The Goldilocks Dilemma:
A Case Study toward a "Just Right" Model of Service-Learning

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Abstract: Scholars have long lamented the lack of conceptual clarity in the area of SERVICE-LEARNING. The pedagogical approaches of Sigmon (1994), Haynes (2016) and Eyler and Giles (1999) have been applied to create a balanced or "Goldilocks" model of SERVICE-LEARNING to courses in both Sociology and Political Science. Moreover, preliminary quantitative assessments have been integrated into the curriculum along with a component of a University wide accreditation plan now for the second five-year QEP (Quality Enhancement Plan). Presented are preliminary assessment results of a case study demonstrating positive relationships between SERVICE-LEARNING and skills identified as essential to critical thinking and real world problem solving. The cross-disciplinary application of community-based SERVICE-LEARNING projects in increasing critical thinking skills demonstrates a positive direction for future research.

Keywords: SERVICE-LEARNING; Quality Enhancement Plan; Critical Thinking Assessment

Introduction

Over twenty years ago, Sigmon (1994) famously lamented what is herein relabeled, after the famous fairy tale, the "Goldilocks Dilemma." (Cauley, 1981). In true Goldilocks fashion, according to Sigmon, academicians were practicing an unbalanced approach to SERVICE-LEARNING with either an inappropriate SERVICE-learning or service-LEARNING pedagogy (1994). Under a SERVICE-learning model, Sigmon suggested too much emphasis was placed in service to the detriment of learning, or in our Goldilocks analogy, the SERVICE focus was "too hard" and the classroom link "too soft" (Cauley 1981). In the service-LEARNING imbalance, clearly, the situation was reversed, whereby scholars were "too cool" in their service emphasis and "too hot" on the educational focus (Sigmon 1994). To rectify this problem, Sigmon proposed SERVICE–LEARNING

(the capitalization is the authors' own emphasis) programs in which both the service and learning "would be of equal weight and would enhance the other for all participants" (Sigmon, 1994). In this study, Sigmon's balanced approach, or "Goldilocks Model" has been incorporated into two groups of courses yielding positive results. Preliminary analysis was conducted utilizing both pre-test /post-test assessment of SERVICE-LEARNING pedagogical applications. The results indicate that a SERVICE-LEARNING based pedagogy in which both service and learning are given equal priority is "just right" for application in higher education.

Review of Related Literature

The last forty years have seen a wholesale revitalization of SERVICE-LEARNING in the college classroom. Service learning is a diverse, experience-based approach to education and learning that has a breadth of potential learning outcomes (Yorio and Ye, 2012). For the purposes of this case study, two areas of relevant literature have been examined. First, there are those that have emphasized the need for SERVICE-learning in which the primary focus is on service. Secondly, there are those which emphasize the learning component of service-LEARNING, seeking to answer the critical question asked by Eyler and Giles in their seminal text: *Where's the Learning in Service Learning (1999)?*

SERVICE-Learning

Imbued both with John F. Kennedy's Inaugural admonition to "Ask…what you can do for your country" and Reagan's reminiscence of Winthrop's "City on a Hill," colleges and universities in the 1970's and 1980's began a focus on what Campus Compact purposed, the education of "students for civil and social responsibility" (Campus Compact Vision and History, n.d.). Campus Compact is a coalition of over 1000 colleges and Universities throughout the United States with a focus on college-based civic engagement (Campus Compact Overview, n.d.). Most Americans now agree that "schools have a clear responsibility to link what children study in school to the skills they will need at work and in their communities" (National Service-learning Partnerships, 2002). SERVICE-learning projects provide this link between study and real-world application.

One of the main reasons educators require SERVICE-learning projects is because it has become a social norm. "An individual's inclination to give is reinforced by social norms in their community" (Piliavin & Libby 1985). Participation in SERVICE-learning projects allows students to contribute in a meaningful way to society (Jovanovic, DeGooyer & Reno, 2002, p 11). When students work together for a common good, they build a strong understanding of community and generate ideas for social change while also developing social bonds with one another (Jovanovic, DeGooyer & Reno, 2002).

Accordingly, SERVICE-learning has become a widely utilized pedagogical tool on college campuses across the United States. Furco (2002) defined service learning as "an integration of community service and academic

study; connecting classroom instruction with real life situations" (Furco, 2002, p.25).

> Service learning seeks to engage individuals in activities that combine both community service and academic learning. Because service-learning Programs are typically rooted in formal courses (core academic, elective, or vocational), the service activities are usually based on particular curricular concepts that are being taught (Furco, 2002, p.25).

