

Journal of

Applied Learning in Higher Education

Fall 2012, Vol. 4



Journal of
**Applied Learning
in Higher Education**

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CONTENTS

What's the DEAL? Program Level Examination of Reflection Design MARY HALE TOLAR AND TRISHA GOTT	3
Applied Learning at the Graduate Level: Professional Science Master's Programs Lead the Way URSULA BECHERT AND BRIAN CRONK	23
Sharing the World: Using Study Abroad to Enhance an On-Campus Service-Learning Project CAITLYN DAVIS AND JULIE TIETZ	35
No More Hiroshimas! Assessing Personal Narratives of Survivors of Hiroshima on a Campus Community Using University-Wide Goals and an Applied Project in a Graduate Research Methods Course WENDY L. GEIGER	45
Voices in the Hall: Alumni Perspectives on the Value of Networking MELISSA TURNER AND GREGORY LINDSTEADT	63

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What's the DEAL? Program Level Examination of Reflection Design

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The DEAL model of critical reflection (Ash & Clayton, 2009a) was explicitly designed to help improve the quality of learning and practice in applied learning. Heretofore, the DEAL model has been used at the level of the individual student or faculty member as learner. To improve understanding and implementation of critical reflection in a university's international service-learning (ISL) program, researchers utilized the DEAL model of critical reflection to reflect on practice at the program level. Building on the comparison of multiple instances of ISL in Whitney and Clayton (2011), particularly the important variables of program design related to reflection indicated there, the researchers integrated these and other principles of promising practice into a user-friendly tool that can be applied to the design of reflection. Researchers then piloted its use by applying it to three (historical) cases of reflection design in ISL, analyzing archival data—specifically reflective practices from three program years in each decade of Kansas State University's twenty-plus-year IST program. Service-learning programs rely on high quality critical reflection to help students make meaning of their experiences; service-learning programs must design reflection to support and advance that meaning-making, and therefore, must examine reflection design.

Applied learning pedagogies are considered high impact educational practices. Service-learning programs in particular promise transformational learning experiences, often related to educational goals of engaged citizenship and personal and social responsibility (Kuh, 2008). As institutions seek to invest limited resources wisely, even programs

Journal of Applied Learning in Higher Education Vol. 4, Fall 2012 3-22
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with considerable institutional history must expect to demonstrate impact and value. Being intentional in reviewing a program can demonstrate how and why programs have evolved and what further change may be expected moving forward. Applied learning programs look to learning outcomes for evidence of their impact. Service-learning students often demonstrate their learning through critical reflection; therefore, service-learning programs have a special interest in examining their approaches to reflection, how reflective practices have evolved, and how effective programs have been in meeting learning outcomes.

Although critical reflection is essential for high quality learning and practice in applied learning of many forms, this study considers reflection design in service-learning in particular, specifically international service-learning (ISL), using one long-standing ISL program as context. For over twenty years, the International Service Teams (IST) program has been a part of Kansas State University's service-learning landscape. IST sends interdisciplinary teams of students to developing communities internationally for service-learning and community engagement work. Over 300 students have served in 18 countries on five continents, engaging in more than 90,000 hours of service in international communities. It is a unique program in its organization and format (program and teams are student-led; participants are engaged throughout a full year of service-learning related to a summer experience abroad) and also its longevity, with twenty-three years of continuous operation.

Throughout the long history of the program, one of the most significant changes has occurred in the implementation of reflection. Reflection is understood to be an essential component of service-learning (Deeley, 2010; National Service-Learning Clearinghouse, 2010; Welch, 2010; Whitney & Clayton, 2011), as it is the process through which meaning is made from experience (Ash & Clayton, 2004, 2009a; Bringle & Hatcher, 1999; Dewey, 1910; Eyler, Giles, & Schmiede, 1996; Saltmarsh, 2010). Noting that it is critical in domestic service-learning as the "primary mechanism that generates meaningful and powerful learning," Whitney and Clayton (2011) suggest that in ISL particularly,

reflection serves as a needed safeguard against some of the problematic potential outcomes associated with students being

directly involved in communities with which they are unfamiliar, including misinterpretations of the motives and behaviors of others, reinforcement of entrenched stereotypes, and the tendency to make insufficiently informed judgments across cultural difference. (p. 148)

Over the twenty-plus years of IST, the program has gathered data that demonstrate the variation and evolution of the reflective practices implemented by the program. To improve understanding of and implementation of reflection in the program, researchers sought to apply the DEAL Model of Critical Reflection at the program level. What might we learn if we *described* reflective practices at different points in the program's history; *examined* those reflective practices, looking for patterns and causes of variation; and *articulated learning* about program design related to reflection?

This study utilizes the DEAL Model of Critical Reflection to reflect on a program's design to determine how reflection has been structured over the program's history and the extent to which varying iterations of reflective practices meet what scholarship supports as current best practices. Developing and piloting a tool based on those practices provides not only important information regarding this particular program's design of reflective practices but also informs refinement of the tool for use by other researchers and practitioners applying DEAL at the program level.

LITERATURE REVIEW

ISL programs provide a global context to social issues addressed during service experiences abroad, serving as a powerful form of international education. ISL programs share ties with study abroad experiences in that students are able to go abroad through opportunities offered by higher education institutions. However, service-learning programs enhance the international experience by providing students with the opportunity to connect directly with local residents to build a better appreciation and understanding of the culture (Bringle & Hatcher, 2011). Universities operate these ISL programs for several reasons, including increased intercultural experience and understanding (Brown, 2011), developing students into citizens who are engaged with civic activities in their home community (Bringle, Studer, Wilson, Clayton, & Steinberg, 2011), and providing students with applied learning opportunities related to their field of study (Bringle & Hatcher, 1996).

An essential component of service-learning, reflection has generated attention among scholars and practitioners. Models for designing reflection in accordance with standards of best practice have been developed and used by practitioner-scholars, including the Campus Opportunities Outreach League's signature *What? So What? Now What?* model, Welch's (1999) ABC model (with its defining dimensions of learning including affective, behavioral, and cognitive),

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and more recently the DEAL Model for Critical Reflection (Ash & Clayton, 2004, 2009a, 2009b; Ash, Clayton, & Atkinson, 2005; Clayton & Moses, 2006; Jameson, Clayton, & Bringle, 2008; Whitney & Clayton, 2011). A rebuttal to the image of reflection as “touchy-feely introspection,” critical reflection defines a practice that is “an integrative, analytical, capacity building process” (Whitney & Clayton, 2011, pp. 149-150). Critical reflection requires participants to examine their thinking and is the component of service-learning that generates, deepens, and documents learning (Ash & Clayton, 2009a). In the inaugural issue of the *Journal of Applied Learning in Higher Education*, Ash and Clayton (2009a) presented the DEAL model as the product of a multi-year scholarship of teaching and learning project, initially developed for use in service-learning and designed explicitly in accordance with principles of good practice.

The scholarship on service-learning provides a body of well-supported principles of best practice regarding critical reflection in service-learning. Eyler et al. (1996) present “the 4 Cs” as indicators of quality reflection: continuous, connected, challenging, and contextualized; coaching was added later as a fifth “C” (Eyler & Giles, 1999). Bringle and Hatcher (1999) suggest five guidelines for effective reflection in service-learning: clearly links service experience to course content, is structured and guided, occurs regularly throughout experience, involves feedback so students can improve and develop reflective practice, and helps explore and clarify values. Zlotkowski and Clayton (2005) further refine our understanding of quality critical reflection, adding that it must be aimed at specific learning objectives, be integrative, be assessed as critical thinking, include setting goals, and generate change for the learner. Furthermore, Hatcher and Bringle (1997) identify a major gap in the field of service-learning: the lack of support in the design of effective reflection activities in service-learning courses, a gap that is remedied through intentional support for faculty and staff structuring service-learning courses. The DEAL Model as a tool responds to this gap by offering a format for designing reflection.

According to Giles and Eyler (1994), John Dewey identified early on the challenges with any experiential education by acknowledging that experience alone does not result in education, but rather the processing of an experience yields learning. The DEAL Model offers learners a process for making meaning of an experience and to build their capacity for such meaning making. Refined through several years of research and practice, the DEAL Model consists of three steps: Description, Examination, and Articulation of Learning. The Describe step invites learners to provide objective details of an experience, answering questions related to when, where, who, and what to give context to the experience. The second step, Examination, includes prompts designed to link experiences to desired learning outcomes, moving respondents from summarizing what happened to making meaning of their experience. The third and final step in the DEAL model is the production of an Articulated Learning. Prompts for this step help respondents “capture their learning in such a way as to be able

to act on it and thereby improve the quality of their learning and their future actions” (Ash & Clayton, 2009a, pp. 42-43).

The DEAL Model was explicitly designed to help improve the quality of learning and of practice in applied learning. Bloom’s (1956) Taxonomy and the work of Paul and Elder (2001, 2002) on critical thinking can provide guidance in the design and use of the model. The DEAL Model can be used in such a way as to support critical thinking in a developmentally appropriate way that allows students to move through levels of reasoning from basic identification and explanation to synthesis and evaluation of learning. Further, it can be used to cultivate critical thinking capacities as well as to assess them. Although the model was originally designed for use at the level of the individual student or faculty member as learner, investigators in this study apply it at the program level. Doing so both requires and advances understanding of, and means of gauging, how best practices in critical reflection are and can be attempted and achieved in various program models.

The service-learning literature demonstrates a wide range of structures in service-learning programs or courses which result in reflection design that varies in format, scope, and organization (Brown, 2011; Jones & Steinberg, 2011). Whitney and Clayton (2011) compare multiple instances of ISL which vary in program structure, technology, language, and culture, and, in looking at different approaches to reflection, identify key variables in reflection design. Variables include who participates in, provides feedback to, and facilitates reflection; when, where and how often reflection takes place; and in what form is reflection captured and/or shared. When put into the context of best practices, these variables can be adapted into a tool that can assist with examining a program’s design of reflection activities. Programs that aim to provide educationally meaningful experiences must pay attention to reflection design and work to deepen and broaden the learning of all involved. Using the tool developed from the variables identified by Whitney and Clayton (2011), researchers examined the reflection design of the IST program over time. This process generated new learning about the particular program, while also demonstrating the usefulness of the tool in examining reflection design in ISL programs.

CONTEXT: INTERNATIONAL SERVICE TEAMS

The investigators in this study sought to reflect critically on questions of reflection design and program evolution using the IST program as context. In the mid-1980s, small teams of Kansas State faculty were brought together by the shared purpose of developing a program that would engage students in communities—locally, across the state, and globally. From these teams came the idea to develop an ISL program. For the past three decades, IST has been a prominent part of service-learning efforts at Kansas State University. IST sends interdisciplinary teams of students to developing communities internationally for service-learning and community engagement work. Kansas State University defines service-learning in accordance with the Corporation

for National and Community Service as “a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities” (National Service-Learning Clearinghouse, 2010). Over 300 students have served in 18 countries on 5 continents, engaging in more than 90,000 hours of service in international communities. Both the IST program and the interdisciplinary teams are student-led, meaning that students guide the program, serve as resources to one another throughout, and no faculty or staff member is present on site during the international service experience. The program operates on an annual cycle during which IST student program coordinators, in consultation with faculty and staff members, select and prepare students for a 10-week summer service-learning immersion experience. This year-long program takes students through both the academic study and practice of service-learning and civic leadership in an international context, beginning in the fall semester during which student teams are selected and oriented to the summer service-learning experience. In the spring semester, students enroll in a 16-week course. The course content focuses on developing intercultural understanding and providing students with a foundation for civic engagement and community service work. Overall course goals include personal development (learning about one’s assumptions, skills, interests and abilities), civic engagement (exploring service project objectives and expectations, relationship to community systems), and academic learning (ethics of service and community development, cross-cultural communication, group dynamics, and leadership). Assignments call on students to reflect through written, oral, and artistic processes on their notions of service and community engagement. Throughout the spring semester, reflection materials are submitted which demonstrate the critical thinking processes that can enhance an ISL experience.

Upon successful completion of the spring semester, interdisciplinary teams of students travel to their respective communities to complete their 8-10 weeks of service. Teams live in homes or other local lodging and work daily with local community members to make progress on the community-identified need. The range of projects is broad and has included work on youth development, health initiatives, and environmental programs.

Reflection in the IST program has evolved in its twenty-three-year history, ranging from a post-service survey only, to facilitated reflection throughout and resulting in public presentations on campus following the service-learning experience. The design element of reflection, understood as the “primary mechanism that generates meaningful and powerful learning” (Whitney & Clayton, 2011, p. 148), as it has changed over time, is the subject of this study.

METHOD

To improve understanding of and implementation of critical reflection in this ISL program, researchers in this study use the DEAL Model to reflect on three instances of reflection design within this program’s history. Based on the literature on reflection and the program data examined, researchers distill principles of promising practice into a tool, the Research Design Continuum (RDC), to be used in examining the design of reflection in service-learning or other applied learning programs.

ISL shares elements of domestic service-learning, but in terms of designing and implementing critical reflection, there are variables, and interactions between variables, that need to be considered. Comparing multiple instances of ISL, Whitney and Clayton (2011) explicated key variables related to reflective practice including format, language, technology, and culture, among others. They suggest that “addressing challenges such as these necessitates that reflection processes and products be creatively managed in program design so that both rigor and flexibility become institutionalized, mutually reinforcing ways of doing reflection” (Whitney & Clayton, 2011, p. 168). Considering the nature of an ISL program, which is inherently unpredictable, researchers found attention to these variables to be critical to review of the program’s reflection strategies.

The RDC is designed to help locate the design of any given instance of reflection in terms of its characteristics and in consideration of these variables. Presented as a series of continua, the RDC isolates variables in a program’s reflection design. Each continuum is framed by a question (presenting a variable) with a series of potential response options (reflection practices) set out along a continuum. The continuum moves from narrow in scope on the left to broad on the right. Movement from left to right suggests value placed on achieving the most educationally meaningful experience (depth) for everyone involved (breadth).

Reflective practices are shaped by a combination of institutional, site, partner, and program level issues. Because of that, change along a given continuum is not necessarily linear, inevitable, or possible. Whitney and Clayton (2011) call on ISL facilitators, however, to consider the design variables that impact the ISL experience and reflective learning for students. Using the RDC, practitioners may consider changes that enhance a program’s reflection design in light of additional possibilities, reaching other points along the continua.

The RDC was designed in response to a need to assess the researchers’ program and examine how program evolution impacted reflective strategies. The DEAL Model was used as the framework for this study because it allowed researchers to think critically about and categorize how program variables changed over time. By first describing reflection design at different points in the IST program and then examining the design elements using variables identified in the literature, researchers were able to articulate learning that will inform reflection design

in the future of the program. In the process, researchers fashioned reflection design variables into a tool—the RDC—for broader application in service-learning programs. The RDC provides practitioners a mechanism to examine program design through the design choices in the reflection strategies used.

Having drafted a tool to be employed in the Examination stage of the DEAL Model at the program level, researchers then piloted its use by applying it to three historical cases of reflection design in the IST program. Data include archived program documents and participant reflections captured in written reports during and after service-learning experiences over the program's twenty-three year history, specifically from three program years: 1990, 2000, and 2010. These program years were drawn from each of the three decades of the program's existence

and serve to demonstrate programmatic changes related to reflective practices. Through a process of document review and content analysis, researchers individually rated each of the instances on the RDC, then reached consensus. In the process, the tool was refined.

This study utilizes the DEAL Model of Critical Reflection to reflect on a program's design to determine how reflection has been structured over the program's history and the extent to which varying iterations of reflective practices meet what scholarship supports as current best practices. Developing and piloting a tool based on those practices provides not only important information regarding this particular program's design of reflective practices but also informs refinement of the tool for use by other researchers and practitioners applying DEAL at the program level.

