

PULSE Program for Service Learning
E1A Form for Assessment of the Undergraduate Core

1. State the formal learning outcomes for the undergraduate core program: what the university expects the student to know or be able to do upon completion of the program.

PULSE RESPONSE: As a core program within the Philosophy and Theology Departments in the Morrissey College of Arts and Sciences, PULSE's learning outcomes reflect those for the university as well as for the Philosophy and Theology Departments. In June, 2015, the PULSE faculty also developed more specific learning outcomes for the core-level PULSE course, "Person and Social Responsibility."

Philosophy Core Goals

Philosophy has a permanent and central place in Jesuit higher education and is an important part of the Boston College Core Curriculum. By introducing students to the great philosophical questions, philosophy offers a perspective which makes possible an integrated vision of physical, human and spiritual reality; it weighs propositions fundamental to personal identity, dignity, religious belief, and social responsibility; and it examines moral issues that individuals and communities experience. The Philosophy core teaches critical and analytical skills so that students develop an intellectual and moral framework for considering questions of ultimate value and significance, challenging them to translate philosophical principles into guides for life. All Core offerings in philosophy bring students to reflect critically on the kinds of claims made in different disciplines from the natural sciences to theology by considering questions about the nature of reason, evidence, belief, and certainty. The two (2) sequential three-credit courses in the Philosophy core aim to teach students that the philosophical habit of mind is part of a well-lived life, providing the perspective and tools for critical evaluation of and engagement with contemporary problems and questions.

Students completing the Philosophy core will be able to:

1. Understand the historical origins of values and principles that ground and are questioned in contemporary culture;
2. Reflect on their individual, social, and religious identities and relationships;
3. Examine their values in light of their reflection on philosophical views;
4. Develop the ability to analyze arguments in order to create a moral framework for considering questions of ultimate value;
5. Consider the nature of notions like reason, evidence, belief, and certainty such that they are able to think critically about the kinds of claims made in different disciplines from the natural sciences to theology;
6. Critically engage with contemporary problems and questions using the tools of philosophical reflection and argument.

Theology Core Goals

Theology is the disciplined reflection on the mystery of God in the world and on the traditions of belief, worship, and ethics that shape communities of faith. It explicitly reinforces the tradition of Jesuit humanism, which prizes the scholarly investigation of religious faith and its impact on human culture. The study of theology is an essential feature of the Core Curriculum in a Jesuit, Catholic university. This implies an institutional commitment to the Roman Catholic tradition, but also encourages the study and understanding of other theological traditions.

Students completing the Theology core will be able to:

1. Engage the quest for truth and meaning that generate theological insight in Christianity and other religious traditions;

2. Explore the fundamental texts and practices that shape Christian theology;
3. Understand the dynamic relationship between religious truth-claims and their moral implications, both personal and societal;
4. Engage the various disciplinary methods required for theological reflection, including textual, historical, social, and cultural analysis; and
5. Relate theological inquiry to the enduring questions animating the broader liberal arts tradition.

PULSE Core Goals

1. Students will have an understanding of the ways in which service and the study of philosophical and theological traditions inform each other;
2. Students will demonstrate the ability to employ an ongoing praxis methodology in which they *encounter* challenging social realities, critically *reflect* upon them in conversation with philosophical and theological traditions, and *act* with informed and critical agency;
3. Students will develop a critical understanding of intersectionality and interlocking structures of privilege and oppression, especially race, class, gender, sexuality, and ability;
4. Students will demonstrate moral development through a growth in compassion, a sense of responsibility and agency in response to injustice to contribute to the common good and social justice, and engagement in questions about the divine-human relationship.

2. State the location(s) where these learning outcomes are published and accessible to students interested in the major or program: e.g., website, catalog, departmental handouts.

PULSE RESPONSE:

The Philosophy and Theology goals are listed on the webpages of the respective departments:

Philosophy: <https://www.bc.edu/bc-web/schools/mcas/departments/philosophy/undergraduate/core-in-philosophy.html>

Theology: <https://www.bc.edu/bc-web/schools/mcas/departments/theology/undergraduate/core-in-theology.html>

The PULSE goals are listed on the program’s website:

<https://www.bc.edu/bc-web/schools/mcas/sites/PULSE/about.html>

3. Other than the GPA, what data/evidence is used to determine whether graduates of the program have achieved the stated outcomes?

PULSE RESPONSE

INDIRECT EVIDENCE: PULSE gathers indirect evidence through beginning-of-year and end-of-year survey tools about student learning in which students self-report. In addition, PULSE has been studied by outside researchers about its effectiveness as a service-learning program. These outside researchers have compared PULSE student responses to validated national surveys, and have identified statistically significant outcomes. This is very powerful “indirect” evidence (see Appendices 1-3).