SERVICE-learning not only involves a reflection component but also a triangular relationship between students, the institution and the community, in which all parties are benefited and address unmet community needs (Furco, 2002). The goal of Service-learning is for students to make contributions to the community while using the community site as an opportunity for learning. Consistently, the emphasis remains on linking the students' projects, instruction and/or community service with a broader awareness of citizenship and civic engagement (Furco, 2002). In addition, SERVICE-learning is a "method under which students learn and develop through thoughtfully organized service that is conducted in and meets the needs of a community and is coordinated with an institution of higher education, and with the community; helps foster civic responsibility; is integrated into and enhances the academic curriculum of the students enrolled; and includes structured time for students to reflect on the service experience." (Campus Compact National Center for Community Colleges, 2002). Importantly, Eyler and Giles (1999) found that the benefits of SERVICE-learning were not limited just to the college classroom and community. Their research demonstrated that those who contribute to society as college students would build social capital. They become more informed voters, better parents, and are more likely to volunteer as adults.

Returning to the introduction, Sigmon (1979) defined service learning as "reciprocal learning" and he later (1994) developed four typologies. The primary focus of much of the research in this area is on SERVICE-learning. This, according to Sigmon, is out of balance with a focus on the service but less emphasis on how it will be applied in the classroom. SERVICE-LEARNING, which we have repurposed our Goldilocks Model and in which both the service and learning goals are of equal value is what Sigmon advocates. In essence, equal value would be represented in courses where both service and learning are both emphasized through assignments, grades, student learning objectives and/or instructional time. However, Sigmon additionally urged caution regarding his first model of service-LEARNING as it emphasized learning to the detriment of service. Accordingly, a renewed methodological emphasis is on this first Sigmon model, as scholars have struggled with how to quantitatively assess service-LEARNING.

Service-LEARNING

The Campus Compact National Center for Community Colleges suggests a definition of service-LEARNING in which service itself should enhance the academic curriculum (Campus Compact National Center for Community Colleges, 2002). More significantly, this definition points to "thoughtfully-organized service" measured with quantitative data with the potential for an exciting increase in "critical thinking/ real world problem solving" skills (Campus Compact National Center for Community Colleges, 2002).

Service-LEARNING assessment measures are difficult to obtain. The use of this pedagogical approach is constantly evolving. In its nascent stages, institutions would "quantify" service-LEARNING projects by stating numbers of faculty members and total students engaged in any activities such as internships and mission trips as well as courses that would more fully embody Sigmon's vision. As a more coherent strategy for incorporating service-LEARNING in which a focus was on learning and academic content came to the forefront, assessment remained problematic. Assessment measures shifted to indirect student self-perception rather than direct measures of learning outcome goals such as critical or creative thinking or real-world problem solving. Although self-perception tests are not inherently flawed, they do not measure outcomes directly. Rather, they measure students' perceived gains of outcomes.

An important work in this area is by Eyler and Giles (1999) who distinguish the contributions of self-perception measures and also contribute significantly to the scholarship on assessing service-LEARNING. Not just focusing on the *how*, but also the *why*. Pascarella and Terezini (1991) conclude that Eyler and Giles' process illustrates the potential gains faculty members are able to quantitatively measure in service-LEARNING outcomes;

> "[b]ecause students engaged in social problem solving are encouraged to come to closure, to create solutions, they have to reconcile conflicting points of view and sources of information. For some, this process will help them apply their most advanced abilities; for others it will be the factor that helps them move to the next stage in their ability to evaluate and use complex information" (p.119).

Again, Sigmon (1979) defined service learning as "reciprocal learning" and he later (1994) developed four typologies. The primary focus of much of the research in this area is on SERVICE-learning. This, according to Sigmon, is out of balance with a focus on the service but less emphasis on how it will be applied in the classroom. SERVICE-LEARNING, or our Goldilocks model, in which both the service and learning goals are of equal value is what Sigmon advocates. In essence, equal value would be represented in courses where both service and learning are both emphasized through assignments, grades, student learning objectives and/or instructional time. However, Sigmon additionally urged caution regarding the application of SERVICE-LEARNING as scholars have struggled to locate the approach within their disciplines and

quantitatively assess SERVICE-LEARING in a way that is "just right" (Cauley 1981). It is to these issues that we now turn.