APPLYING THE DEAL MODEL

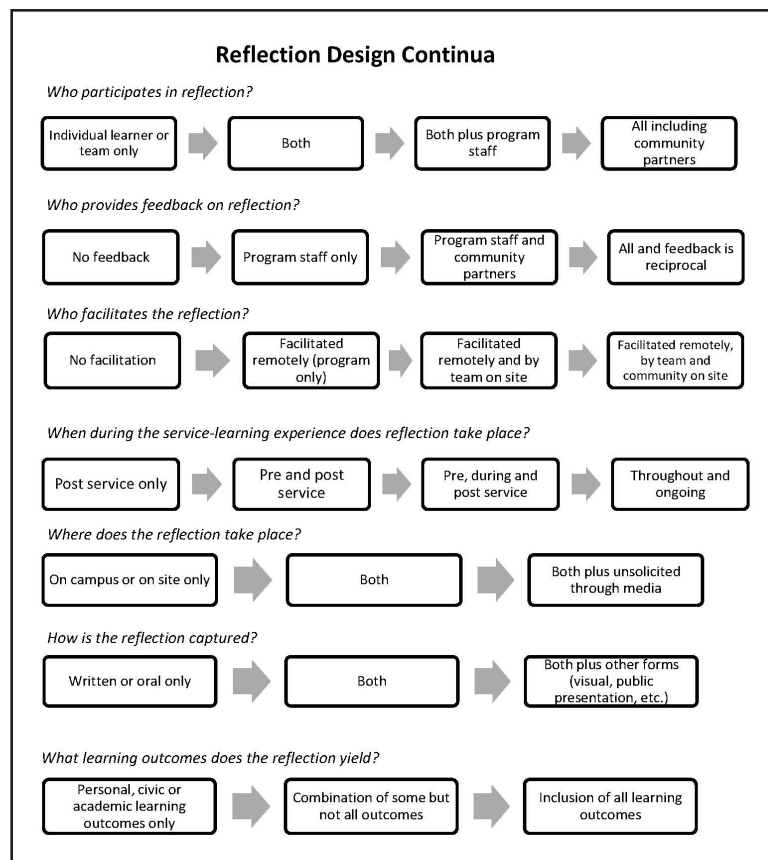
In the DEAL Model, the first step is *Description*, to explain an experience objectively: what is happening, where did the event take place, who was involved, and so forth (Ash & Clayton, 2009a). Applying DEAL to the program level requires a description of each of the three program years or cases examined in this study.

DESCRIPTION: THREE CASES

In 1990, two international service teams, comprised of seven students, traveled to the Dominican Republic and Costa Rica for their service-learning programs. Two students conducted a six-week project in the Dominican Republic, exploring the health, life histories, and productive role of the elderly in the Dominican Republic. Following an assessment, students identified strategies to provide appropriate opportunities for older persons to continue contributing to the community and economic development of those regions. This was the initial phase of a long-term project to formalize a comprehensive model involving senior citizens in Latin America and the Caribbean undertaken by the Fundación para el Desarrollo Comunitario, the International Research and Training Institute for the Advancement of Women, and the American Association for International Aging, among other organizations. In Costa Rica, a team of five Kansas State students partnered with students from the University of Costa Rica to address public health, housing, and educational needs within a small town. Specifically, the team completed a design for the Housing Project Poro, created a mural, taught English, and worked on a playground.

In 2000, IST sent a total of 24 students on seven teams to developing communities in Bosnia, Jordan, Nepal, Belize, Mexico, and Costa Rica. In Bosnia, a team of four students served the Bjelve Children's Home in Sarajevo. Aside from daily daycare activities, the team developed arts and creativity programs to help children express their feelings and emotions through art therapy. Another team of four

Figure 1. Reflection Design Continua



students worked with the Jordanian Hashemite Fund for Human Development, working in two centers teaching English to children as a part of a summer program in Jordan. In Nepal, two students worked in the Mechi English School in Phidim, conducting teacher and staff education workshops and working with the school children. In Belize, the team worked at two service sites: two students worked with Belize Rural South assisting with tourism ideas and developing a summer education program on the island; and three students worked with the Greenleaf Project to develop bird sanctuaries on two neighboring islands, count crocodiles, and assist with plant and tree identification. Two teams served in Mexico. In Tampico, Mexico, two students worked with a summer day camp and a local orphanage that functioned as a local learning center, offering lessons on math, science, dance and English. In Izamal, Mexico, three students worked at La Fundacion Cultural Yucatan in their summer camp for local children. The final 2000 service team served in Costa Rica: two students worked with the Arenol Volcano National Park at the Alberque La Catarata Ecotourist Lodge, classifying butterflies, plants, and flowers; and two students worked with children and the administrative offices of a local private school, teaching English and arts and helping with extracurricular activities.

In 2010, three international service teams, consisting of 12 students, participated in service-learning programs in Kenya, Mexico, and Brazil. A team of five students traveled to Nyeri, Kenya to work with a local children and youth empowerment center, working with youth in school and club-related activities, enterprise development, and vocational skills training. A team of four traveled to La Preciosita near Puebla, Mexico and worked with families to learn English and with children to develop and perform theater. In Jacunda, Brazil, a team of three served at a local orphanage, assisting with daily daycare activities, developing arts and creativity programs, and helping with extracurricular activities.

EXAMINATION: USING REFLECTION DESIGN CONTINUA

In the second step of the DEAL Model, Examination, experiences are linked to desired learning outcomes, moving from summarizing what happened to making meaning of the experience. To make meaning of each of the program years, researchers plotted data on the Reflection Design Continua (RDC). Data were gathered by reviewing program documents, including student reflection products, to examine the structure, format, and scope of reflective practices in each of three program years, representing early, mid, and recent practices. Utilizing elements of the RDC, the program's reflective practices in each of the selected program years were documented and categorized. The elements documented included the year of the reflection and the format of the reflective practice. When examining format, distinctions were made between reflections that were unidirectional (student to home program with no exchange of feedback) and those that were multidirectional

(students, home program, and community partners exchange feedback). Next researchers used the RDC to categorize reflection as performed individually or collaboratively and the format of the reflection as written, oral, artistic (photo documentation), or digital (through blogs or video creation). Further, researchers established who was involved in the reflective practice; students, faculty, partner institutions (community and higher education) and program staff were identified for their roles as respondents and/or as facilitators. Each reflective practice was analyzed for the outcomes it supported (student learning outcomes from academic and co-curricular programs) and products yielded from that work. Products include photo scrapbooks, final program reports, DVD documentaries among others. Finally, the reflective practices were sorted by the final evaluation project. All data were then plotted on the RDC to make meaning of reflective practices and strategies in each of the three program years and over the history of the program to date.

RDC APPLICATION: 1990

In 1990, two international service teams traveled to the Dominican Republic and Costa Rica for their service-learning programs. Teams completed one collaborative reflection in a written, unidirectional format. Reflection engaged faculty, students, and the institutions in a post-service survey distributed by the host campus and gathered quantitative research data through forced choice (yes/no) questions. The data gathered resulted in a program summary report that evaluated the program, service project, and host partners.

RDC APPLICATION: 2000

In 2000, seven international service teams participated in reflection. Students participated in individual and team reflections in written, oral, and artistic (photo documentation) formats. The program staff, students, and partner institutions were involved in the reflective practices. Reflection took place pre-service (students were still at their home campus), twice during their service-learning experience (students completed reflection packets on site), and once post-service (when students were back at their home campus). The reflection was multidirectional pre- and post-service, but the reflection that occurred during service was unidirectional in that no feedback was provided. The intended outcomes of reflective practice were program evaluation and personal development, and the products yielded included journal entries, team reflections, program reports (written and oral), and photos of the students' experiences. The reflections were conducted through a one-credit-hour, graded reflection course in addition to exit interviews and presentations.

RDC APPLICATION: 2010

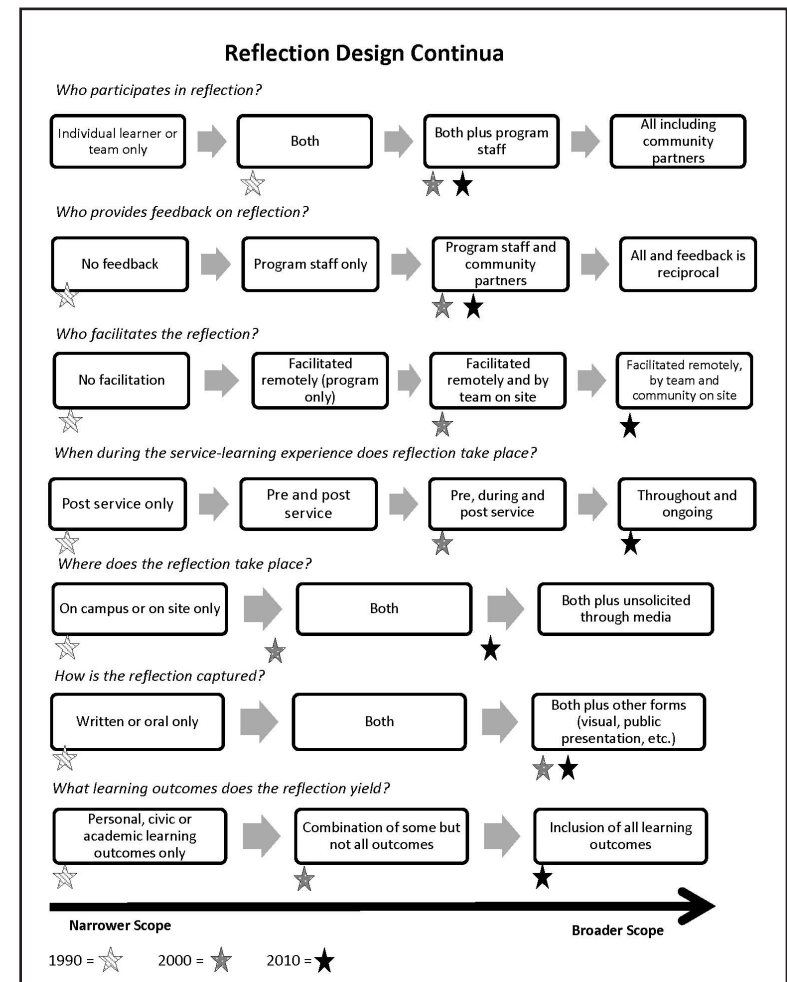
In 2010, three teams participated in international service. Reflection took place pre-service through multiple on campus mechanisms (oral reflections in individual meetings with program facilitators, weekly team meetings, and in-class discussions; written reflections through journals and essays; and the development and sharing of a pre-departure travel guide); during service (three times while students were on site); and post-service back on campus through meetings, presentations and a written report. The reflective practice pre-, during, and post-service was multidirectional. Reflection was facilitated by students, program staff, and community partners and was both individual and collaborative in nature. The format of the reflection was written, oral, and through digital media and included program staff, students and contacts within partner institutions. The reflective practice assessed student learning including personal development, team dynamics, and community impact, and it provided data for program evaluation. Students produced a DVD project, site summaries, blogs, class and public presentations, and photographs. Reflection was conducted as part of a three-credit-hour course in international community service.

ANALYSIS: THREE CASES

Locating each of three years' reflective practices on the RDC demonstrates the structure, format, and scope of the program's reflective practices as they evolved (see Figure 2). Comparing each of the three cases, researchers observed specific trends in the evolution of the reflective practices implemented by the program from 1990 to 2010. First consideration was of the evolution of structure, format, and scope of the reflective practices. Figure 2 shows shifts in the direction, mechanism, frequency, outcome, and evaluation of participant reflection. Additionally, researchers observed an evolution in the type of reflective practice. The program model shifted from an evaluation-based reflection, demonstrated by a forced-choice post-service survey with prompts such as "Was the physical and medical preparation adequate?," to a critical thinking-based reflection better aligned with best practices of critical reflection, such as the reflection prompt in 2010, "What would you tell a team preparing to head to your site for the first time? What do you know now that you wish you had known three weeks ago?," which allows students to demonstrate critical thinking standards. This demonstrated a significant if gradual change of the program, moving from its initial focus on engaging students in service as the primary goal to a broader inclusion of academic enhancement reflective of a more fully developed service-learning model.

This evolution of reflective practices followed an organizational change; the IST program moved from the community service office, which served a co-curricular function, to an academic unit delivering both an academic minor and co-curricular programming focused on

Figure 2. Reflection Design Continua Applied to Three Cases



student learning. Further discussion of the observed changes that took place over the three program years (1990, 2000, and 2010) provides insight into the program development and growth.

In 1990, reflection prompts addressed program evaluation and learning goals. The data analysis shows that many more of the reflection elements (questions posed and the format through which the reflection took place) were focused on evaluation of the program rather than assessment of a specific set of learning outcomes, with little connection

to academic content. The evaluation was primarily focused on the technical aspects of implementing an ISL partnership, not geared for assessment of student learning or development. Although some questions did elicit information about academic enhancement and personal growth, more elicited information on program success. An observation researchers made was that little focus was placed on reciprocity in learning or on the students' role in the project. Additionally, only students completed the evaluation, and only at the end of the project; there was no role for community partners in evaluating project success.

By 2000, distinct changes in the format and scope of the reflection activities can be seen. One such shift is the role of collective and individual learning, which are both addressed through separate reflection processes. The data indicate that some time prior to 2000 the understanding of team dynamics was introduced into the preparation course as an intentional academic component to the program. Civic engagement also began to shift from a distinct experiential goal toward a subject of academic investigation within the program course work. This is evidenced by the shift in the number of reflective prompts from 1990, 2000 and 2010 sorted as solely civic engagement and those sorted also as academic enhancement. As service-learning developed as a practice, and its scholarship grew and gained acceptance in the academic arena, civic engagement as a subject of academic study began to emerge (Furco & Root, 2010; Giles & Eyler, 1998; Tonkin, 2011).

When the IST program began in the nineties, community development was the primary academic content for the preparation course. By 2000, the curriculum included team dynamics, group processes, and conflict resolution, reflecting a focus on leadership development. By 2010, the course was fully integrated into the Leadership Studies curriculum, and civic engagement, previously considered a behavior or experiential goal, had gained acceptance also as a critical academic learning outcome.

Examining three cases using the RDC, researchers found that reflection in IST evolved from 1990 to 2010 in design, delivery, anticipated outcomes, and purpose. Program documents indicate that historically the program focused on civic engagement and personal development, which were early goals of community service programs in higher education (National Service-Learning Clearinghouse, 2010; Plante, Lackey & Hwang, 2009). Only in the past five years, when the program was moved to be housed in the School of Leadership Studies (an academic unit with strong emphasis on student development), has the program's focus on academic enhancement grown through the implementation of critical reflection. Data from this study, collected over twenty plus years, suggest that the emergence and development of the fields of leadership studies and service-learning in the academy over the past three decades have led personal development and civic engagement to move beyond distinct program goals to inclusion in the academic content of ISL, and therefore may likely be represented also as academic learning outcomes in ISL reflection.

Over the years, the program began also to separate in some measure program evaluation from student learning assessment, providing clarity that strengthened reflective practices. Reflective practices continue to be employed in service to both outcomes, but were more intentionally designed for the distinct purposes. In 1990, the "reflection" instrument was a forced-choice survey administered following the service experience that asked students to evaluate the program, but did not address their learning. Given the definition of critical reflection used in this study, data indicate that students in 1990 did not participate in reflection, but rather only program evaluation. In 2010, following their service experiences, students completed written and oral reflections, and created a DVD presentation that demonstrated their learning. In addition, students provided program feedback and evaluation through a series of individual and team meetings with program facilitators and also through individual and team written evaluations. Separating the evaluation and reflection activities resulted in more and richer data for use by program administrators to both assess student learning and improve program practice.

In many ways, the work shows that the IST program has grown up or kept pace with service-learning as a field of practice and study. Findings from the three program years of this 20-plus-year ISL program reflect and illustrate, to a large extent, the development of service-learning, including its focus on critical reflection, and the progression from community service to an academic service-learning model.

ARTICULATED LEARNING

The final step in the DEAL Model of Critical Reflection is *Articulating Learning*. For an individual learner, critical reflection in this step is often guided by the four prompts: what did I learn, how did I learn it, why is it important, and what will I do because of it (Ash & Clayton, 2009a, 2009b). The same questions have value when using the model at the program level. Here, we share examples of what was learned and changes that may result from that learning.

