIS database monitors litter and information is utilized to send student groups and other volunteers to targeted cleanup areas. Once these litter areas are cleared, the GIS database is updated. For the Neches River rose mallow, the ArcGIS and Pictometry databases can continue to be updated for each plant. Continued monitoring will assist with designation of critical habitat. Once Pictometry data was considered to be accurate for measuring baldcypress tree height, students continued to assess surface land area measurements, solar panel roof area measurements and building heights with Pictometry data.

Within ATCOFA, a student's ability to "use geospatial technologies, to collect, analyze and convey spatial data in multiple formats" is rated as both high importance (4.25 out of 5) and high performance (4.04 out of 5) (Bullard, Coble, Coble, Darville, Rogers, & Stephen-Williams, 2014). By presenting to stakeholders and continued discussion, each group added to and refined their project leading to professional presentations and publications. Results indicate that a combination of PPGIS and reflection produce a more inclusive spatial science product, heightens a student's experience, and produce more well-rounded society-ready spatial scientist (Bullard et al., 2014).

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Abstract

Faculty integration of service-learning into the classroom has proven an effective method of engagement within the *undergraduate* experience. This case study addresses a gap in the student-engagement literature with a discussion on the effectiveness of service-learning projects on class content-comprehension at the *graduate* level. A post service-learning experience graduate student focus group provided four findings that can help guide both novice and veteran faculty in implementing or enhancing service-learning within the graduate experience. Students noted service-learning aided course content-comprehension via practical application, the importance of organization/representative fit, the need for a follow up session, and gratitude toward adult-like treatment.

Engaging the Graduate Student in Learning through Service-Learning: A Case Study

Justin Charles Velten

Introduction and Rationale

There is a large body of research surrounding the effects of college student engagement on student learning, grades, and retention. There seems to be a positive connection between student engagement and student learning (Ewell, 2002; Carini, Kuh, and Klein, 2006). Moreover, in the online classroom, it is predominantly via student engagement that learning takes place (Arbaugh, 2000). Kuh et. al (2008) discovered a significant positive correlation between increased student engagement and college Freshman grades and retention.

When considering student engagement across both Freshman and Seniors, Carini, Kuh, and Klein (2006) learned that Seniors react more positively to partnering with peer students on class-related projects and the integration of multi-course concepts. There seems to be an engagement-transition that takes place over the course of a student's college career. Students move from engagement via interaction with faculty and staff through hard work, being prepared for class, and writing and rewriting academic papers in their Freshman year to seeking methods to integrate their textbook knowledge through engagement in projects.

Engagement has three overarching categories: behavioral, emotional, and cognitive. This study specifically considers cognitive engagement as it relates to the utilization of cognitive abilities to learn by way of self-guided experience (Fredricks, Blumenfeld, & Paris, 2004). Moreover, in order for students to garner the most from their engagement experience it is important they be grouped with peer students (Endo & Harpel, 1982; Tinto, 1993; Tinto, 1997). There is an apparent link in the literature between college student engagement and undergraduate student learning outcomes.

However, there is a gap in the literature regarding the role of service-learning as an engagement tool for graduate students. Carini, Kuh, and Klein (2006) note that as undergraduate students mature, they become

more interested in experiential learning through class projects, such as service-learning. Therefore, from the literature, it is reasonable to assume that graduate students will experience and view student engagement via class service-learning projects in an even more positive way than college seniors.

This study seeks to discover how service-learning within the graduate class might affect graduate student engagement by way of increasing classroom content-comprehension. This qualitative study will utilize a focus-group like interview process of a current graduate class engaged in a community-based service-learning project. Data collected from this study should enlighten higher education and communication scholars on the affects of graduate student engagement through service-learning projects on student learning outcomes.

Research Question: Does graduate student engagement via class service-learning projects increase student learning of course materials?

Methodology

Participants

A group of eight graduate students enrolled in a graduate seminar in Organizational Communication at a Southwestern United States university. The convenience-based sample of participants was made up of both males and females representing a spectrum of ethnic backgrounds.

Procedures

As a part of a graduate course regarding organizational communication theory, students were engaged in a service-learning project with the TAP for Literacy: Tyler Area Partners for Literacy. TAP is a "coalition of community partners seeking to advocate for, promote, and support literacy among children and adults in the city of Tyler and surrounding communities" (TAP for Literacy, 2013). TAP was in need of assistance in reorganizating its organizational structure to optimize community contacts prior to its large community unveiling mid-semester. The predominant areas where TAP sought assistance were in:

1. How to structure a model of communication across all levels of TAP constinuents, including community leaders, literacy program partners, a steering committee, potential partners, and program participants.
2. How to market TAP to increase community partnerships and participation of low-literacy level participants.
3. How to develop a model of collaboration among all Tyler area literacy groups to lessen work-overlap and increase group cohesion and networking.