Cross-Disciplinary Application

Service-learning projects allow students to think outside of the box. These projects provide real-life knowledge that they might not have acquired otherwise. "Students may feel empowered by their experiences to assist others in need. They may also recognize their own biases and discomfort in such situations" (Jovanovic, DeGooyer & Reno, 2002, p. 7). It is not one particular type of person that participates in a project. College classrooms consist of people from every walk of life. This forces the students to communicate with one another, use real world problem solving skills as well as critical thinking skills in a group setting and also facilitate activities to enhance the project. This will help students in the future as they apply for jobs or work through real life problems with their families. Everyone experiences obstacles, and a group project in school can better prepare these students for future challenges. These types of projects can benefit the student and bridge the gap between these generations. Better understanding of one another can only help society function smoothly. "To establish commonality with the other is to recognize kinship, and therefore obligation" (Jovanovic, DeGooyer & Reno 2002, p.12).

Methods

This project consisted of case studies of six classes in Sociology and Political Science at Tennessee Technological University. All of these case studies involved extensive service learning projects. Four of the classes were Aging in American Society courses. In these courses students were given an opportunity to submit a grant proposal that described a project that could be funded by the university to meet the needs of seniors in the community. Each semester, a panel of community providers selected two projects, and the students who proposed those specific projects became the team leaders for the execution of that project.

Two of the classes were Political Science classes. One was survey-level American Government course and the second one was an upper division political science course where students submitted grant proposals. In the survey class, students went into local middle schools and taught the students debate skills culminating in a "Great Debate" among local middle school-aged children for prizes. This debate was held at our university. The upper division students sponsored and brought in speakers for the annual Take Back the Night event to raise awareness regarding violence against women, children, and men.

Assessment Tools

Both direct and indirect assessment tools were utilized to measure the effect of service learning in the classroom projects for this study. As an indirect measure of critical thinking, students completed QEP pre and post surveys where students' self-reported gains on critical thinking in these classes compared to typical classes. For the direct measure of critical thinking, students were given pre and post CAT (Critical thinking Assessment Test) assessments.

As part of the official Quality Enhancement Plan for accreditation at Tennessee Tech University, specific skills are targeted and assessed. The Quality Enhancement Plan is a five-year university initiative as a part of University Southern Association of Colleges and Schools accreditation and is an integral part of the University Strategic Plan to improve the quality of student learning. This plan is designed to improve students' critical thinking/real world problem solving skills using active learning strategies. Some of the skills targeted include evaluating and interpreting information, lifelong learning skills, effective communication, thinking creatively and teamwork. (Tennessee Tech QEP Background 2010-2015, n.d.) The progress that students demonstrate on course objectives, as well as some of the objectives of the Quality Enhancement Plan were evaluated using two separate measures, the QEP pre and post assessment survey and the CAT Instrument.

> "The Critical-thinking Assessment Test (CAT) was developed with input from faculty across a wide range of institutions and disciplines, with guidance from colleagues in the cognitive/learning sciences and assessment and with support from the National Science Foundation (NSF). This NSF funded assessment has been used at approximately 250 institutions and over 30 NSF projects to measure critical thinking skills. The CAT Instrument is designed to directly assess a broad range of skills that faculty across the country feel are important components of critical thinking and real world problem solving. All of the questions are derived from real world situations, most requiring short answer essay responses. The CAT instrument is designed to engage faculty in the assessment and improvement of students' critical thinking." (Critical-thinking Assessment Test Overview, n.d.)

The CAT assesses several skills that are outlined in Table 1 (Critical-thinking Assessment Test Overview, n.d).

Table 1. Skills Assessed by the CAT Instrument

Evaluating Information
• Separate factual information from inferences.
• Interpret numerical relationships in graphs.
• Understand the limitations of correlational data.
• Evaluate evidence and identify inappropriate conclusions.
Creative Thinking
• Identify alternative interpretations for data or observations.
• Identify new information that might support or contradict a hypothesis.
• Explain how new information can change a problem.
Learning and Problem Solving
• Separate relevant from irrelevant information.
• Integrate information to solve problems.
• Learn and apply new information.
• Use mathematical skills to solve real-world problems.
Communication
• Communicate ideas effectively.