One learning outcome for the researchers is a deeper understanding and appreciation of the time and energy required to construct meaningful reflective practices. Although not a novel thought, researchers were confronted with the extent and degree to which time and energy spent in design determines deep learning from critical reflection. If a program wishes to implement a critical reflection strategy, particularly program-wide and over time, significant attention must be paid to the design of that strategy. Because of the time and energy required on the part of program administrators, including student coordinators, programs may need to consider the size and scope of their activity. Running counter to a typical growth model, programs may need to limit activity to fewer sites and number of students served to preserve or improve the quality of reflection. This may prove problematic for

programs being encouraged to grow the number of sites and increase the numbers of students served, creating competing priorities that then need to be managed.

An action resulting from this learning outcome for the IST is a commitment to limit sites to the current number, given current resources. Although IST continues to establish new partnerships and explore future sites, those sites will only be added if and when existing sites are discontinued or in the event of additional resources.

Another learning outcome for researchers is recognition that IST has yet to appropriately engage host communities in reflection. In examining who participates in reflection, at all stages of the IST experience and throughout the history of the program, the absence of meaningful community voice in reflection was striking. Identifying community partners with the interest, orientation, and resources to contribute to the student learning has been a compelling focus for program administrators; yet, no serious, sustained effort has been made to include those partners in the critical reflection process.

For IST, this learning informs not only the design of reflection practices but also the site selection process. In establishing sites, IST will work with community partners to determine how best to include their voice in the critical reflection process of the students. Considering the variables such as format, language, technology, and culture, program coordinators will design practices to appropriately and sufficiently give voice to community partners' experiences and perspectives.

An overarching learning outcome researchers achieved through this process of applying the DEAL Model at the program level is that student reflections have multiple uses in advancing and deepening learning in the IST program. Not only do students' reflections demonstrate their own learning, providing them a mechanism for making meaning of their experience, but those reflections also inform the program and how critical reflection is designed and conducted. Program administrators must be intentional in reviewing reflections for the purpose of program evaluation, specifically reflection design, in addition to examining them for evidence of what students learned.

As a result of this learning outcome, IST is reviewing how reflection artifacts are collected, shared, archived, and utilized. Further analysis of reflection data, existing and future, is planned to inform site selection, student recruitment, and academic preparation for service-learning as well as design and implementation of reflective practices within the IST program.

DISCUSSION

Through the process of applying the DEAL Model of Critical Reflection at the program level, researchers created the RDC, a tool that integrated reflection design elements with principles of good practice to help practitioners better understand and implement design of reflective practices. The process of developing and applying the tool clarified points along continua that reflect variation in reflection design.

The tool began as a somewhat formulaic, more-is-better, simple 1-2-3 progression along a set of continua. Through its application, it became clear that points along the continua, if more fully unpacked, would add opportunity for richer exploration and understanding of design opportunities and limitations. Although movement to the right end of the continua carries the value of breadth, applying the RDC revealed that deep learning is possible at any point, and the potential to broaden the reflection experience may be determined by factors other than design. Recognizing that reflective practices reveal a combination of institutional-, site-, partner-, and program-level issues and constraints, it became clear that change along the continuum is not necessarily linear, inevitable, or possible. Applying the RDC also raised questions about the sources of variation in a program's design and about the extent to which those variations matter to the quality of learning. Although the researchers did not assess quality of student learning as part of this study, such a line of inquiry is worthy of future research.

In developing the RDC, researchers did not distinguish elements of service-learning generally, from elements of ISL more particularly. Whitney and Clayton (2011) consider some implications of the international context *per se* for the design of reflection. Further review of IST cases through the lens of these ISL variables will allow researchers to (a) better understand and improve the IST program and (b) refine the RDC tool for more useful ISL program review, pushing beyond Whitney and Clayton's (2011) discussion to operationalize ISL design in light of implications of the international context. For example, one variable Whitney and Clayton identify is language, and in the international context, how language and cultural norms of communication "may create confusion for students during daily experiences" (p. 165). For the IST, this confusion resulted in the loss of a service site in Botswana in 2009. Community members and students differed in their expectations of service, and of behavior within the community, but were not able to communicate their differences. Only after two years of service teams, and the intervention of an unaffiliated American volunteer, did IST understand the problem. Had the IST program utilized the RDC with their site in Botswana, they may well have discovered a gap in community voice, and with intervention, may have been able to preserve the partnership. Inclusion of the host community in ongoing reflection can alert program facilitators about potential challenges and possibly address misunderstandings in the moment.

ISL is a significant investment for faculty, communities, institutions, and for students, with significant potential for return on that investment—personally, civically, nationally, globally. The risks and rewards of ISL warrant high quality and ongoing critical reflection. Critical reflection in ISL generates deep learning, and also safeguards against the potential minefield of cultural miscommunication. Success of applied learning programs generally depends upon the quality of reflection in which participants are engaged. Reflecting on a program's own practice of reflection design is as valuable as students reflecting

on their experience. To do so effectively, practitioners must take the opportunity to think critically about their design of reflective practices—its structure, format, and scope. Following a model of critical reflection such as DEAL, one must describe the experience; examine it in relation to learning goals; and articulate learning from the reflection. Applying the RDC to other applied learning programs may require enhancements, and we welcome further refinement of the tool for such purposes. For example, the current RDC, focused as it is on service-learning reflection design in an ISL program, presumes participation of students as team members and community partners. Refined for use with internships, the tool might instead include individual learners and organizational staff. “Service” would be broadened to “experience” and, in cases of undergraduate research, for example, might require clearer boundaries or definition. Questions and options on the RDC continua would need to be reviewed for relevance given assumptions about timeline for the applied learning experience. Utilizing the RDC tool, refined and piloted for use beyond service-learning programs, may offer opportunities for future research on reflection design in other forms of applied learning, such as internships or undergraduate research programs.

The DEAL Model of Critical Reflection (Ash & Clayton, 2009a), designed to help improve the quality of learning and of practice in applied learning, can be applied at the program level to improve understanding of and implementation of critical reflection in ISL programs. Building on the comparison of multiple instances of ISL in Whitney and Clayton (2011), and particularly the important variables of program design related to reflection indicated there, researchers integrated principles of promising practice into a user-friendly tool, the RDC, that can be applied to the design of reflection. Using the RDC to examine reflective practices from three program years in each decade of Kansas State University's twenty-plus-year IST program, researchers gained insight into the program's design of reflective practices and how reflection grew and developed as the IST program focus shifted from basic program evaluation to assessment of learning goals. Piloting the tool in this way also provided insights on how the tool might be improved to target reflection design of ISL programs in particular, with a focus on the implications of the international context.

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Applied Learning at the Graduate Level—Professional Science Master’s Programs Lead the Way

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To remain competitive in an increasingly interdisciplinary world, graduate education must produce professionals who can understand both their scientific disciplines and the business environment in which they work. With the addition of applied learning components outside of the traditional scientific laboratory and training in business skills, Professional Science Master’s programs (PSMs) help higher education adapt to this changing environment. The current study illustrates some models of PSMs and contains information on how institutions interested in using PSMs as a way to enhance applied learning at the graduate level can get started.

“Graduate education in the natural sciences has traditionally emphasized doctoral training for academic or research careers. This training, however, is not meeting the demand for professionals in business, industry, and the public sector, where individuals with a combination of scientific, technical, and managerial skills will be required.”
(BHEF, 2011, p.1)

The world of science is increasingly interdisciplinary, creating strong demand for professionals who can translate scientific and technical knowledge into policy-making arenas and entrepreneurial ventures. The skills needed to succeed in these endeavors, however, are often lacking. Students typically focus their education and research within narrowly-defined scientific disciplines, particularly at the graduate level. Faculty research drives education and prepares future cohorts of investigators. However, universities train more than just academicians, and to remain competitive and viewed as contributors to a state’s economy, faculty designing curricula have to consider the needs of regional employers.

INNOVATION IN EDUCATION

The National Governor's Association (NGA) released a report in which Sparks and Waits (2011) include key recommendations for institutions of higher education to:

- set clear expectations for higher education's role in economic development;
- emphasize rigorous use of labor market data and other sources to define goals and priorities;
- encourage employers' input in higher education;
- require public higher education institutions to collect and publicly report impacts;
- emphasize performance as an essential factor in funding.

At the graduate level, universities typically base new program development initiatives on the research expertise and interests of faculty, students, and other internal factors. Interactions with prospective graduate employers are limited, and measures of success are based on enrollment and completion statistics, not job placement and other post-graduation parameters. A more recent Council of Graduate Schools (CGS) report (Wendler, et al., 2012) also calls for changes in graduate education, emphasizing the need for stronger linkages between higher education and employer groups. These two reports suggest that universities explore new pathways to program development and monitoring.

Signature research centers, like Oregon's Nanoscience and Microtechnologies Institute, the Built Environment and Sustainable Technologies Center, and the Translational Research and Drug Development Institute, create communities of innovation that facilitate the research and development process and provide students with applied experiences throughout their graduate education. Kamel Gabriel (2010) describes communities of innovation as links between the research community, business community, social community, and post-secondary institu-

tions. Institutions of higher education can similarly create educational "communities of innovation" focused on development of graduate programs relevant to regional economic needs.

Research by Tobias (2009) found that as late as 1995, fewer than 3% of all U.S. master's degrees were in the sciences, and many of those were viewed as failed Ph.D.s. Largely in an effort to address the declining percentage of U.S. citizens earning graduate degrees in science, technology, engineering and mathematical (STEM) fields, the Alfred P. Sloan Foundation began supporting development of Professional Science Master's programs (PSMs) at institutions of higher education across the United States. These programs serve as communities of innovation and are rife with examples of ways to incorporate applied learning practices into graduate education. Development of PSM programs require that directors follow the NGA and CGS guidelines described above.

PROFESSIONAL SCIENCE MASTER'S

Professional Science Master's provide students with two years of graduate-level education in a STEM field and cross-training in workplace skills through professional courses and an internship experience. Advisory boards are required for PSMs and include representative employers who provide input on curricular content and desired learning outcomes. Professional course topics may include any combination of business management, communication, ethics, and other workplace skills. An internship project serves as the capstone experience in lieu of thesis research. Many of the approximately 300 PSMs now offered by 127 institutions (<http://sciencemasters.com>) are in emerging or interdisciplinary fields like *Renewable Energy*, a PSM currently in development at Oregon State University (<http://psm.science.oregonstate.edu>). With the assistance of the Sloan Foundation, more than fifteen administrative units have been created as collaborations among multiple institutions within a state or university system to facilitate the development of new PSMs (<http://www.nash-psm.org/>). The chief academic officers of all institutions in the State of Missouri have recently advocated the development of statewide PSMs, and the institutions in the state leading in undergraduate applied learning (Missouri Western State University, Missouri State University, and Truman State University) have taken the lead in developing PSMs.

At the undergraduate level, the sciences have done an excellent job of incorporating applied learning experiences throughout the curriculum. Starting with lab work in general education courses and culminating in faculty-student research, many institutions have adopted the Characteristics of Excellence in Undergraduate Research (COEUR) advocated by the Council on Undergraduate Research (CUR, 2012). At the graduate level, however, training has traditionally consisted of work

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on the thesis advisor's own research, which is frequently very basic in nature. Work on applied problems encountered in business or industry is often lacking.

PSMS AT OREGON STATE UNIVERSITY: EXAMPLES IN APPLIED LEARNING

Although many institutions could be used as a model, Oregon State University (OSU) offers five PSMs in biotechnology, applied physics, environmental science, fisheries and wildlife administration, and botany. The program template for PSMs at OSU includes a minimum of 30 quarter-credit hours in a STEM field, 18 credits of professional coursework, and a 3 to 6 month internship (6-12 credits) for a total of 54 credits. This is comparably more than a traditional master's minimum of 45 credits and resulted in the description of PSMs as "science plus" degrees. Students usually still finish within two years, because internships are focused in time and typically start in the summer following the first year of study. At OSU, all students are required to have a major professor and at least two other graduate committee members. In addition to completing the coursework and an internship project, students must present project results in a seminar and pass an oral examination to earn the PSM degree. Other programs, for example those at Missouri Western State University in Chemistry or Human Factors and Usability Testing, have a more traditional Master's requirement of 36 semester hours.

The ability to communicate well with others has been universally touted as the top professional skill preferred by employers across all disciplines (Stevens, 2005). Therefore, virtually all PSMs nationally provide some level of training in communication either as stand-alone courses or embedded in the science curriculum. The professional component of OSU's PSMs is shared across programs and was developed based on feedback from relevant employer groups. Scientists are often called upon to perform "other" tasks, such as guiding development of new policy for agencies, drafting business plans for start-up companies, managing non-profit organizations, and serving in administrative roles as they advance in their careers. To properly prepare PSM graduates for such tasks, OSU developed and requires students to take six professional courses (3 credit hours each):

- Communication and the Practice of Science,
- Research Ethics,
- Professional Skills,
- Accounting and Finance for Scientists,
- Project Management and Marketing Scientific Technologies,
- Innovation Management.

Each class includes students from a variety of STEM fields, so cross-disciplinary communication is an inherent learning outcome. These courses are also offered online as a Graduate Certificate in Management for Science Professionals Program for non-PSM majors. Topics in the Research Ethics course include scientific integrity, conflicts of interest between academic science and commercial science, and social responsibilities in science. A series of three business courses, ending with Innovation Management, prepare students to write their own business plans for a new scientific product or service of their own design. The Professional Skills class requires students to work together on a current scientific problem within the context of an existing business. Company representatives sponsor and mentor the class. Students evaluate different work strategies, draft a project management plan, and then execute the plan. End products usually include a final report and presentation. Lectures cover topics like teamwork, leadership, and working with public media (e.g., how to give effective camera interviews). Students are also asked to participate in a reflective learning exercise at the end of the term in which they evaluate the team, their own leadership and communication skills, and the leadership and communication skills of their classmates. All of these activities provide applied learning experiences for PSM students that may be omitted in a more traditional program.

Prior to the start of fall term, all OSU PSM and Graduate Certificate students participate in a 5-day orientation workshop, which is held at an off-campus location to facilitate social engagement. Costs to deliver the workshop are offset by a differential tuition that these students pay, and no credits are awarded for participation. Individuals get to know their cohort, support staff, and professional course instructors. This familiarity likely translates into greater student success and retention during the first academic year (Ellis-O'Quinn, 2012). Professional development exercises not included elsewhere in the program characterize the workshop and include career development strategies, job search skills, writing effective cover letters and resumes, interview skills, time management skills, working in virtual environments, and dining and networking etiquette. Instructors teach in hands-on, interactive formats that engage students and leave them with skills that enable them to successfully secure internships in the future. For example, students are required to prepare for interviews in both the interviewee and employer roles. As the interviewee, they must research and draft a position description, update their resume, draft a cover letter, and submit their application to prospective "employers." As the interviewer, students must prepare appropriate screening criteria and questions prior to interviewing "applicants." Each student is interviewed twice and must conduct two interviews. A subsequent reflective learning exercise requires students to summarize their interview experience with each individual (as either the interviewer or interviewee), which provides feedback from the other person's perspective.

The internship project is the student's capstone experience, replacing the graduate thesis requirement. It is, therefore, carefully evaluated

by the student's committee. An internship proposal must identify learning outcomes and evaluation criteria, be completed at least three weeks prior to the start of the project, and be approved by the graduate committee, internship supervisor, and PSM program director. Students are expected to maintain a journal throughout the internship experience, and the format will vary depending on the nature of the project. An online internship evaluation form is submitted by the internship supervisor at the conclusion of the project, and a grade is assigned by the major professor based on the internship evaluation, journal, and final report. Every final report must include a scientific as well as a business component, which requires the student to integrate his or her scientific and professional training by framing research conducted in the context of a business. This occurs whether the internship provider was a non-profit organization, for-profit business, or government agency. A seminar describing the internship (science + business) is given by each student just prior to his or her oral examination.