Representatives from TAP met with the graduate students the first day of class to discuss their needs and ask if the class would provide assistance. Upon the class agreement to engage in this service-learning opportunity, the TAP representatives discussed their primary needs. Students worked on the project together through in-class discussions and individual research outside the classroom. The class faculty periodically facilitated discussions regarding the project and how current class materials, including current research, could be applied to the TAP project. During the eighth week of classes, the TAP representatives returned to hear the class proposal for organizational change. After the unveiling of the TAP program, TAP representatives met

again with the graduate students to inform them that many of the class' conceptual suggestions were implemented prior to the official TAP unveiling and more are planned to be implemented in the future.

Throughout the semester, many of the graduate students commented on the value of the service-learning experience. Therefore, in an effort to capture the richness of these observations regarding student engagement through service-learning, this graduate class was utilized as a form of case study. During one session of the fifteenth week of class, students were asked a series of questions regarding their service-learning experience. The focus group session was audio recorded and data anonymously analyzed for thematic material. For the purpose of this study, the lead TAP representative will be referred to as the service-learning project liaison.

Data Collection and Analysis

Interview data analysis involved what Sandelowski (2000, 2010) refers to as fundamental qualitative description. She notes that many studies adhere too closely to research data analysis design categorization (i.e. grounded theory, phenomonology, etc.) that can, in turn, lead a researcher only to findings thus related to that design. Oppositely, fundamental qualitative description utilizes sound data collection (i.e. focus groups) while allowing data analysis to move freely, without pre-set designs that can restrict discovery.

Qualitative research calls for the researcher to project meaning back on the data as a way to better understand what is observed, but Sandelowski (2010) calls for data analysis more "data-near", where thematic data is allowed to project its own meaning (p. 78). One way in which to secure qualitative data analysis internal validity is for a researcher to request affirmation or clarification from participants post-data analysis by way of reading researcher notes. Sandelowski (2000) commits that fundamental qualitative descriptive data analyses offer a "straight description" of data and "comprise a valuable methodologic approach in and of themselves" (p. 339).

For purposes of this study, all eight participants were interviewed together in a focus group type interview method. According to Morgan and Krueger (1998), focus groups help the researcher "understand what happened during an experience or project" and "learn lessons that will guide...future work" (p.15). A trained, third-party interviewer conducted the 45-minute focus group around three questions dealing with the students' experience in service-learning with TAP. More specifically, questions centered on whether the project increased student connection of textbook and classroom theory to real-world situations and how working with the teaching faculty on this outside-the-university service affected the students' overall educational experience and understanding of course materials.

The interview session was recorded electronically, and in an effort to pull themes from the focus group content, the primary researcher met with the third-party interviewer for a debriefing and data analysis session. Focus group content as well as field notes collected throughout the semester were monitored for recurring or group-affirmed individual student/participant comments. It is important to note here that each student fully participated in the focus group discussion and there was no observer-perception of groupthink.

To strengthen the internal validity of data analysis, study findings and discussion were sent back to each participant for reading. This submission offered participants the opportunity to add, subtract, or adjust researcher comments regarding the focus group interview session in the case of a misinterpretation. However, participant feedback was only affirmative regarding the findings of the study, therefore confirming the overarching themes noted in the findings below.

Results

This study of graduate student engagement via a service-learning project yielded four pertinent findings. Overall, these findings point to the importance of engaging graduate students in community-based service-learning opportunities while mandating particular criteria therein. More specifically, the primary discovery of this study was that participants noted the service-learning project helped them better understand classroom theory-based content when linked to a real-world experience. Secondary findings included the importance of matching appropriate service-learning project liaisons with students, that students would like to receive a follow up regarding the implementation of their suggestions, and how working alongside the professor made the graduate students feel more like adults and colleagues rather than students only.

Linking Theory and Experience

The first and primary finding of note was how the service-learning project helped the graduate students link classroom theory to experience via practical application of knowledge. The graduate seminar was theory laden, covering and discussing a different significant organizational communication theory nearly every meeting. Students engaged in dialect regarding the theory and its implications and uses and seemed to have a grasp on the course content. Instead, the focus group revealed an overarching class concern regarding the distant nature of the content and the difficulty students were having with fully understanding significant organizational communication theories.