Analysis

Using preliminary bivariate analysis results from the QEP pre and post assessment survey (two-tailed t-test), students in both courses showed significant improvement on multiple skills: (p<.05) (Tables 2 & 3)

Table 2: Paired two-tailed t-test of QEP Pre-/Post-Assessment (Sociology Course)

	2009[1]	2010[2]	2011[3]	2013[4]
	Means (Mdiff.)	Means (Mdiff.)	Means (Mdiff.)	Means (Mdiff.)
Separate Factual Knowledge from Inference	2.73/3.44* (.71)	3.06/3.88* (.82)	3.06/3.94* (.88)	3.06/3.94* (.88)
Analyze & Integrate Information, Complex Problem Solving	2.54/3.25** (.71)	2.88/3.65* (.59)	3.13/3.56 (.44)	3.13/3.56 (.44)
Critical Thinking	2.81/3.56* (.75)	3.47/4.06 (.59)	3.56/4.38* (.81)	3.56/4.38* (.81)
Creative Thinking	2.92/3.88* (.95)	3.41/3.88 (.47)	3.19/4.44*** (.82)	3.19/4.44*** (.82)
Solve Real World Problems	2.50/3.63*** (1.13)	3.41/3.93 (.53)	3.31/4.19** (.88)	3.31/4.19** (.88)
Analyze & Critically Evaluate Other Perspectives	2.77/3.69*** (.92)	3.35/4.00 (.65)	3.44/4.25* (.82)	3.44/4.25* (.82)
Make Effective Decisions	2.69/3.56*** (.87)	3.41/4.06 (.65)	3.56/4.00 (.44)	3.56/4.00 (.44)
Identifying Inappropriate Conclusions	2.96/3.50* (.54)	3.41/3.88 (.47)	2.75/3.56* (.81)	2.75/3.56* (.81)
Understanding the Limitations of Correlations	2.38/2.75 (.37)	3.00/3.71 (.71)	3.07/3.53 (.47)	3.07/3.53 (.47)
Identifying New Information Needed to Draw Conclusions	2.77/3.56** (.79)	3.41/4.00* (.59)	3.63/4.00 (.38)	3.63/4.00 (.38)
Recognizing How New Information, Change Solution to Problem	2.81/3.75*** (.94)	3.59/4.24 (.65)	3.31/4.19** (.88)	3.31/4.19** (.88)
Learn & Apply New Information	3.24/3.75 (.51)	3.65/4.24 (.59)	3.63/4.13 (.50)	3.63/4.13 (.50)
Communicate Effectively	3.23/3.69 (.46)	3.53/4.24* (.71)	3.13/4.63** (1.50)	3.13/4.63** (1.50)
Work with Others as Team Members	3.04/4.31*** (1.27)	3.53/4.35* (.82)	3.25/4.31** (1.06)	3.25/4.31** (1.06)
Note: * >.05; ** >.01; *** >.001 [1] Pre-Test N= 16/ Post-Text N= 23 [2] Pre-Test N= 16/ Post-Text N= 23 [3] Pre-Test N= 16/ Post-Text N= 23 [4] Pre-Test N= 16/ Post-Text N= 23				

Table 3: Paired two-tailed t-test of QEP Pre-/Post-Assessment (Political Science Course)

	2007[1]	2008[2]	2009[3]	2010[4]
	Means (Mdiff.)	Means (Mdiff.)	Means (Mdiff.)	Means (Mdiff.)
Separate Factual Knowledge from Inference	3.00/3.91* (.24)	2.78/3.39* (.61)	3.13/3.74*** (.61)	3.27/3.47 (.20)
Analyze & Integrate Information, Complex Problem Solving	2.91/3.64 (.73)	2.78/3.00 (.22)	3.13/3.18* (.05)	3.47/3.07 (-.40)
Critical Thinking	3.36/4.55** (1.18)	3.22/3.72 (.50)	3.43/3.88* (.46)	3.80/3.67 (-.13)
Creative Thinking	2.82/4.18*** (1.36)	2.72/3.33 (.61)	3.23/3.74* (.51)	3.53/3.20 (-.33)
Solve Real World Problems	2.82/4.00* (1.18)	2.72/3.00 (.28)	3.23/3.62 (.39)	4.00/3.33 (-.67)
Analyze & Critically Evaluate Other Perspectives	2.91/4.55*** (1.64)	2.83/3.72** (.89)	3.03/3.76* (.74)	3.87/3.40 (-.47)
Make Effective Decisions	2.82/4.09*** (1.27)	3.22/3.39 (.17)	3.38/3.65** (.27)	4.27/3.33* (-.93)
Identifying Inappropriate Conclusions	3.55/4.18** (.64)	3.06/3.50 (.44)	3.08/3.71 (.63)	3.20/3.67 (.47)
Understanding the Limitations of Correlations	2.45/3.73** (1.27)	2.78/3.33 (.56)	2.73/3.50* (.78)	2.87/3.33 (.47)
Identifying New Information Needed to Draw Conclusions	3.00/4.09** (1.09)	3.17/3.61 (.44)	3.25/3.85*** (.60)	3.40/3.13 (-.27)
Recognizing How New Information, Change Solution to Problem	2.91/4.27*** (1.36)	2.89/2.39 (.50)	3.20/3.50 (.30)	3.73/3.47 (-.27)
Learn & Apply New Information	3.36/4.27* (.91)	3.67/3.94 (.28)	3.43/3.94* (.52)	4.20/3.53* (-.67)
Communicate Effectively	3.64/4.36 (.73)	3.29/3.61 (.32)	3.41/3.79 (.38)	4.13/3.40* (-.73)
Work With Others As Team Members	3.64/3.82 (.18)	3.06/2.89 (-.17)	3.33/2.82** (-.50)	3.04/3.07* (-.93)