Internships not only provide students with hands-on learning experiences and opportunities to integrate scientific and professional knowledge recently acquired through coursework; they also have opportunities to experience the culture of a particular company. Internship providers are able to hire short-term employees for particular projects, and they can utilize a "try-before-you-buy" approach to fill potential permanent positions. Approximately 38-40% of OSU's 70 PSM students end up accepting full-time employment from their internship providers, and this mirrors what is seen nationally (Bell & Allum, 2011).

Internships and applied research in PSMs also provide students the unique opportunity to perform lab work utilizing equipment actually used in manufacturing-scale operations, and to have experience with many proprietary techniques that cannot be taught in a traditional university lab. These abilities to "scale up" what they have learned make them valuable employees.

NEW OPPORTUNITIES IN EDUCATION

Faculty working with PSM students can capitalize on off-campus connections made through their students' internship searches and projects, supporting educational communities of innovation. Professors with an understanding of current workforce needs are the ones who, together with members of PSM advisory boards, create new PSMs and course offerings to meet those needs. At OSU for example, new professional electives include "Advanced Scientific and Technical Writing" and "Mastering the International Work Environment." Increasingly, science and business are practiced on an international stage, and professionals must develop an ability to convey ideas, make decisions, and develop consensus across cultural boundaries. The Mastering the International Work Environment class begins by defining culture not only in terms of national identity but also social identities

like age, gender, profession, race/ethnicity, and academic discipline. In this class, culture-specific information includes aspects of how both personal and organizational cultures influence workgroups. Intercultural communication theory and practice create frameworks for different communication styles and value dimensions to help individuals adapt to different international work settings. Communication technologies used for collaboration are explored, and discussions address cultural norms and how team dynamics, team effectiveness, and interpersonal relationships are altered in online work groups. Guest speakers provide case studies for discussion, and student term projects blend key culture and communication technology topics.

PSMs also provide an opportunity for faculty to think outside of the limitations of the single course-single skill model. For example, communication skills can be incorporated across the curriculum rather than being taught in a single dedicated communications course. Capstone courses can have students from multiple disciplines work together to develop a business plan. These experiences provide a much more realistic approximation of what will be encountered in the workplace, and provide a rich source of applied experience for the students and faculty.

IT'S WORKING

Oregon State University has graduated over 70 students from its PSM programs over the past 8 years, and approximately 90% of those graduates are employed in their field. Based on a recent national survey completed by the CGS (Bell & Allum, 2011), over 55% of employed PSM graduates earn \$50,000 or more in annual salary. The majority of PSM graduates (over 75% of OSU's PSM alumni) secure employment regionally, thereby directly contributing to the growth of local economies. Of the graduates surveyed, more than half worked for businesses, 23% worked in government agencies, 16% in academia, and nearly 8% in non-profit organizations. Employment providers vary by discipline, with government agencies hiring the greatest number of environmental science PSM graduates. Employers asked for testimonials about PSM graduates have been very positive. For example, Linda Amedo, Incubation Lead for Hewlett Packard in Corvallis, Oregon states "The PSM creates individuals who are capable of bridging the worlds of science and business, which is critical for success within the science and technology industries" (personal communication, August 12, 2010).

Several OSU PSM students worked for start-up companies during their internship project or after completing their degree and demonstrate the application of this science *plus* education. For example, one former student earning a PSM in Applied Biotechnology conducted her internship at Intuitive Genomics, Inc., a bioinformatics services start-up company, which engaged her in an entrepreneurial venture and increased her knowledge and skills in the field of genomics and

bioinformatics. She used this experience as a stepping stone to her current position with Sharklet Technologies, another start-up bioscience company, where she works as their Business Development Associate.

Other students use their internship experience as a way to explore future employment opportunities with specific organizations. In the Pacific Northwest, examples of companies that hired their PSM interns after graduation include Microsystems Engineering, Inc., Life Technologies, The Nature Conservancy, Kashi Laboratories, a variety of government agencies, and other organizations.

Many individuals return to graduate school after having worked for several years, and they use their new scientific and managerial skills to move horizontally into a new position or vertically up the career ladder in the same organization. For example, one PSM student worked for the Environmental Protection Agency (EPA) while she was completing her PSM in Environmental Science. After graduating, she accepted a new position in the EPA's Risk Characterization Branch, which utilized her new skills in Geographic Information Systems. Another was able to move to a higher-level managerial assignment within the National Oceanic and Atmospheric Administration after completing his PSM in Environmental Science.

Career opportunities for PSM graduates are generally broader than for those who complete a traditional M.S. program, because PSM graduates can "wear many hats." Students in traditional M.S. programs tend to focus on narrowly defined basic research with complementary coursework to develop depth of knowledge within a specific discipline. Graduates from such programs often pursue a Ph.D. or find work as a technician or research associate. In contrast, PSM graduates are comfortable communicating with individuals in science and business, and they understand how to apply research results to new start-up ventures or policy development initiatives. Examples include a former PSM student in Environmental Science, who completed her internship with the Washington Department of Fish and Wildlife where she created new technology-based ways to communicate information about marine recreational fishing regulations with fishermen. She is currently working in Washington, D.C. on marine policy issues.

A few PSM graduates have continued their education to earn Ph.D.s, MBAs, or law degrees. One student completed his PSM in Applied Biotechnology with an internship focused on production of biofuels. He is currently pursuing his Ph.D. in the same field at Colorado State University. A PSM student in Human Factors and Usability Testing from Missouri Western State University went on to pursue a Ph.D. in the MIT Media Lab.

Myhrvold (2010) indicated that just 1% to 3% of patents generate a profit for their inventors. PSM graduates have the potential to increase the number of profitable patents and initiate successful business ventures because they have depth of training in science plus breadth of training in business management and entrepreneurship. Individuals in other science-related disciplines can also benefit from the professional education that characterizes PSM programs. For example, veterinarians

are trained as doctors yet many end up running their own medical practices—typically with no training in accounting, management, or marketing.

Although it is hard to estimate the actual impact educational programs like PSMs have on local and regional economies, directors and state education leaders are optimistic. Realizing how well PSMs can help meet workforce needs, state and university systems have started investing in PSM program development initiatives.

CHALLENGES

Directors of PSMs are pioneers, blazing new graduate program development pathways to create educational communities of innovation. Pioneers typically face many challenges, and the PSM movement certainly has its share. Traditional faculty members often view higher education's contribution to economic development as a secondary by-product of the education process, not as a primary goal. However, increasing pressure from state and federal government agencies as well as student "consumers" will continue to push institutions to use labor market data and employers' input when exploring new program development initiatives. Measures of success will have to include job placement and other post-graduation parameters in addition to enrollment and completion statistics. Many institutions receive faculty buy-in, and those institutions that remain entrenched in the more traditional ways of thinking risk being relegated to obscurity.

Administration of PSM programs at an institution is often coordinated centrally by a full-time director and part-time assistant who are responsible for overall student recruitment and orientation, advising, professional course coordination, website maintenance, outreach and advisory board interactions, alumni tracking, and other activities. Individual PSM program directors are based in the department offering the program, provide some student advising, are responsible for the science curriculum, and facilitate the marketing and recruitment efforts of the central office. Advisory boards identify new program development opportunities, generally promote programs to prospective students and employer groups, give seminars, and sponsor special projects or events. Professional curriculum and costs of delivery can be shared across different programs. Borbye, Bechert, Lawton, King, and Ambos (2012) recently identified five key strategies to support and sustain PSM programs. They include:

- connect leadership silos and sustain centralized management,
- nurture robust external partnerships,
- automate numerous administrative and educational processes across and within institutions,
- develop and promote graduate degree business models, and
- connect and share ideas and resources nationally.

State- or system-level PSM advisory boards can make recommendations for new program development opportunities based on state and regional workforce trends, which universities can pursue based on complementary research or educational strengths and interests.

Breaking traditional boundaries to collaborate on educational program development projects beyond the Ivory Tower has not been easy, particularly in research-intensive universities, but is something that PSM directors have had to do. As Boyer stated in 1990 (p. 77), "Now is the time, we conclude, to build bridges across the disciplines, and connect the campus to the larger world. Society itself has a great stake in how scholarship is defined." As the applied learning movement continues to gain momentum in undergraduate studies, it will likely complement the efforts of those who are dedicated to creating similar learning experiences at the graduate level through PSMs. Existing M.S. programs should consider re-inventing themselves as PSMs, and as research drives the creation of new fields of study (frequently through the merger of existing disciplines), new educational programs need to follow.

Given numerous examples of the integration of applied learning and business skills into graduate STEM curriculum, the success of pioneering programs, and the needs of the business community, expansion of PSM opportunities just makes sense. Institutions wanting to learn more about developing PSMs have numerous resources available to them. Some of those resources include:

<http://sciencemasters.com/>

<http://oregonpsm.org/resources>

<http://www.npsma.org/>

<http://www.nash-psm.org/>

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Sharing the World: Using Study Abroad to Enhance an On-Campus Service-Learning Project

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The purpose of this paper is to illustrate use of a study abroad opportunity to support a service-learning experience. The study abroad component was a semester-long, multiple-country program in Central America and the service-learning project was an afterschool program for rural elementary and middle school students. Combining the two resulted in the opportunity to use the study abroad experience as a platform to share with the students the culture and issues facing others in the global community.

The present paper describes a project that was developed between a student and a faculty member at a two-year women's liberal arts college with enrollment of around 350. The project was conceptualized as the student was preparing to embark on a study abroad experience to Central America. The student had spent two semesters involved in campus-based service-learning as a co-leader and then leader of an afterschool program focused on developing cross-cultural perspectives in local elementary and middle school students. The children who participated in the program were from two nearby rural school districts in Vernon County, Missouri. This region has high childhood poverty rates at, according to the most recent census report, 30.8% (compared to the state average of 18.9%) though there was certainly diversity in socioeconomic backgrounds within the group of children who participated (<http://mcdc2.missouri.edu/webrrpts/cntypage/29217.html>). One school group brought three to five children on their meeting days, while

the other brought between fifteen and twenty-five children. The project was born out of a desire to find a way to use the experiences abroad to enhance the existing afterschool program for these children.

One of the biggest challenges of the afterschool program was to develop programming that was truly representative of the countries and cultures it aimed to present. The previous model of creating a lesson plan on some aspect of a country's culture each week was incredibly limited in its ability to foster a deeper understanding of diverse perspectives as there was no real reasoning behind the choosing of each country. Due to this challenge, the main goal of this project was to create a more in-depth and focused afterschool meeting model to learn about the region of Central America. This was done by focusing on the region (rather than particular countries) visited during the study abroad experience as a whole throughout the semester-long project, then narrowing in on a particular aspect of the region during each meeting and discussing the similarities and differences within each country.

The final title of the project was "Exploring Central America." It provided a semester-long activity- and discussion-based learning experience for the afterschool program children to learn about Central America. Each meeting provided factual information and interesting activities designed to foster creativity while highlighting different aspects of Central American history, culture, geography, and language. The format of each lesson plan included: background information for college student mentors (who had not had the abroad experience) on the topic to be covered, an "order of activities" with details for each, learning objectives for the participants (both volunteers and children), assessment activities, and other details required for preparing the lesson. This lesson plan allowed the mentors to have some understanding of the region prior to assisting with the children. There were still limitations to the depth and scope of the lessons due to time and space constraints, but the new emphasis on the regional diversity and offering information based on real experiences improved the learning experience.

IMPLEMENTATION

A typical meeting for the "Exploring Central America" program went in the following order: introductions and question of the day, a PowerPoint or slideshow of pictures or facts, activities expanding on the topic of the day, and then wrap-up and assessment question(s). The purpose of the introduction and "question of the day" was to ensure that all participants were engaged from the moment that they entered the classroom, creating a space where all voices could and would be heard and respected. This question was generally related to the topic of the meeting and was answered by every child in the room. Following that, we had a short slide show typically including many pictures taken while abroad and gathered from the internet to visually represent the topic for the week. Once the basic information was presented and questions were answered, the activities which built on this information would take place. These activities included discussions of the cultural differences between the United States and Central America, whether formally or informally planned. At the end of each meeting we would have a time to review the main points of the meeting's topic and respond to assessment questions (usually orally) to ensure that the objectives were met.

This style of meeting was influenced by the praxis of informal education made popular by Freire (1970). It utilizes dialogical approach to immerse the students in a conversation about the cultural realities and information of Central America as a means to challenge preconceptions or introduce our often ignored neighboring countries. The obstacles of space, time, and varied developmental stages made it difficult to achieve the level of engagement we strove toward (Angotti, Doble, & Horrigan, 2011). However, this particular project did allow us to delve into an active conversation with children about the realities of life in Central America. We were working with children in the elementary and middle school age range to learn about topics that were often challenging to address in an age appropriate manner. Due to the ages and subject matter, our emphasis on dialogue and engagement was, at times, more heavily planned and contrived than Freire would have perhaps suggested as the ideal. The goal however, was to provide genuine knowledge of the region and encourage further inquiry, thus encouraging participation and enhancement of the global community. Despite the age group and time limitations, this project was frequently able to achieve its objective of creating an environment which fostered meaningful conversations and inquiry.

All of these lesson plans were compiled in a volunteer handbook distributed to the four college student volunteers in the program at the first volunteer meeting. This handbook also included a brief history

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of the afterschool program, goals for students from the local school districts and for volunteers, and a description of service-learning taken from the college's *Faculty Service Learning Handbook*. The purpose of the final element, the description of service-learning, was to assist the participating student from the college in understanding the essential pedagogy of service-learning, which is integrating the "real world with the academic world" (Rimmerman, 2009, p.24). Three of the four volunteers were interested in careers in social work or teaching, so this experience provided them with an "opportunity for developing relevant and meaningful ways to learn about abstract and often challenging concepts," a benefit Farber (2011) discusses in *Changing the World with Service Learning*. The volunteers were able to have frequent encounters with children from rural Missouri schools, which provided them the context to support prior and future study of child development and teaching and learning styles. All of the elements of the handbook were combined in a single document along with contact information and a calendar, which helped facilitate the maintenance of organization and consistency throughout the semester.

CONNECTION BETWEEN SERVICE-LEARNING AND STUDY ABROAD

The value of service-learning and importance of study abroad in higher education has been often discussed in academia; however, very little has been written on the connections between the two separate entities. The connection usually described is related to doing service-learning projects abroad (Parker & Dautoff, 2007). Another relevant connection that is less often covered is service-learning upon return from study abroad that essentially shares those first hand experiences with the local community. Using the interest, passion, and knowledge of different parts of the world gained during a study abroad experience can be a valuable way to give back to the community.

The unique nature of the study abroad experience which the student participated in was especially conducive to the development of this project. This particular study abroad trip traveled to many locations (rural villages, capitals, etc.) within Guatemala, El Salvador, and Nicaragua in an experience-based program focused on social change. As a routine part of the coursework, students on the trip were introduced to many influential people of each of these countries throughout the semester who spoke on the issues being studied. These people came from a variety of backgrounds and viewpoints so as not to be biased to one side of an issue or another. For example, when in Nicaragua studying history of the region (particularly, the Sandinista Revolution) students met with a Sandinista leader from the conflict for one class

period and a Contra leader for the next. In addition, a variety of other speakers from local organizations shared their experiences and thoughts on that period of Nicaraguan history and how it has played into the current political system. This type of meeting was just one of countless examples of how the trip provided diverse perspectives and fostered an understanding of the different regions visited beyond the picturesque scenery.

When planning activities for the afterschool program, the plethora of experiences made it difficult to choose which aspects of the regional culture to attempt to present to the children. How does one even attempt to convey the diversity and richness of an entire region in a mere two-hour meeting several times a month? The student aimed to represent different topics which could be easily introduced and understood by the children in the group and which best utilized her own experiences and conversations with people she met while abroad. There was frequent encouragement for the children to continue to have an open mind and interest in learning beyond what could be presented in the time frame. Often, the children would come up with questions during the wrap-up period of the meetings and expressed a desire to travel to Central America.