However, there seemed to be a consensus among the students that when the service-learning project was introduced, class theory content began to make sense. When applied to a real-world need, where students could address a real issue in the community, students began to see more clearly the intersection of theory and practical application. Students noted that upon the inclusion of the service-learning project, what the instructor had been teaching "just clicked".

There were surely multiple areas of class content that seemed to make more sense when connected to the service-learning project, but there are two specific instances or examples I want to pull from the semester. One of the first times I, as instructor for the course, began to note student engagement of course content through inclusion of the service-learning project was in the weekly student research presentation. For the first eight weekly meetings of the course, students were assigned to locate, read, and present recent academic research regarding organizational communication. At first, students would present the information from the papers they located via online research databases, but there seemed a perceived disconnect between their presentations and their real understanding of the content therein. However, as students began work on the TAP service-learning project, the research articles began to have more relevancy to their current responsibility of helping TAP

reorganize its organizational communication structure. Students not only became more engaged in these reading and presentation assignments, but they also began to see a more clear connection between the theory of the research and how it is applied.

The second way in which students displayed a more clear understanding of course content through the integration of the service-learning project was through the application of course concepts and theories to the TAP's needs. As previously stated, TAP was initiating a community literacy program, but with their great community support, discovered the challenges of effectively communicating with these various supporters and advisors. Moreover, TAP had in place a system that held some stakeholders within an inner circle, while other community partners were kept at a distance. These two levels of interest in the TAP organization led to communication challenges for TAP leaders and coordinators.

To combat this organizational communication challenge, students leaned heavily on the *us and them* concept as it relates to organizational communication (i.e. Goffman, 1963; Morone, 1997; Tompkins, 2004). We had discussed the concept as a class and the students decided to view the TAP organizational communication issue by using the class concept of Critical Theory (i.e. Jurgen Habermas; Mezirow, 1981; Alvesson & Willmott, 1992) through the lens of the *us and them* ideology. Students suggested TAP leadership move away from a two-tiered organizational structure where communication quantity and quality differed depending on where recepients lay within the structure. There was an overarching concern that this dichotomous method of communication might lead to an *us and them* mentality between the inner circle and other literacy partners. Using Critical Theory concepts, students instead advised TAP leadership to send the same informative newsletter to both groups on a routine schedule.

These are only two examples of how the graduate students were more fully engaged through the implementation of a service-learning project. There were certainly more instances to mention and even those that went unnoticed or unmentioned. Throughout the semester, students would offer positive unsolicited feedback to each other and to me regarding how glad they were to be involved with TAP and how course concepts simply made more sense due to the service-learning experience.

The Right Fit

Even with a service-learning project that helps students better understand classroom content, there lies a need for the selection of a suitable service-learning project liaison. Participants made special note to how greatly the overall positive service-learning experience was influenced by the courteous and professional nature of the TAP coordinator with whom they worked directly. The coordinator, serving as the service-learning project liaison, visited the class at the beginning, once for a clarification meeting, and twice at the end of the project and was sure to thank the students for their work and affirm them in their strong contribution to TAP. This attitude of appreciation and acknowledgement of student topic-proficiency gave students the sense that their voices were heard and suggestions truly considered. Students noted that, in this case, the service-learning project liaison was a good match and seemed tailored to the specific group of students and class content.

For example, participants noted that even though the coordinator appreciated their work, there were a couple instances when he chose to move in a different direction

than what the class suggested. In the case of a negative student to service-learning project liaison relationship, students could have become resentful to any disagreement. However, in this case of strong student to service-learning project liaison collegiality, students happily accepted the occassional tendered defference as part of the learning experience. Thus, the second finding of this study was that it is important that graduate students feel a sense of comfort/ease and connection to the service-learnin project liaison.

Follow Up

This study also concluded that students prefer some form of follow up regarding the service-learning project. This third finding denotes the level of interest students had in this service-learning project; it was not just another academic assignment with little to no bearing on practical application in their eyes. Students displayed a true interest in knowing if their suggestions were not only accepted, but implemented, and how they were received or to what extent they were successful or unsuccessful.

The original agreement with TAP was for students to propose findings and suggestions by the end of the semester, but upon the first service-learning work session, just one week after meeting with TAP representatives, students self-imposed a less than one month deadline. Within 29 days from the initial request for assistance from TAP, the graduate students were prepared to offer an organized proposal and discussion regarding the needs of TAP. This quicker-than-expected turnaround allowed TAP to implement proposed ideologies before the end of the semester.