Note: * >.05; ** >.01; *** >.001
[1] Pre-Test N= 16/ Post-Text N= 23
[2] Pre-Test N= 16/ Post-Text N= 23
[3] Pre-Test N= 16/ Post-Text N= 23
[4] Pre-Test N= 16/ Post-Text N= 23

Unlike the QEP pre and post assessment, which measures how students feel they have progressed on certain objectives, The CAT measures a student's ability to transfer critical thinking skills to non-specific disciplines. "A series of increasingly deeper and more explicit question prompts are used to engage students' critical thinking skills to measure the extent to which people can understand and evaluate new information and apply that information to a novel situation." (Haynes et al, 2016 p.49)

Using the CAT (Critical Thinking assessment Test) preliminary analysis, students were evaluated on their progress on a number of skills. Students showed significant improvement on the following skills: (paired one tailed t-test)(p <.05)

- Summarizing the pattern of results in a graph without making inappropriate references
- Identifying additional information needed to evaluate a hypothesis
- Total CAT score (overall measure of critical thinking skills)

Finally, the IDEA Evaluation tool utilized a likert scale survey to assess progress on relative objectives in the course that are selected by the instructor. The emphasis of the IDEA evaluation is on improving teaching, learning and the higher education process. For this evaluation, students in the course are asked to evaluate their perceptions of progress on relevant objectives to the course, identified by the professor prior to the evaluation. As demonstrated in Table 4, a majority of students in the courses utilized for this study reported "Substantial" or "Exceptional" progress on relevant objectives.

Table 4: IDEA evaluation results demonstrating students' perceptions of progress on relevant objectives

Targeted Skill (Relevant Objective)	2007	2009	2010	2011	2013
Learning to Apply Course Material to Improve Thinking, Problem Solving and Decision Making	88%/84%	67%	82%	95%	95%
Learning to analyze and critically evaluate ideas, arguments and points of view	88%/92%	67%	89%	90%	86%

Conclusion

In conclusion, we encourage further scholarship vis-à-vis critical thinking and SERVICE-LEARNING in cross-disciplinary applications. SERVICE-LEARNING can have a positive, significant effect on many of the skills identified as crucial to the critical thinking skills of college students.

Demonstrable gains were indicated both across disciplines and over time in QEP pre and post measures, IDEA student evaluations and the CAT instrument. Students learn by doing and therefore, active learning strategies such as SERVICE-LEARNING projects/opportunities are effective tools for developing these real world skills and improving critical thinking. SERVICE-LEARNING projects provide this "link" between study and real-world application. Although we have found a promising positive relationship between SERVICE-LEARNING and critical thinking, more research using direct measures is needed. Thus, we proffer that universities continue, as suggested by Sigmon, to move away from the "too soft" neglect of the classroom inherent in SERVICE-learning and, likewise eschew the "too hard" approach of service-LEARNING that overworks the student in the classroom with no time left for civic education; obviously, neither option provides a balanced model of SERVICE-LEARNING. Clearly the balanced and interdisciplinary application of a "Goldilocks model of SERVICE-LEARNING" is invaluable in higher education. Therefore, we would suggest, based on our assessment, that when SERVICE and LEARNING are used as pedagogical tools in balance with each other, a maximum benefit for the students can take place. In other words, if SERVICE and LEARNING are given equal emphasis in the classroom, the learning that takes place is "just right."

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