According to Matthew Cossolotto (President and Founder of Study Abroad Alumni International) in his recent address to study abroad alumni, it is not enough to think globally. One needs to strive to "be global" (Cossolotto, 2009, p. 567). Being global is a goal of many in higher education which has spurred the development of study abroad opportunities and general internationalization of curriculum. Martha Nussbaum (1997) states in *Cultivating Humanity* that "we must educate people who can operate as world citizens with sensitivity and understanding" (p. 52). This increase in intercultural education should assist in developing a global perspective among the youth involved in the program. Further, such a perspective should develop the skills needed to become "better informed members of the community and workforce" (Zhang, 2011, p. 181). Programming to destinations that are less focused on tourist activities and more on engagement and immersion in the local community are arguably more conducive to providing an opportunity to have a more genuine experience of the country being explored or studied. Given the anticipated benefits of this international perspective, extending these benefits from studying abroad to youth of the community through service-learning projects seems to be a logical expansion.

In the case of the "Exploring Central America" project, the student who studied abroad was able to offer first-hand stories, knowledge, photographs, and artifacts to the children she worked with, which piqued their interest and imparted to many of them the desire to learn

more about the world beyond their backyards. Starting this intercultural perspective and conversation at a young age could assist in preparing these children to function more effectively in this diverse and globalizing world. This expected increase in “desire to learn” and building of relationships is another benefit common to service-learning that this project epitomizes (Robeck, Laster, Jenne, & Brooks, 2003, p. 93). Although the assessment for this small scale project is limited to informal soft data, the hope is that the time spent in the program will serve as the stepping stone for these children into further interest in the world around them.

In much of the writing on service-learning, there is an emphasis on the creation of a “reciprocal relationship” because “service-learning” requires the learner and the person or group who is receiving the service to be involved. Both are valuable in creating the learning experience and both should benefit from the interaction. In addition to working to serve the children of the community, this program also allowed the student leader of the program to experience a common benefit of service-learning which is personal growth (Parker & Dautoff, 2007). She was able to develop interpersonally by coordinating the program volunteers, interacting with representatives from the school, and leading the afterschool program meetings, thus experiencing what is sometimes referred to as connective learning (Parker & Dautoff, 2007). She was able to develop cognitively, as well, by integrating the knowledge acquired abroad with an understanding of age appropriate activities to provide an engaging and quality experience for the groups attending the afterschool program. According to Braskamp and Engberg (2011), higher education stresses “the development of the ‘whole student’ along several dimensions—intellectual, social, civic, physical, moral, and spiritual” (p.34). Projects such as the aforementioned are closely aligned with the development of the “whole student” which is another notable benefit of the collaboration between the experiences of study abroad and service-learning opportunities.

CHALLENGES

STUDENT PERSPECTIVE

When developing the project there were challenges that were faced by the student, ranging from effective planning to dealing with classroom management. Many frustrations were in regard to dealing with the accompanying teachers who had a different approach to classroom management. Working on open communication was a key to overcoming this challenge. Learning how to address different styles in teaching and managing classroom behavior was an important lesson.

Another classroom challenge was to learn how to effectively adapt and adjust plans to an inconsistently sized group with a wide range of ages, skills, and other dynamics. This challenge was resolved by planning extra activities with a variety of age and skill levels in mind. Another way of addressing the diversity in ages was incorporating ways to make smaller group activities where everyone could be engaged at a level appropriate to them. Finding volunteers who were reliable and engaging was also a challenge, though by the start of the program a quality group of four college students was prepared to tackle the semester.

In terms of the study abroad experience, the primary challenges were financial and logistical concerns. The student was a Pell-grant recipient and thus was eligible to apply for the Gilman International Scholarship for study abroad. This scholarship, along with financial assistance from the study abroad program, made it possible for the student to participate in the semester abroad. Although not all students are so fortunate as to receive these particular scholarships, there are many opportunities available to assist students with limited financial resources. The volunteer mentor students may not have had the opportunity to study abroad, but they reaped secondary benefits from hearing about the experience. All of them reported having an increased understanding and interest in the region based on what they had learned through volunteering with the program. This aided in expanding their cross-cultural understanding and in the development of a global perspective. Although this certainly does not replace the study abroad experience, students returning from time abroad can actively enrich the lives of their peers by sharing their experiences of the world with them.

There was, as mentioned before, also the challenge of avoiding oversimplification of the countries and region presented in the project. When discussing with children alternate cultures which are complex, there is a danger of simplifying in a way that does not accurately present the culture or country. Finding ways to make points about differences between countries and cultures without slighting or misrepresenting either proved to be a challenge. When conscious of a prevalent Western perspective, one can work towards a deeper understanding of the “other” culture and its complexities by focusing on the presentation of diverse experiences and openly discussing barriers to understanding the whole picture. For example, Central America is an incredibly diverse region both culturally and geographically. Instead of presenting the entire region as a uniform entity, we spent several meetings talking about the differences and similarities between the geography and culture of the different countries in the region. The activities accompanying this discussion supported the understanding of this diversity. This lesson of understanding that the “other” is not uniform is a lesson easily taught in this context. All of these difficulties

and challenges, though sometimes frustrating, allowed for practice in flexibility, increased awareness of cultural and interpersonal skills, and frequent use of problem-solving skills.

FACULTY PERSPECTIVE

A primary concern from the faculty perspective regarding any service-learning program is whether it will be sustainable beyond the initial event (Reisch, 2011). The afterschool program discussed here had been in existence for a couple of years prior to this student project. However, it had been evolving during that time and was “ripe” for supporting the enhancement proposed here. Due to the small size of the institution involved, it is unlikely at this point that study abroad students will be available to continue such an ambitious project every semester; however, the basic program itself will continue regardless, and future students can certainly imitate the model of focusing on a region in greater detail.

FUTURE OF THE WORK

According to the article “How to build a service-learning program that lasts” (2004), institutional support is an important ingredient in sustaining a service-learning program. Institutional willingness to support the student and faculty member’s efforts, both financially and otherwise, was tremendously important in this case. Given the emphasis on service in the institution’s mission, we anticipate such support to continue. However, the project does currently rely on one faculty member in the psychology department. Ideally, other faculty members and disciplines should be recruited as well. For example, international business and international relations students might be encouraged to share their experiences from their study abroad, particularly if faculty in those disciplines believed in the importance of service-learning. The goal would be to keep the program in an academic home which is discipline-based and academically governed, as indicated in Butin’s (2010) book, *Service Learning in Theory and Practice*. The room for creativity and flexibility by connecting to other disciplines would likely benefit the overall health and sustainability of this program. We hope to see this program continue to flourish to the benefit of both the youth it serves and the emerging student leaders involved.

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No More Hiroshimas! Assessing Personal Narratives of Survivors of Hiroshima on a Campus Community Using University-Wide Goals and an Applied Project in a Graduate Research Methods Course

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Guest speakers are a common feature in institutions of higher learning. Being so common, we might assume that exposure to individuals discussing a distinctive life experience has a positive impact on students. However, there is virtually no research on assessing the impact of guest speakers intended for the entire campus community. This paper offers a framework to assess campus-wide co-curricular initiatives aligning with overarching institutional goals and/or mission, rather than specific course outcomes. The assessment framework was applied to a large scale university-wide co-curricular project. In September 2010, three atomic bomb survivors from Hiroshima, Japan and their interpreters completed a 10-day residency at a mid-sized, Midwestern university. The speakers shared their stories of survival and pleas for peace to over 1,000 members of the campus and community. A survey assessed the impact on students who saw the speakers in terms of two university goals: “engaged” student experiences and developing a “worldly perspective.” Students in a graduate research methods class aided in the creating, administering, and analyzing results of the survey. Results included both an increase in worldly perspective and a high level of engagement with the speakers. This framework provides a foundation for assessment of campus-wide co-curricular programming that could be used by both faculty and administrators.

At 8:15 a.m. on August 6, 1945, the world’s first nuclear weapon was used on a human population in Hiroshima, Japan. This single blast immediately killed approximately 70,000 individuals and by December

1945 was responsible for another 70,000 deaths, bringing the total to 140,000. The blast occurred 580 meters above the ground creating a trifecta of disaster: a wind blast, a heat blast, and a radiation blast that leveled the city. Since 1945, tens of thousands of other people have died as a result of long term effects of radiation poisoning and other wounds (Damage from an Atomic Bomb, n.d.). A similar event occurred three days later in Nagasaki, Japan when a second nuclear bomb was dropped on August 9, 1945, with similar results on those exposed to the blast. These are the only two times in history when a nuclear weapon was intentionally used on a human population during a time of war.¹

Lifton (1967) provided an in-depth account of the physical and psychological problems the survivors encountered, including becoming pariahs in their own country. Little was known about radiation poisoning at the time. When seemingly healthy survivors of the initial blast began to mysteriously die about six weeks after the explosion, survivors were seen as diseased and potentially contagious. Many hid their survivor status so they would not be discriminated against in job opportunities and potential marriage offers. However, some did not have the opportunity to hide their survivor status as they were burned so badly that their visible scars could not be hidden; they have been discriminated against and ridiculed for much of their lives.

Yet, there were, and still are, survivors who have chosen to tell their personal stories in hopes that another atomic weapon will never be used again on humans. In the summer of 2009, I had the opportunity to travel to Hiroshima, Japan and go to the Memorial Peace Museum and Memorial Peace Park. The experience was life-changing. I realized I knew so little about what had actually occurred, in particular, the impact on the civilian population. Perhaps it sounds clichéd, but as an educator I had the overwhelming feeling that I *had* to share this information with my campus community. I wanted to give everyone a chance to know this historical event that is not given adequate coverage in high school and even college history textbooks (Selden, 2005). This was not about placing blame or arguing the decision to drop the bomb, or even the ethics of war. It was to share the truly awesome power of an atomic weapon and its horrific impact. It was to make sure that we as Americans understood what it meant to casually say, “Just Nuke ‘Em.” I took to heart the mantra of so many survivors (also known as

Hibakusha) when they are speaking to a group about their experience. The Hibakusha invariably finish their personal stories with “let there be *No More Hiroshimas*.”

The World Friendship Center (WFC) is a non-profit organization dedicated to aiding the survivors of the atomic blasts, based in Hiroshima, Japan. One of their missions is to be an education outlet for those who are interested in learning more about the atomic bombings. The volunteers give tours of the Memorial Peace Park in English and set up hour-long presentations by Hibakusha telling their personal stories of what happened to them on August 6, 1945 and in subsequent years.

I knew that I could not bring the entire campus community to Hiroshima, but realized that I could bring the Hibakusha and their interpreters to the university to share their personal stories. Over the next year, with the support of the university, a Greer-Oppenheimer grant, and the World Friendship Center, we were able to support a 10-day residency for three survivors and their interpreters to share their stories and experiences of the atomic bombing, from September 26 to October 4, 2010.

As the Hibakusha began to go to classes to tell their stories, I began to realize the multi-faceted impact of these survivors on the students and teachers. I had always planned to document how many presentations were given, to how many people, to report to the grant authorities and the university administrators that had funded the project. When I looked for research on how to go about assessing campus-wide co-curricular initiatives, there was no example that I could find. However, I recognized this was a unique educational experience for our students that seemed to reinforce overarching goals at our institution including students having an “engaged” educational experience and to have an increased “worldly perspective” by the time they graduate. In addition, I saw how I could incorporate this project into an applied learning project for my graduate research methods class. I wanted to make sure that we collected data related to the impact the presentation had on the students and give my graduate students a “real world” opportunity to construct a survey, gather and analyze survey data, and prepare executive summaries of findings.

This paper serves two purposes. First, the primary purpose is to offer the framework of using university goals to assess the impact of a university-wide co-curricular opportunity (the 10-day Hibakusha residency) and second, to explain how this co-curricular event was linked to a graduate level research methods course, creating an opportunity for an applied learning experience. The paper links the co-curricular and applied learning research experiences by summarizing the Hibakusha

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¹ There have been other people who have been affected by above ground nuclear weapons testing explosions, such as the Marshall Islanders.

residency, discussing the applied learning of graduate quantitative research methods students, reporting the findings of the survey on the impact of the Hibakusha presentations on the campus community, and offering a framework for assessing campus-wide educational initiatives that are not part of a single course or program.

REVIEW OF LITERATURE

There are multiple ways that universities can engage in experiential or applied learning (e.g., internships, study abroad, undergraduate research, service-learning). Much research in the past two decades has focused on how to implement and assess these types of experiential or applied learning (Ash & Clayton, 2009; Boyer, 1990; Eyler & Giles, 1999). However, one area that appears to have flown under the radar is the co-curricular inclusion of the impact of inviting guest speakers to campus.

Guest speakers are a longstanding characteristic of higher education. Many institutions of higher education have formal committees tasked with inviting individuals with unique and distinguished qualifications to speak to the campus community, or administrative support offices where individuals or groups on campus can apply for funding to bring a speaker to campus. Yet a search of the literature on the assessment of guest speakers on campus activities and assessing the impact of guest speakers, in particular, resulted in very limited findings.

The few studies that were found (Costello, 2012; Kamoun & Selim, 2007; Robinson & Kakela, 2006) assessed the impact of guest speakers used in a specific class to complement course-specific outcomes. I could find no literature assessing the impact of guest speakers for a campus-wide initiative. Perhaps this is because guest speaking co-curricular experiences are often developed *for* campus-wide consumption rather than being part *of* a specific curriculum. In addition, these opportunities may not be initiated by a faculty member or department, but rather in a student support office (e.g., Student Affairs, Office of Diversity, or Student Government Association).

However, it may be wise to begin to discuss the best ways to assess such guest speaker events. Support of a vast majority of public institutions by state governments is shrinking, sometimes dramatically (Jaschik, 2011). Institutions of higher education are under tremendous stress to account for monetary expenditures and performance-based funding is part of the budget equation (Rabovsky, 2012). At this point, the most recent state pressure to assess has emerged in the traditional curriculum. However, at my own institution we have seen officials require assessment of traditional *and* co-curricular activities initiated by both academic *and* student support groups of the campus community to make university budget decisions.

Assessment of curricular pedagogy has been centered on class, program, and/or department outcomes. However, university funds allotted for guest speakers are likely to encourage or even to require the presentation to address a gamut of students from various majors. So how does one assess the impact of guest speakers on the students attending? One thought to consider for assessment of campus-wide co-curricular activities would be to link the presentation to a general institution-wide mission, goal, or value. For example, the University of Central Missouri (UCM) has adopted a platform (approved by the Board of Governors) that describes what students will experience through their time at Central. The platform includes: Engaged Learning, Future-Focused Academics, Culture of Service, and Worldly Perspective. By linking the assessment of the presentation to one or more of these central goals of the university it allows for what we intuitively know is a good educational experience to be given a context for assessment.

The next two sections of this paper describe the Hibakusha residency at UCM and the implementation of an applied learning project in a graduate research methods course. The two university goals of engaged learning and worldly perspective served as the context for assessing the presentation. The ultimate goal was to ascertain:

- RQ1: What impact, if any, did the Hibakusha residency have on students' knowledge of nuclear weapons and their impact on humans?
- RQ2: Were attitudes about the use of nuclear weapons influenced by the presentations?
- RQ3: Did the students exhibit behaviors of engaging with the presentation?

Research questions 1 and 2 related to assessing if students who saw the guest speakers increased their worldly perspective. Research question 3 related to assessing if students who saw the guest speakers showed an engagement with the experience. Asking these three research questions applies the concept of assessing campus-wide co-curricular experiences using university goals.

HIBAKUSHA RESIDENCY

The Hibakusha group included three atomic bomb survivors, the interpreters, a WFC office manager, and an American volunteer who had been working at WFC for a year and a half. The survivors included: Kono-san and her daughter Noboko as her interpreter, Kasaoka-san and her niece Sachiko as her interpreter, and Emiko-san and her good friend Michako as interpreter. The Hibakusha were varied in their level

of experience presenting their stories. One had told her story hundreds of times and considered herself an anti-nuclear weapons activist. The other two had less experience telling their story, but like so many Hibakusha, felt a responsibility to tell their story for their family and friends who died as the result of the bombing. These two Hibakusha did not consider themselves activists, but felt it was important to share their story so there might never be another nuclear weapon used again.