Upon the suggestion of the service-learning project liaison to TAP, students met with him a final time so that he could again thank the students for their assistance, assure them of the value of their work, and discuss suggestions implemented. Students seemed extatic to learn that any one of their suggestions was implemented or in the planning stages of implementation, offering these students a real sense of value. However, students later disclosed an unquenched need for additional follow up. Students would have liked to learn more about which plans were eventually implemented and the findings thereof. These graduate students were not only interested in completing the assignment, but became very engaged in the outcome of their academic efforts in this practical application.

Treated as Adults

The fourth discovery of this study was that students like the way the service-learning project transitioned them from student to professional and adult. At the graduate level of education, students should have a strong grounding in the course content and begin seeking ways to apply their knowledge in practical application through research and service. Waldeck et al. (2009) relate the trend for graduate faculty to mentor graduate students in such academic goals. Within an appropriately implemented service-learning project, a graduate students is ushered into a significant role of consultant within his or her specified area of expertise, which can be a representation of the current course or a past set of courses in a particular content area. Students in this study noted that within this service-learning model, they felt as if they were working with, or alongside, the professor as he moderated the project.

The class noted that the faculty served as a facilitator of conversations on the project, allowing students room to work and make decisions, while providing corrective or guiding suggestions along the way. These graduate students commented on how this faculty-approach created opportunities for them to be the experts and colleagues with the professor, which in turn built their confidence. During this project, students also seemed to psychologically move from the role of student to adult as well as professional, all of which seemed an important and beneficial experience for them at the graduate level.

Conclusion and Discussion

It is evident from the findings of this study dealing with graduate student engagement via service-learning projects that graduate students garner course-complimentary benefits from service-learning projects. There are, of course, unseen benefits to both the students and the community when graduate students engage community partners in service-learning projects (a suggestion for furthering this study would be a pre-post [service-learning experience] test model of student-understanding of class content). In turn, service-learning in the graduate school offers benefits to the graduate student, two of which were captured in this study. The first benefit to the graduate student was the way in which the service-learning project helped students bridge the gap between theory and practice. The service-learning project allowed students to see theory in action and apply it for the benefit of others. Through this service-learning project, the graduate students noticed a notably more clear understanding of class content.

The second benefit to the graduate student via service-learning was that their confidence was built as they worked as professionals in course content alongside the professor. Students transitioned from the role of student-only to a sense of adulthood where they took on a challenge facing the community and used their knowledge to offer expert advice. This intangible benefit pays dividends to students as they transition from the classroom to their careers.

Along with the benefits of service-learning in the graduate school, this study revealed three important factors to consider when setting up or initiating service-learning. First, students discussed the importance of matching the right service-learning project liaison with the class. There is often times no guarantee that the liaison will be professional and courteous, encouraging students in their roles, but the teaching professor should seek those qualities in the liaison to the best of his or her ability. The service-learning project liaison utilized in this study had significant experience working with college students in a mentoring role, which made him an excellent candidate for graduate student interaction. Finding the right fit for your students can be a challenge and adds to the overall time allocation for setting up a service-learning project. However, it is clear from this study that the end-result success for the project and the graduate students is worth the extra screening.

The second factor to consider when initiating service-learning in the graduate school is the follow up process. Students in this study seemed to enjoy the overall service-learning experience, but maintained a desire to gain even further knowledge of their efforts' end-results. In the case of the class under study, students gathered one time during their typical class time at a local café to conduct class and meet with the

service-learning project liaison for a post-proposal follow up. The liaison discussed items either implemented or in the plans to be implemented and thanked the students again for their contributions to the community literacy effort.

However, students still wanted more information regarding the implementation of their ideas as that information came along. Students in this class completed their initial proposal to TAP within about one month from the start of semester classes, which allowed for a follow up meeting regarding the students' suggestions. In many cases, the service-learning project may last across multiple semesters, take the entirety of the semester, or not require a completion in full. In such cases, it can be difficult to provide feedback to students regarding the implementation of and success of their suggestions. Nonetheless, wherever possible, students seem to garner value in the feedback from their community/service partners. Moreover, this high level of interest in the implementation of their input suggests that graduate students view such projects as possibly holding more practical value than other typicl assignments.