During their time on campus, they presented their experience to 26 classes, three dormitory settings, a large lecture hall on campus, and the Truman Presidential Library in Independence, Missouri. In total, they shared their story with over 1,600 students and community members. They also attended campus-wide events such as a peace paper crane origami paper folding session, lunches with students in the campus cafeterias, and a viewing of *White Light, Black Rain* (a documentary about the atomic bombings of Hiroshima and Nagasaki).

The classes visited were from a variety of disciplines including Anthropology, Art, Communication, Education, English, History, Music, Nutrition, Political Science, Social Work, and Theatre. The presentations were approximately 20 minutes long and included PowerPoint slides with maps, photos of the devastation, family photos, and artwork.

The presentations had been practiced and although the speakers/interpreters were clearly not professionals, they were so “real” and so “honest” that the vast majority of the audience members were literally captivated by the presentation. The presentations were primarily personal narratives of their experiences and at the end of the presentation, they each ended with, “I tell my story in hopes that there will be *No More Hiroshimas*.” After the presentation ended there was a Question and Answer session (time permitting). However, only a few questions were typically asked, instead, most of the students in class tended to line up to thank the Hibakusha for coming and shook their hand or gave them a hug. The reactions were heartening—such positive reactions, not just one time, but in class after class.

The large campus and community presentation brought approximately 600 people to listen to their stories and the Hibakusha received a line of people to meet them that took at least an hour to go through after the presentation. They were interviewed by local and campus news outlets and even made the front page of the local newspaper.

Finally, in association with the residency, one of the campus Art Galleries had a show that ran from September 23–October 15 and included Kono-san’s watercolor prints telling the story of her experience; several prints from Jane Smith Bernhardt, an American artist and pacifist who painted portraits of many Hibakusha from Hiroshima; and a series of photos depicting the devastated cities of Hiroshima and Nagasaki and its inhabitants that were on loan from the Hiroshima

Peace Memorial Museum. The art gallery had over 1,500 visitors during the showing.

ASSESSING THE IMPACT OF THE HIBAKUSHA RESIDENCY ON THE CAMPUS COMMUNITY

This section will cover experiential learning assignment and experience of students in the Quantitative Research Methods course; and then present the specifics of the methodology used to assess the impact of the co-curricular Hibakusha Residency project.

QUANTITATIVE RESEARCH METHODS EXPERIENTIAL LEARNING ASSIGNMENT

To measure the impact the Hibakusha presentations had on students and other members of the campus community, a survey was constructed by the students in Quantitative Research Methods. This course covers how to create, conduct, and analyze data from content analyses, surveys, and experiments. We also discuss how one can use survey data (in particular) as a method to assess a project; and the importance of assessment when using grant funds for projects. Finally, we discuss the role of research ethics and the Internal Review Board for Human Subjects at research institutions.

While the Hibakusha were on campus, I explained to the class the need for me to keep track of how many presentations were given and how many people saw each presentation to write a report at the end of the event for those who funded the residency. To this end, I had kept a record for each session by having audience members sign a sheet with their name and e-mail address. In addition, all of the students in the Quantitative Research Methods course had seen at least one of the Hibakusha presentations.

Approximately one week after the Hibakusha had completed their residency on campus, we began to cover the survey research methodology in the methods course. The course covered information regarding sampling, questionnaire construction, and data analysis. After covering this information, we applied the concepts of survey methodology to assess the impact of the Hibakusha residency on those who had been at one (or more) of the Hibakusha events. We first created an online questionnaire, which included items measuring demographics, attitudes, and behaviors.

Each of the students was assigned to create 3–4 demographic, attitude, and behavior items using categorical or interval measurements. As a class, we discussed each of the students’ items and which items were most appropriate. In addition, we discussed the importance of keeping the questionnaire to approximately 5–7 minutes (so participants

would actually complete it). The items were entered on our University online survey website (which does not limit the number of items or participants and downloads into an Excel file easily opened by the SPSS statistical software package we use in class to analyze data).

Each of the students was then required to complete the online survey. While completing the survey, they were asked to time how long it took to complete, identify any grammatical/ spelling errors, and identify any unclear wording of the questionnaire directions or items. We found the questionnaire took about 4-6 minutes and edited the questionnaire for grammar and clarity.

The next step was to determine the procedure for contacting the participants. Together, the class drafted an e-mail requesting participation in the survey following up on the Hibakusha residency. In addition, we also drafted a follow-up e-mail to be sent out one week after the initial contact to increase our response rate. We had 530 unique e-mail addresses and decided to send an e-mail invitation to all of the e-mails we had based on the sample size that we had using the guidelines found in our textbook (Frey, Botan, & Kreps, 2000).

Over the next two weeks, all of the data were collected and entered into the SPSS statistical software package. Each of the graduate students was required to analyze the data and create an Executive Summary (ES) appropriate to give to those who funded the project. Finally, each student presented their ES to the class. We discussed the similarities and differences between each of the Executive Summaries and the students saw the art involved in data analysis and presentation. They saw how different pieces of data analysis were used to support similar and different arguments relating to the impact of the program. The students discussed how helpful this assignment was to aid in learning how to create, administer, and analyze a survey.

METHODOLOGY

To answer the RQs, an online questionnaire was developed and conducted to gather quantitative and qualitative data. A description of the survey method follows.

PARTICIPANTS

A total of 530 unique e-mail addresses were collected from the various campus presentations. A total of 117 surveys were completed for a response rate of 22%. Keyton (2006) suggests that response rates will vary depending on the type and scope, but most published research (in the behavioral sciences) ranges between a response rate of 40 and 80%. In addition, the University of Texas Instructional Assessment Resources office (2011) suggests that online surveys average a 30% re-

sponse rate. Although our response rate is a little lower than suggested, this rate was expected given the numbers of e-mails students receive on a daily basis and that data collection occurred during the last part of the semester, when students tend to be very busy. Although the online version of the questionnaire may have negatively affected the response rate, it was the most effective way to collect data from a logistical perspective. This was particularly true because we intentionally waited 2 to 3 weeks to measure the impact speakers on the students. We believed that including a time delay between hearing the guest speaker and completing the questionnaire would provide a stronger argument for the impact of the speaker to not only be immediate, but long lasting.

The demographic analysis of the participants illustrated that while females ($n = 97$, 83%) were vastly more likely to respond to the survey, the other demographics were consistent with general university population (UCM Fact Book, 2011). Race of participants consisted of: White ($n = 96$, 82.8%), Asian/Pacific Islander ($n = 7$; 6.0%), Black ($n = 4$; 3.4%), Latino/a ($n = 4$; 3.4%), and other ($n = 5$; 4.3%). Age of participants ranged from 18 to 61 with a mean of 25.46 years ($SD = 11.57$). Year in School included: first year ($n = 25$; 22.3%), sophomore ($n = 23$; 20.5%), junior ($n = 24$; 21.4%), senior ($n = 15$; 13.4%), graduate student ($n = 11$; 9.8%), and other ($n = 14$; 12.5%). Finally, Political Affiliation included: Democrat ($n = 32$; 28.3%), Republican ($n = 24$; 21.2%), independent ($n = 14$; 12.4%), none ($n = 38$; 33.6%), and other ($n = 5$; 4.4%). Overall, this set of data is most consistent in representing females of the campus community who saw a Hibakusha presentation.

MATERIALS

The questionnaire was online and included four sections with 48 items total. Section I included 12 demographic items with sex, age, race, year in college, political affiliation, national citizenship, area they currently live in (urban, suburban, rural), where they saw the presentation(s), number of speakers seen, why they came, if they had children, and if they had a close affiliation with a member of the military.

Section II had 15 items which assessed participant's perceptions of the presentation. The first 6 items used a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to measure the impact of the presenters, the technology employed, and the type of information conveyed in the presentation. The next two items measured the ease of understanding the interpreters (non-native English speakers) on a 6-point scale ranging from 1 (*very difficult*) to 6 (*very easy*) and the importance of the survivors telling their story in Japanese before it was interpreted on a 5-point scale (*very unimportant* = 1; *very*

important = 5). The next two items measured the importance of nuclear weapon disarmament to the participant before and after the presentation, and both were measured using a 5-point scale (*very unimportant* = 1; *very important* = 5). The next two items were related to knowledge: the first regarding the effects of a nuclear bombing (*no effect* = 1; *understanding increased greatly* = 4); the second regarding the impact of war on the civilian population (*hardly ever* = 1; *almost always* = 5). The final three items of Section II measured audience attitudes towards the use of nuclear weapons by the U.S. or other nations and employed a 7-point scale (*strongly disagree* = 1; *strongly agree* = 7).

Section III measured speaker credibility (adapted from McCroskey & Young, 1981) using a 9-item, 7-point, semantic differential scale with bipolar sets of adjectives (e.g., *honest/dishonest*; *expert/inexpert*; *poised/nervous*). The higher score represented the more positive characteristic.

Section IV included 12 items and measured perceptions and behaviors of the participants. The first four items used a 5-point scale (*strongly disagree* = 1; *strongly agree* = 5) to assess if seeing and hearing the stories in person had more of an impact than reading about it, hearing a professor lecture about it, watching a movie about it, or viewing an online version of the presentation. The next item asked participants about their time spent listening to the presentation and used a 5-point scale (*time wasted* = 1; *time very well spent* = 5). Two yes/no items asked if the participants would encourage the University administration to bring these speakers back to campus, and if other international speakers should be brought to the university to give presentations. The next four items related to behaviors of the participants. The first item asked if the participant had talked to anyone who had not seen the presentation about it using a yes/no measurement; a follow up item asked how many people they had spoken to. The next yes/no item asked if the participant had looked up any additional information after seeing the presentation. The final behavioral item asked if they had chosen to go to the campus Art Gallery where there was an exhibition of art relating to Hiroshima and Nagasaki. The last item on the questionnaire was an open-ended item asking participants to share any thoughts on the presentation they saw.

PROCEDURE

After the university human subjects committee approved the research proposal, the e-mails were collected from the audience members who chose to write their e-mail addresses on an attendance sheet at the presentation (the vast majority of the e-mail addresses were collected at the smaller presentation venues). During the last week of October 2010, all 530 e-mails collected were sent an invitation to

participate in the follow-up survey and given a URL link to click on, or cut and paste into a browser search bar, to start the questionnaire. One week later a follow up e-mail was sent as a reminder. The survey was closed for data collection at the end of the second week. The data were downloaded from the university survey website to SPSS and analyzed.

SURVEY RESULTS

Although the graduate students did conduct analyses, those reported here have been conducted by the author to insure the data were analyzed in the correct manner and interpreted from the perspective of the university goals of engaged education and worldly perspective.

The primary goal of the survey was to measure the impact of the residency on the campus community (primarily students) identifying a level of engagement and an understanding of other cultures and experiences. Therefore, this analysis will be organized into four areas: participants attitudes towards the presentation (relating to worldly perspective), their knowledge gained (engaged education), behaviors that were influenced by the presentation (engaged education), and the themes that arose from the open-ended item (engaged education/worldly perspective).

ATTITUDES TOWARDS THE PRESENTATION

The first area of analysis focused on the delivery of the presentations; and specifically if the fact that the Hibakusha were here in person telling their stories and using a visually strong PowerPoint to support

Table 1. Perception of Presentation Delivery and Content

	Mean	Standard Deviation
The following items enhanced the presentation:		
Personal stories of Hibakusha	4.83	.42
Stage presence of Hibakusha	4.64	.66
Facts/information about nuclear bombing/effects	4.50	.63
PowerPoint visuals	4.46	.64
Brief introduction before Hibakusha presentation	4.25	.85
Stage presence of Interpreters	4.14	.97

* Note. The items were on a 5-point Likert scale (5 = strongly agree; 1 = strongly disagree).

their presentation had an impact. Table 1 illustrates that the participants believed that all parts of the presentation enhanced the overall presentation. This was especially true for the personal stories and stage presence of the Hibakusha.

Similarly, the level of importance of having the survivors tell their story themselves and in person had the mean score of 4.24 and a $SD = .90$ (*very unimportant* = 1; *very important* = 5). Both of these analyses suggest the impact of having an actual nuclear bomb survivor here in person and telling their story in Japanese before it was interpreted. An appreciation or at least exposure to those from other cultures was therefore supported.

Another aspect measured was, "what were the audience's attitudes towards the use of nuclear weapons and did it change?" First, a dependent samples t -test, $t(110) = 8.80$, $p < .001$, was conducted on the mean scores (*very unimportant* = 1; *very important* = 5) of participant's attitude toward nuclear weapon disarmament before hearing the presentation ($M = 3.45$, $SD = .92$) and after hearing the presentation ($M = 4.18$, $SD = .96$). The analysis illustrated there was a statistically significant increase in the importance of nuclear weapon disarmament and that it increased from being a little more than neutral to important. A second analysis was conducted on items asking if the United States and other countries that have nuclear weapons should consider them as a military option. On a 7-point scale (*strongly disagree* = 1; *strongly agree* = 7) the results for the United States ($M = 2.47$, $SD = 1.67$), and other countries ($M = 2.10$, $SD = 1.45$) even considering the use of nuclear weapons was quite low, and reflected a disagreement more than a neutral answer.

The last set of analyses looked at if the participants thought that this was an appropriate program for the university and was it a good use of their personal time. When asked, "what are your feelings toward your personal time spent listening to the speeches?" ninety-two percent ($n = 109$) reported that it time very well/well spent. They were also asked, "Overall, how important was this experience for you?" and the mean score was 6.06 ($SD = 1.12$) on a 7-point scale (*very unimportant* = 1; *very important* = 7). These participants appear to have valued the Hibakusha presentations. More support for this assumption occurs in the next two items as well. When asked if the university should invite these speakers back in the future, 94.7% ($n = 108$) said "yes." And when asked if the university should invite other individuals with unique historical experiences to speak 98.3% said "yes." The evidence is very strong that these participants valued this presentation and even wanted more. Overall, there is strong support that the participants acknowledged they were witnessing an event that provided them with a broader perspective of the world.

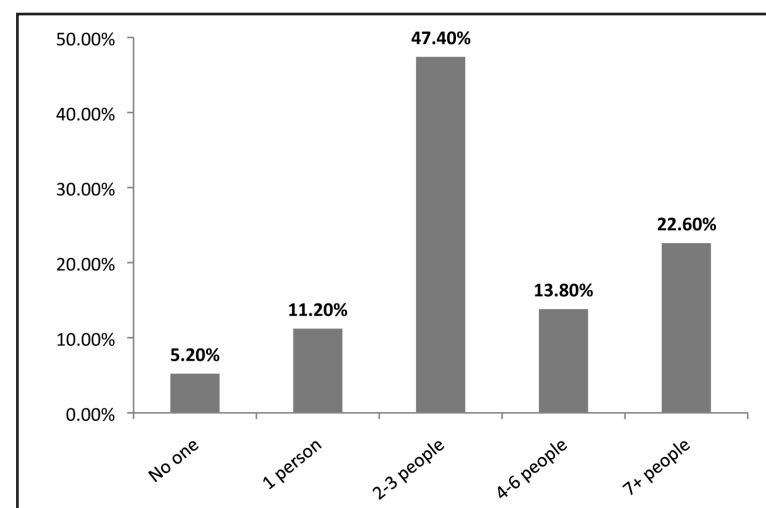
KNOWLEDGE GAINED BY THE PRESENTATION

Two items measured if the participants gained some general knowledge about the impact of nuclear weapons and the impact of war on a civilian population. One item asked participants to rate their understanding of a nuclear bombing after hearing the presentation (*no effect, understanding stayed the same* = 1; *understanding increased a great deal* = 4) and the results showed a high level of new knowledge attained ($n = 77$, 61.7% increased knowledge a great deal/a lot, versus only $n = 11$, 9.6% who stated the presentation had no effect). The other item asked, "how often civilians are impacted when in a war zone?" (*hardly ever* = 1; *almost always* = 5) and 96 participants (85.3%) responded "Almost always." Although there were only two items that asked knowledge-based questions, both responses strongly supported that the participants were cognitively engaged and remembered information, expanding their knowledge.

ENGAGED LEARNING BEHAVIORS INFLUENCED BY PRESENTATION

Two questions measured if there were any behavioral impacts on the participants after the presentations. Participants were asked if they had spoken to anyone who had not seen one of the presentations about what they had heard in the presentation. Figure 1 illustrates that the vast majority of participants (94.8%) shared their experience with others.

Figure 1. Number of people participants talked to about what they saw/heard in the presentation



The other item asked if the participants had looked up any additional information relating to the presentation. The results were 37.9% ($n = 44$) had taken the time to look up more information. Again, while there are only two behavioral measurement items, they appear to support what was found with the knowledge, that the presentation was spurring a continuation of the learning experience. The participants talked about the presentation and took it upon themselves to find out more information.

THEMES OF THE OPEN-ENDED ITEM

There was one open-ended item in the questionnaire that asked for any additional comments about the Hibakusha presentations. Several participants chose to answer this item, 31.6% ($n = 37$), and the responses ranged in length from a phrase to paragraphs. There were two major themes that arose from the responses (see Table 2). First, participants recognized that the Hibakusha presentation was a unique/

Table 2. Themes of the open-ended item

Theme 1: Recognition of this being a unique/special experience
In High School you learn about the atomic bomb and the consequences of the aftermath, but to physically be in the presence of a survivor and hear their story is life changing.
This was a truly once in a lifetime experience and it is difficult to put in words the spiritual and emotional affects (<i>sic</i>) hearing and talking with these women has had.
It was very interesting hearing a first-hand account of Hiroshima immediately after the bombings. It's one thing to read or watch something about it, it's another thing to hear from someone who was actually there.
I realize how lucky our class was to meet and hear about an actual historical event... It was unique experience to meet a survivor
It made me feel special that I got to hear first hand stories that many other people will never get to experience in their life.
Learned about an important part of history
Theme 2: Learning
They made what was formally (<i>sic</i>) just a statistic in my mind, a real issue and touching story.
It was powerful and they used images that will stick with me forever about the horror of war.
The experience was very worthwhile. I believe that all the people that went got a very unique and eye opening experience of the dangers of nuclear weapons.
The presentation was very informative beyond a need to know basis. It was personal and gave depth and meaning to the atomic bomb event that we've heard about throughout our education.

special experience, and second, they learned about an area they had little knowledge of previously. Both of these themes mirror the results found in the other analyses in terms of students being cognitively engaged in learning and recognition that this experience was unique and expanded their perspectives.

DISCUSSION

The goal of this study was to assess the impact of a university-wide guest speaker residency of atomic bomb survivors. Impact was assessed through the context of two institutional goals set for students, to experience an engaged education and gain a worldly perspective. In addition, three research questions were used to represent level of engagement, and expansion of worldly perspective, and to guide the data analysis.

An engaged education can be defined in multiple ways. Engagement is often viewed from the perspective of doing an action, hands-on practice or real-world experience. But engagement can be at a cognitive level as well. An engaged student does not only *do*; an engaged student also *thinks*. Of course these concepts of student engagement are not mutually exclusive and they complement each other well. In the case of this event, these participants were cognitively engaged and illustrated this through reporting a change in attitudes and engaging in behaviors related to gathering or sharing more information.

The goal of students gaining a worldly (or global) perspective can also be defined broadly. With the Hibakusha event, the data certainly suggest students were acutely aware that they were experiencing another culture and different side of a historical event.

However, the results of this study are not only important for what was found in this particular case. Guest speakers with unique and diverse ideas and experiences are a tradition at institutions of higher learning. There seems to be an intuitive knowledge that such presentations are a good experience for students and the campus community as a whole. Institutions of higher education may spend thousands of dollars over a given academic year. Yet the assessment is often limited to headcount.

This study can be used as a starting point in thinking about assessment of co-curricular education such as guest speakers and or other campus-wide initiatives. It is important to begin the conversation on the importance of more substantive assessment strategies of these truly unique opportunities.

First, by framing the assessment using an overarching institutional goal, mission, or value, it supports the importance of such events and helps to secure a place in ever-shrinking budgets. Second, because the

institution-wide goals, missions, values are written to be abstract and inclusive, there are many ways to meet or reach those goals, missions, and values. Therefore, any discipline can propose an institution-wide event, keeping the flexibility of those goals in mind when assessing the project.

CONCLUSIONS

As with any research there will be limitations. There were two primary limitations in this project. First, the sampling frame was limited by not having the e-mail addresses from individuals who saw the large lecture presentation. This could have potentially doubled the number of e-mail addresses in the sampling frame. The second limitation was the response rate of 22%. The sample primarily represents female university students rather than male and female. This should be taken into consideration when considering the results of the study.

More research assessing campus-wide initiatives is needed. As most faculty members are housed within a department, the research in applied learning will likely tend to focus on assessing individual classes and programs using course and program outcomes as the comparison. However, university-wide programs are often more costly and highly supported at the same time, creating a scenario where many students participate. The problem may lie within who is responsible for the assessment. The university office sponsoring? The faculty member who was given funding? In either case, the assessment of the program may be best served when placed within the context of institution-wide aspirations, value, and goals.

For me personally, I consider coordinating this event a highlight of my career as an educator. These women who survived a nuclear blast and its after effects shared their personal stories in such an honest and genuine manner that they could not help but have an impact on those who witnessed their narratives. Their willingness to share and ask that this never happen again to anyone was a compelling act of humanitarian diplomacy. Although it was a small part of the experiences students will have in their time here at the university, I feel confident that it added to their growth as students intellectually and as members of the human race.

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Voices in the Hall: Alumni Perspectives on the Value of Networking

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Internships build lasting opportunities for students and provide necessary partnerships between higher education and employers. This study utilizes qualitative data extracted from a survey of alumni from one Midwestern university to examine student employment and educational satisfaction. Phone and internet interviews were conducted to ascertain alumni views on: Employment, Continuing Education, Applied Learning, and Advisement (n = 125). Alumni advice clearly expressed to current students and faculty members the necessity of “networking” with those in the field prior to students completing the degree. Linking current students to those in the field, primarily through internships, was viewed by alumni as essential to developing opportunities for students to network and gain access to a challenging job market.

If given the opportunity, what advice would you give students currently in college to help them succeed? This is a question that was asked of alumni in order to examine the outcomes of their educational experience. One alumnus communicates this piece of advice to students:

I worked as a waitress throughout my four year degree. When I graduated I started going on interviews and they wanted someone who had some experience. I thought just having my degree would be OK (Alumni Interview, #25).

It is interesting that her “data” is a sample group of one—absent of national trend data, educational support or correlation coefficients—but the advice carries weight and meaning to students, instructors and curriculum designers. It provides a clear roadmap to these parties if successful completion of a degree is to transpire into entry-level field work.

It is somewhat confounding disciplines that so often make use of “research methods” as a typical core class (Southerland, 2002) fail to provide insight on the implications and consequences of growing classrooms (Carlan, 2007; Castellano & Schafer, 2005; Lytle & Travis, 2008; Sundt, 2010). For example, the Integrated Postsecondary Education Data System (IPEDS) identifies over 38,000 Bachelor degrees from over 900 institutions that were awarded in 2009 alone in Criminal Justice. Add an additional 5,000 students earning a degree in Criminology and the popularity of this one educational program becomes clear. These growing numbers are supported by higher education administrators, but alumni report the competition for jobs in the field is becoming an increasingly difficult roadblock to maneuver to reach the successful outcome of employment after earning a degree. Of the 125 recent (within 5 years) alumni interviewed in this study, only about half (62 of 125) reported current employment in the field of criminal justice (not unlike Carlan’s (1999) findings). Specifically the phrases “current job market,” “job availability” and “the economy” were reported to interviewers by over 20% of alumni surveyed as key roadblocks for employment in the field. It is becoming increasingly evident that building the best foundation for student success in their chosen field cannot happen solely in the traditional classroom.

This phenomenon is not confined to what are typically considered the vocational academic programs (nursing, education, criminal justice). Liberal arts majors remain hampered by the inability to provide potential employers evidence of their ability to transfer and test their knowledge to what is needed on the jobsite (Brooks, 2009; Carlin, 2002; O’Neill, 2010). Simply relying on the employers consenting to the exchange rate of an “A” in a required major’s class will indicate the desired skills sought in the private sector is too risky for academic programs to assume. Providing opportunities to network and demonstrate

the value of an academic program to the public sector will accumulate into the capital necessary for alumni success (Brooks, 2009; Mora, Garcia-Aracil, & Vila, 2007).

All in all, we do not seem to know that much about the results of student learning in the myriad of programs that are provided in higher education (Moriarty, 2006). In sum, the classrooms may be full, but what is missing is educational impact in areas of opportunity and entrance into a chosen field. The sense of ease felt when believing an educator’s responsibility to the student ends at graduation promotes a lack of concern regarding outcome measures. Unfortunately, little research has been conducted focusing on graduates from the United States institutions of higher education. Job satisfaction has simply been used as a proxy for educational satisfaction in those fields that require specific educational degrees. The examination of the literature did not uncover any comprehensive efforts in the United States to examine alumni opinions of their educational experiences. The European University System, on the other hand, has attempted at least one such comprehensive study of recent graduates to address issues related to specific discipline, university and program educational satisfaction. The *Careers after Higher Education: A European Research Survey* (CHEERS) surveyed alumni in nine different countries four years after graduation (<http://www.uni-kassel.de/incher/cheers/index.ghk>; Mora, Vila, & Garcia-Aracil, 2005). These alumni were asked their perspectives on a wide range of issues, including the value and satisfaction with their degree program. The individual’s expectation in relation to the necessary education their specific field requires has consistently been found to predict satisfaction with the selected educational program (Garcia-Aracil, 2009; Mora, et al., 2005). Furthermore, graduates who held a degree in their respective field identified a 17% higher satisfaction with their degree program than those alumni who were not employed in a field relative to their program of study (Mora et al., 2005).

Similar attempts to orchestrate a comprehensive assessment of graduates, such as those by *U.S. News and World Report*, have failed to reach the literature of academia (U.S. News and World Report, 2011). The failure to uncover a comprehensive assessment of U.S. colleges and university graduates is not at all surprising. First, U.S. colleges and universities have prided themselves on where they *best fit* in the arena of higher education. This compartmentalization of private and public, liberal arts and professional, or research and philosophy provides a built in appeal process to any examination of their value. Alumni reviews, if conducted, have been based in a single individual program, resulting in a failure to address the current principles for standardized quantitative review. Next, if alumni surveys are distributed they are usually done so in a passive manner; such as in the form of a mass mailing, or left on a campus website for browsers to find. These surveys are more often than not closed Likert-style questions and provide little more than broad summaries of educational and vocational difficulties in a chosen field (Zydzianaite, 2007). Finally, alumni are a very transient group. This is usually due to the pursuit of new opportunities, making them simply difficult to track and find.

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Assessment in U.S. colleges and universities has made use of what is convenient—meaning the current student body. The *National Survey of Student Engagement* (NSSE) addresses current student opinions regarding their experiences in higher education and their perceived needs. These surveys currently occur at over 750 universities every two years and involve over 400,000 student and faculty. Relative to this study, the 2007 NSSE examined specifically student opinions of *Experiential Learning Experiences* and *High Impact Models of Learning*.

Certainly national surveys, such as the NSSE, are useful for obtaining a grasp of classroom demographics, students' wants and desires—but in general these students offer a limited, single-direction overview of the program and can only guess at the predicted usefulness of their present course of action. The reliance on those guiding them (academic advisor, department curriculum chair, or instructor) remains a leap of faith—due to a relatively small percent of students at this point having field experience in their selected educational field.

...work with your instructors, get experience, anything to get more knowledge and be able to communicate that information... (Alumni Interview, #165).

This level of faith should encourage educators to develop the best possible resources necessary to build success for students in their area of interest. As Birzer and Palmiotto (2002) identify, an educator's role is not to simply fill the jobs, but create a student who has the ability to converse in the discussion unique to a discipline. This ability to enter one's field of choice with adequate skills has been identified in European graduate studies as a prime indicator of educational satisfaction (Garcia-Aracil, 2009).

METHODOLOGY DESCRIPTION

Making use of qualitative analysis is not easy, and when conclusions are drawn they are susceptible to claims of bias in the interpretation (Fink, 2000). However, by considering potential benefits of implementing an assessment with an interview serving as the foundation, it could make the roadblocks seem slightly less risky. True, this is a very intrusive method, but interviews fit exceptionally well in many fields and it is somewhat surprising interviews are not supported more passionately in the literature. Essentially, we communicate reasons and experiences to help make sense of them (Shank, 2002). By effectively utilizing exchanges with alumni (participants) additional field-tested insights can be actively brought forward from individual responses.

For example, balancing what is learned conceptually regarding a vague phenomenon such as "networking" can build understanding of the input and timing necessary to achieve a student's goals. Alumni can share presorted understanding of their experience and provide the means to an end in context for students and educators. These narratives are built in the present but are formulated and sorted based on the ap-

plication of experience (Jacobs, Leach, & Spencer, 2010). Sometimes, as Volkwein (2010) discusses, it takes time for the alumni to put their education and career in perspective. Alumni offer this unique perspective on curriculum in the current field that simply cannot be gleaned by faculty or student (Terkla & Armstrong, 1999).

SURVEY DISTRIBUTION

The survey interview was administered to recent alumni of one Criminal Justice Department. The purpose of this study was two-fold: to develop contact with local alumni and to capture information on the impact of recent curriculum changes. The alumni group assessed was limited to those graduating with a four-year Bachelor of Science degree from the Criminal Justice Department between the years of 2005-2010. Phone interviews ($n = 89$) typically lasted about 20 minutes, but ranged from 10 minutes to over an hour. In the interviewer's opening statement, three items were clarified: (a) there would be no request made for donations or solicitation of funds; (b) the voluntary nature and the purpose of the study; and (c) an offer of remuneration (shirt with department's alumni logo).

The process of the interview determined three attempts to reach the alumni would be made by interviewers. Despite this group of alumni being considered more recent, as expected, contacting these alumni was a difficult task. University, department, and public listings of contact information were utilized, but also investigative techniques using social network sites such as Facebook, LinkedIn, as well as electronic search engines were utilized.

Table 1 provides a summary of the demographic and institutional information for those alumni surveyed. Overall, there were 274 graduates eligible for this study. Of these graduates 152 (55.5% find rate) were contacted directly and 125 (45.6%/82.2%) of those agreed to participate and provided usable data. The survey was developed by department faculty as a part of the Criminal Justice Department review. The survey consisted of both closed (Likert-type) and open response interview questions. Institutional data was utilized to examine the sample surveyed compared to the population of graduates from this department. The sample of those alumni participating compared to those not participating in the survey showed no significant difference on the demographic and institutional variables: gender, race, GPA, and ACT entrance scores. There was a significant difference found between the two groups in age ($t(271) = 2.21, p = .028$), with those interviewed found to be slightly younger. Based on these analyses, we determined the two groups did not differ significantly and generalizations could be made to the full group of alumni from this particular department.