The third factor to consider when implementing service-learning into the graduate course is the role of the faculty. It is clear from the findings of this study that the graduate teaching faculty plays an important role in the successful service-learning experience of the graduate student. In the case of this study, the professor allowed the students to meet with the service-learning project liaison directly to learn of the need, facilitated discussions on the matter, and encouraged students to consider themselves the professionals on the topic and present their finding in such a manner. This teaching within service-learning model allowed students to own the project - either its success or failure. However, the faculty did not completely withdraw from the students, but moderated the project in an effort to act as a kind of safety net. This fine line presents a challenge for the faculty and requires that he or she be self aware so as to intervene when needed, but to step-out when students needed space to grow and achieve on their own.

In the case you consider implementing service-learning into your classes, I would like to offer a few insights from this study and my experience in service-learning. The first lesson I have learned and suggest is that the faculty select a project that is attainable across the students' semester time-allottment and level of ability. There are service opportunities available to faculty that are simply too lofty for a single-class application. Some service oppportunities begin and find resolve during a single semester, while others contribute to an on-going service effort that closely ties to the class content, such as in the case of nursing students serving clinical hours at a local low-income medical facility. Whatever the case, teaching faculty should select a service-oriented goal wherein students of a single semester can feasibly attain a clear connection between the service and the course content.

These same faculty must also make room in the course for time dedicated to in-class work committed to the project. In the case of this study, students were given freedom to develop their own ideas as to what might help TAP with organizational communication issues. However, I set a time apart during the last session of class before their final pitch to TAP. During this meeting that took place in my home, I helped them prepare their thoughts in an outline format and facilitated conversations that encouraged them to work together and develop a shared vision for TAP. Whether it be working together in groups during class time, having the opportunity to ask questions of

the faculty, or simply a debriefing discussion post-experience, faculty have a real opportunity to develop teaching moments that help students clearly connect the service and course content.

Alonside selecting a project that does not consume a student's work-load and offering in-class time for work on the project, faculty should carefully select a service-learning project with an attainable end-product. Again, some projects begin and end during a semester and some continue on without end, but the teaching faculty must consider if the service is something that is simply doable by the students. For example, in the case of this study, I knew that TAP had a public launch date set for mid-semester, which can lead to a shorter-than-appropriate time crunch on the teacher and students. However, I also learned that TAP's issues did not have to be entirely fixed by this launch date. Students discussed which items needed priority attention and focused on those, while still providing TAP with suggestions on their long-term issues. Choosing a service-learning project where students feel rushed or pressured to perform on a tight deadline can lead to unnecessary stress, a lack of student interest in the self-benefits of the project, and a failure to produce a meaningful outcome for the partner organization.

There are many service-learning opportunities both within and without the university walls, but my second suggestion for those considering the implementation of service-learning in the classroom is to carefuly consider the opportunity before accepting the partnership. In order for students to gain a better understanding of class content via the service-learning project, the project must be closely related to the content of the course. This does not mean that a Marketing course must only serve Marketing organizations, but that service partnerships be based on a commonality. A Marketing class could work with a local not-for-profit animal shelter on how to develop a marketing strategy to reach a particular target audience. This direct connection of service-learning project experience and classroom content is what research is showing develops a more clear understanding of course content for the students.

Lastly, I would suggest jumping into service-learning in a small way before attempting a large project. When I first began implementing service-learning projects, I would ask sophomore students in an Interpersonal Communication class to visit a nearby retirement home. We would go as a class and spend about 35 minutes playing Bingo or simply sitting with the residents, listening to their stories and telling them about life as a college student. This exercise was designed to teach students about interpersonal communication in the areas of listening, interacting with those who are different from oneself, and to stretch their interpersonal comfort zones.

There were times when I thought this service-learning assignment was really lame, but what the students taught me was that even though this assignment added to their busy schedules and even though they dreaded the time with the elderly, the experience and what they learned was invaluable. It can be intimidating to set forth on a project alongside the students, learning while they learn, because in all reality, you may make a misstep along with them. This is okay – remember that as a good teacher you are doing what it takes to increase your studentss understanding of course content while serving others. My encouragement to you is to start small, but to start.

In closing, this study concludes that engaging the graduate student via service-learning, when thoughtfully implemented, does increase student learning of course material as shown through graduate student self-reports. There are many differing

directions a professor can take when seeking a service-learning project to implement in the graduate class. However, from this study it is evident that there are a few guidelines to follow in order to create a best-case scenario for the graduate student. There are sure to be more guidelines available and many yet undiscovered, but this study reveals the importance of incorporating service-learning when successfully engaging the graduate student.

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