Table 2 provides a summary of employment and participation in higher education (secondary) for interviewed alumni. Interestingly, just below half of all interviewed stated they were currently employed in the Criminal Justice or Legal field (49.6%); with 79.0% of these employed in the particular emphasis of their major. A total of 22.4% were

Table 1. Sample Characteristics of Those Interviewed

Variable	respondents (%)	non-respondents (%)
Gender		
Female	70 (56%)	97 (65.1%)
Male	55 (44%)	52 (34.9%)
Race		
White	101 (82.1%)	126 (84.6%)
Not White	22 (17.9%)	23 (15.4%)

Variable	Mean	Standard Deviation	Range
Age at Graduation:			
Respondents	25.30	6.56	21-69 (48 years)
Non-respondents	27.17	7.28	21-61 (40 years)
GPA (2.0 required on 4.0 scale)			
Respondents	3.02	.42	2.03-3.95 (1.92)
Non-Respondents	2.97	.46	2.13-4.0 (1.87)
ACT			
Respondents (<i>n</i> = 103)	18.93	3.56	9-27 (18)
Non-Respondents (<i>n</i> = 121)	18.98	3.76	5-28 (23)

Note: *n* = 125. The variable representing 'race' was transformed to a dichotomous measure due to the high percentage of those alumni who were Caucasian. ACT testing is not required for students at this particular university.

currently or had participated in an educational program higher than a Bachelor of Science.

The interview was built specifically into the survey instrument as the method of delivery to alumni to encourage interaction between interviewer (student researcher) and interviewee (alumni). Questions were prefaced with "do you have advice to current students in the department" on topics such as employment, continuing higher education, and general advice on what to be doing while going to school to increase their opportunities after earning their degree? The primary method for delivery of this instrument was via telephone, to better allow interviewers the opportunity to probe, branch and build personal rapport with the alumni. In addition, electronic survey software (Remark Web Survey 4) that allows branching based on the subjects' response and personal interviews was utilized.

Table 2. Employment and Educational Characteristics of Those Interviewed

Variable	respondents (%)
Employment	
Employed	107 (85.6%)
Not employed	18 (14.4%)
Employment Vocation (<i>n</i> = 107 employed)	
Employed in CJ or LS	62 (49.6%)
Employed not in CJ or LS	45 (36.0%)
Employment (<i>n</i> = 62 employed in CJ or LS)	
Employed in CJ or LS Emphasis	49 (79.0%)
Secondary Higher Education	
Participated(ing)	28 (22.4%)
Have plans to participate in higher education (<i>n</i> = 103)*	
Yes	40 (38.9%)
No	28 (27.2%)
Uncertain at this time	31 (30.1%)
Missing or in a program	4 (03.9%)

*Note: Six alumni reported beginning a secondary level of higher education program, but not completing. Of these, five alumni identified they did not plan to return (No) and one identified they did plan to return (Yes).

RESULTS

Discussions with these graduates were directed to identify and feed information to students and faculty on how best to navigate the four-year degree as a method of building a career. The study found that whether or not the alumni was employed in the criminal justice or legal fields or not, a consistent and unified voice expressed to interviewers that the value of higher education should not be overrated when seeking employment.

To compete you have to get the experience somewhere (Alumni Interview, #119).

Get involved in any and all programs associated with the field of interest. This would help to show the nature of work and details with the career...start researching for jobs to get an idea of requirements (Alumni Interview, #36).

The literature paints a similar picture of what it is employers in the field of criminal justice seek. Creton and Clements (2010) address tension that is “clearly evident” (p. 72) between academia and the criminal justice field. They view the policing literature as particularly hostile with an air of obvious mistrust. But the bias flows both ways, as Heslop (2010) found the complete dismissal of the value of practical experience in some academic programs (Castellano & Schafer, 2005; Jacobs et al., 2010).

Likely most practitioners and academics fall somewhere between, but walking the line of becoming the professional from inside the classroom is indeed a trying experience for those without contacts. The advice provided by alumni indicated an overwhelming pull towards the importance of networking as a major contributor to future successes. One alumnus stated:

Getting a job is all about networking and selling yourself. People that actively seek employment will always be able to find it; however, people that passively seek employment will always struggle to find work. For example, I got a job being a law clerk with my firm by taking a day off of school knocking on doors and telling any firm that would listen that I needed a job and that I would be a good fit for their firm. This worked and now I work as an attorney at the same firm about two and a half years later (Alumni Interview, #26).

It is this important emphasis alumni themselves have placed on networking, which should be assessed by academic programs. Findings from NSSE (2007) concur, identifying how active students correlate field activities with educational success before they graduate. The fact of increasing financial demands on universities and the competitiveness in higher education markets make unemployment rates of graduates one of the biggest measurable performance indicators of institutional quality. Job-seekers not only report that they initially heard about their present jobs through informal ties, but also that social contacts actively influenced the hiring process (Esperanca, Jaume, Enric, & Dolors, 2000; Higdon, 2004). Difficulties in attaining and maintaining employment cause alumni to rethink the true value of their educational experience and foster dissatisfaction with both university and their education. This may have a cumulative impact if the graduate views they were over- or under-prepared for their career choice (Garcia-Aracil, 2009).

NETWORKING

So this begs the question, what does the term “networking” actually mean to alumni?

I think that it is most important to have the experience, as well as to complete the degree. There are opportunities out there for employment if one does not obtain a four-year degree. However,

the opportunity for advancement in these fields may lack. In the criminal justice field there, in my opinion, will always be some form of employment, but experience is key. For example, in my search for employment, many occupations required me to have many years of experience. Thankfully, I did participate in the internship/practicum opportunities (Alumni Interview, #74).

This individual indicated a general dictionary definition applied to this aspect of networking, but also viewed a pattern based in the process of networking for jobs in this particular field; more specifically, the idea of internships as a key networking opportunity for those needing access to the field. *Not having job experience* (Alumni Interview, #289), *Needing to find a way to get your foot in the door* (Alumni Interview, #104) and *Need experience in a related field* (Alumni Interview, #65) were among the comments that identified the difficulties for students entering the field. Key to this input was the fact that experience was identified by so many graduates as a primary desire of employers.

Get yourself out there in the community. Use your internship for building relationships with possible employers (Alumni Interview, #4).

Learn all you can now—my internship turned into a job for me (Alumni Interview, #9).

When examining current job markets we find graduates are not simply competing against other graduates for entry-level work, but also against those with years of experiences due to downsizing and layoffs (Higdon, 2004). Building in opportunities for students to have work-place experience, coupled with an education, allows students to compete in even low employment market periods (Mora et al., 2005).

BUILDING CAREER SATISFACTION

Career satisfaction is indeed a tricky endeavor to measure. For educational programs, this can be misinterpreted as dissatisfaction with a degree that resulted in the alumni's current position. Evidence exists that demonstrates degree satisfaction will trend downward with longer career experience (O'Neill, 2010). Graduates surveyed in this particular study discussed the “*poor salary*” “*difficult hours*” and “*paperwork*” that made their work difficult. When accompanied with the “*high stress*” involved in the criminal justice and legal fields, it was evident they were providing a warning to interviewers and students that the criminal justice field should not be entered without study and forethought. Providing resources to students to be better prepared for the challenges they will face may prevent these unhappy alumni from voicing their concerns to educational program administrators or potential students and allow them to make positive recommendations to the department. In fact, many of alumni advised students to participate

in more than one internship experience and to seek out opportunities to build up their resume as well as to network while still in school.

I would tell them to make contacts with several agencies during the career fairs that are held at... for possible practicums and internships. I would also tell them to do their practicum in one field in criminal justice and their internship in another field in criminal justice. I think it's a great idea to open themselves up to just more than career in the criminal justice field and realize the possibilities out there. (Alumni Interview, #39).

The NSSE (2007) findings would agree that more experiential learning materials spread throughout the student's career will enhance student well-being and perceptions of educational value, even prior to graduation.

Career satisfaction comes not only from workplace experience, whether it be prior work experience or an internship experience, but also from feeling confident in the tasks at hand based on having experience in that particular field. In the review of CHEERS data, Garcia-Aracil (2009) noted a well-organized program of higher education developed stronger professional competencies. As this alumnus reflects:

Also, really understand all that you are learning now, language, terms and processes....because you do have to know them and sometimes you look silly when you don't know something that your employer expects (Alumni Interview, #70).

Along with the ability to communicate in person, alumni specifically advised the necessity of being able to communicate well in writing to stand out in the field: *Learn to become a better writer* (Alumni Interview, #69), *practice your writing skills and write lots of papers* (Alumni Interview, #73) and *work on written skills—they are important* (Alumni Interview, #114). Confidence in their ability to work within the field provides enhanced opportunities for advancement earlier in the professional's career. Satisfied alumni should be serving as advocates for the programs that provided this head start, not lamenting on the cost of a higher education that failed to supply them with the tools to succeed (O'Neill, 2010).

NETWORKING OPPORTUNITIES

Internships were only one way alumni defined *networking* opportunities. Becoming involved in student organizations and community service (volunteer) opportunities were also supported in discussions. One alumnus stated:

Encourage undergraduates to get involved in community service... even if you don't plan to stay in your current location, use it as a stepping stone. Be involved... (Alumni Interview, #79).

Several of the alumni supported this in theory, but when asked if they actually did this the majority said they "were not able to but wish they could have." The reasons varied but were very descriptive of the current student body—which includes a fairly large percentage of non-traditional students (25%). Alumni did not simply report they refused to participate; they reported reasons such as the number of children they had at home or the financial responsibilities they shared which prevented participation. Graduates desired to have more "collaboration with teachers, besides in class," "attend conferences," or to participate in university sponsored "study abroad."

Get involved in organizations and volunteer to broaden outlook on what it is you want to do with your career and it teaches you how to be a leader and how to react to change. (Alumni Interview, #15).

Any professional or academic conference would be beneficial for a well-rounded resume (Alumni Interview, #95).

Reality forces the admission that programs cannot be all inclusive of individual needs—but this expressed alumni regret should not be forgotten by those designing these programs. Nearly 37% of alumni identified they lacked time to participate in these types of activities due to work or family commitments. Only 5% identified they were unaware of such activities—while the remainder were content with their decisions—whether they participated or not.

EDUCATORS AND INSTITUTIONS

If the faculty would be more involved in either providing guidance or providing opportunities for students to gain insight into the field, it would greatly improve the percentage of graduates earning positions in the field directly out of school (Alumni Interview, #76).

This particular alumnus provided a summary of the expectations of faculty involved in building the bridges between the field and education. Educators are to actively pursue and develop methods and curriculum that assist in setting success post-graduation concurrently with the student earning their degree. The importance placed on this advice should be high; these alumni provide a clear direction for curriculum designers, practitioners and the student by discussing there is more to a student's education and experience than simply a classroom and one applied learning experience. Providing more avenues of applied learning for students is clearly desired to give students the most experience before entering the field or pursuing graduate school. These types of collaborative efforts can be viewed clearly in hindsight by the alumni—and they were indeed passionate regarding the impact of these efforts. Alumni report the necessity for faculty to be more actively involved in

the students' education, making themselves more available for students to meet with, and to help provide them with opportunities to develop their resume and be prepared for the field.

Stichman and Farkas (2005) identify the necessity of field placements for future professionals, but also the necessity of preparation for students. Buerger (2004) also cites the importance of utilizing collaborations with professionals in the field to teach some of the thornier sides of social justice. Maintaining links with the community practitioners will result in increased access to desired professions and professionals for students. This may be the biggest challenge for educators: to stay up to date with the changing policies and procedures in the vocational field while providing a strong curriculum. To prepare students to interact properly in the field, faculty must be aware of the details of the environment where the student will be placed. We often view this a responsibility of the student or "they will learn it for themselves" when they get out there (Stichman & Farkas, 2005, p. 148; Bailey, Hughes, & Moore, 2004; Hughes, Moore, & Bailey, 1999). In essence, alumni recommend faculty to take a more aggressive role in setting students up for success, assisting in accomplishing their post-graduation goals.

Another way for faculty to take a more involved approach would be to better relate the applied learning experience back into the classroom. The experience alone is effective, but a well-organized educational experience, coupled with field work in one's chosen vocation combine to make a satisfied graduate (Garcia-Aracil, 2009; Mora et al., 2007). These two aspects of teaching and learning are not opposing, but directly related to one another. Learning skills to be applied in the field will indeed make a more *efficient worker*; but someone who can take the applied learning experience and relate it back to what they learned in the classroom makes a stronger, well-rounded candidate for agencies.

Start researching what agencies are looking for before you graduate and apply. The main problem I ran into was not knowing what the agencies were looking for specifically (Alumni Interview, #25).

Lindsteadt and Williams-Decker (2009) identified, "Helping students process and develop as they experience their chosen field should be the essence of a true applied learning experience, as well as a lecture hall" (p.76). Based on these data, alumni are identifying how essential it is educators serve as the student link to more applied learning experiences in their classroom. Internships are a part of applied learning that allows the student to apply classroom knowledge with hands-on experience, as well as bring the work experience back to the classroom and connect it to what is being learned (Hirschinger-Blank & Markowitz, 2006).

Be sure to gain work experience as soon as possible and start internships in the beginning stages of your college career (Alumni Interview, #78).

Use faculty for ideas of where to intern and how to get the most of your experience in the field to make sure of the area you want to go into (Alumni Interview, #22)

Although internships are supposed to apply classroom knowledge into work experience, they typically do not involve professor-student contact. This limits the application of academics to experience; however, these internships occur primarily during a student's last year in school, enabling them to focus more so on obtaining a job after graduation, rather than applying the experience to academics (NSEE, 2007; Penn, 2003). Early introduction to internship opportunities was suggested by several alumni to assist in juxtaposing classroom and field experience. Utilizing internships as a networking opportunity for students gives them the time and place to ask questions, show agencies their work ethic and to build up a repertoire of contacts for when they graduate and begin looking for a job in the field. This is also a way for students to build their resume to show they have some experience in the field when they apply.

FINAL DISCUSSION

Students, faculty, and professionals all have a stake in building networking opportunities between higher education and the professional field. As identified by those who have field-tested the degree experience by transitioning into the job market, networking was viewed as a base ingredient to this final product. Alumni could identify with the current job market which the undergraduate student was soon to face and believed that a degree would not stand alone, or would be simply insufficient for a successful transition into the field. This advice was not theoretical; it was forged on the anvils of their recent experience. Networking is the key to building these opportunities for students, but well-planned curriculum is necessary to accomplish this endeavor.

Although rather limited, available alumni surveys from European educational programs reiterate the theme of experiential or applied learning found in many universities (Garcia-Aracil, 2009; Mora et al., 2005). These graduates contribute an experienced perspective on both their education and entrance into their career. Providing work placements and well organized programs of higher education geared to their chosen field produced a satisfied educational consumer. A well designed program is quick to understand successful networking is not a one-sided agenda. According to the graduates surveyed, it involves a three-prong commitment to the goal of producing future professionals. Students should not be confused as to the effort, responsibility, and pay-off internships entail and should understand their responsibility not to take internships for granted (e.g., *you need to take it seriously*, Alumni Interview, #13; Higdon, 2004). Faculty should bridge the gap between students and professionals, building relationships with organizations and preparing students to learn the discourse and expecta-

tions of the field. Providing early access to students for faculty-student collaborations or field placements enhances the student's experience, impacting both satisfaction levels of the student and retention (NSSE, 2007). Both NSSE (2007) and CHEERS (Mora et al., 2005) results indicate directly to administrators that funding high impact learning opportunities such as study abroad, student-faculty research, service-learning, and field placement will reap dividends in building a satisfied student and graduate base.

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Journal of
Applied Learning
in Higher Education

- 3 **What's the DEAL?**
 Program Level Examination of Reflection Design
 MARY HALE TOLAR AND TRISHA GOTT
- 23 **Applied Learning at the Graduate Level:**
 Professional Science Master's Programs Lead the Way
 URSULA BECHERT AND BRIAN CRONK
- 35 **Sharing the World:**
 Using Study Abroad to Enhance
 an On-Campus Service-Learning Project
 CAITLYN DAVIS AND JULIE TIETZ
- 45 **No More Hiroshimas! Assessing Personal Narratives**
 of Survivors of Hiroshima on a Campus Community
 Using University-Wide Goals and an Applied Project
 in a Graduate Research Methods Course
 WENDY L. GEIGER
- 63 **Voices in the Hall:**
 Alumni Perspectives on the Value of Networking
 MELISSA TURNER AND GREGORY LINDSTEADT

Missouri Western State University

ISSN: 2150-8240 (print)
ISSN: 2150-8259 (online)