DIRECT EVIDENCE:

At its Faculty Days in June, 2016, the PULSE faculty decided upon the following plan to do direct assessment of student learning beginning in the 2016-2017 academic year. The faculty decided upon a Common Assignment:

- A. In 2016-2017 PULSE will assess PULSE Core Goal #1 [*see top of this page for PULSE core goals*]

- B. Very early in the fall semester, each faculty person will design and assign a writing assignment that fits with his/her course that addresses Goal #1. It is up to each faculty person to decide how to grade the assignment and use it in the course. The faculty person will hold onto one set of the completed assignment.
- C. At the end of the spring semester, each faculty person will assign the same writing assignment as was given in the fall. The faculty person will then submit a complete set (fall and spring) of the writing assignments to the PULSE office.
- D. Random samples will be taken from each PULSE section. A team (or teams) of faculty readers will each read the same before and after sample assignments of particular sets and compare assessment results. The goal is to have this assessment work done prior to the 2017 Faculty Days (usually in late May or early June) so that the faculty can discuss the process as well as the results, and then make changes as necessary.
- E. If all goes well, in the following academic year, the faculty will assess Goal #2 (page 2 of this document) and so on in following years.

RESULT of DIRECT ASSESSMENT IN 2016-2017

What follows on the following two pages is the memo that was distributed to the PULSE faculty at our annual faculty days in 2017:

PULSE Program for Service Learning
2016-2017 Core Assessment Process and Results (Direct Evidence)
Report from Assessment Committee to PULSE Faculty – May 18, 2017

Background Explanation

- As part of its NEASC accreditation process, PULSE (along with many other programs in the university) was asked by the provost's office to provide "direct evidence" and "indirect evidence" regarding student learning outcomes. Because PULSE had been doing beginning-of-year and end-of-year surveys for a number of years, the program had much indirect evidence as self-reported by students but had no direct evidence.
- For the purpose of gathering direct evidence of student learning, at our PULSE faculty days in spring 2015 we crafted learning goals for the core PULSE course, "Person and Social Responsibility". These goals were edited and presented again to the PULSE faculty at our spring 2016 faculty days for final ratification. It should be noted that while the impetus to construct PULSE core learning goals was prompted by an external accreditation requirement, the PULSE faculty entered into this process not with an attitude of "hoop jumping" but rather with an open, constructive, collaborative spirit and an eye toward how constructing these goals could improve student learning in the program.
- Once the goals were accepted, we decided at our spring 2016 faculty days that our process would be to assess one goal each year beginning with goal 1 in 2016-2017, goal 2 in 2017-2018, etc. To that end, it was decided that students would write beginning-of-year and end-of-year papers on a prompt that would address the learning goal for that year.

Assessment Tool for 2016-2017

- In the fall semester, instructors gave students a writing assignment that pertained to the learning goal. Instructors created their own prompts based on learning goal 1 we were intending to measure. In the spring semester, they assigned the same prompt to the students. A committee of PULSE faculty members would read the "before and after" papers to collect direct evidence.

Process for Determining Assessment

- Four instructors met during a planning meeting to determine how they would assess the student papers. They developed a preliminary rubric they would use to measure whether the various components of learning goal 1 were met. They decided to read a portion of all the student papers and so asked each instructor to submit five papers (three strong spring papers and two weak spring papers, along with the corresponding fall papers for a total of five). They would evaluate these papers according to the preliminary rubric they devised.
- The PULSE office collected the 12 sets of papers, organized them, and deleted all identifying data to prepare the papers for evaluation. Anonymity in this process was important as it was emphasized to instructors that the purpose is to assess student learning, *not* instructor effectiveness or performance.
- The evaluating instructors met a second time. Individually they all reviewed the same set of spring and fall papers, and then compared and discussed their results.
- From this conversation, the evaluating instructors then had a norming session, in which they revised both the evaluating criteria and rating scale to better capture learning outcomes.
- The evaluating instructors each evaluated two or three sets of papers (for a total of 10 or 15 spring and 10 or 15 fall each) according to the revised rubric established during the norming session.

Conclusions

- After reading the sets of papers, the evaluating instructors met to compare their results and arrived at the following conclusion: **while the papers indicated growth in reaching the learning outcomes overall, the assessment tool we chose as a faculty at the 2016 faculty days could not adequately measure learning outcomes.**
- We identified the following shortcoming in the assessment tool:
 1. The assignment varied among instructors in the following ways: length of prompts, wording of prompts, what time of year the prompts were assigned. These variations made it impossible to assess them using a uniform rubric.

2. The prompt was often too broad in scope for the short length of the assignment, which led students to collapse ideas together rather than expand on specific ideas (e.g. sometimes the fall papers were stronger than the spring papers).
3. Some instructors changed aspects of the prompts from the fall to the spring assignments, which made it difficult to measure growth from the early essay to the later one.
4. There was a general mismatch between the prompts and the learning outcomes we were trying to measure.

Recommendations

- The committee of evaluating instructors recommends to our colleagues that we revise our assessment tool in the following ways to make the assessment more effective:
 1. Uniformity in the assignment for all instructors regarding: the prompt itself, the fall due date (the same day as or the day before the town meeting), the grading method (e.g. pass/fail, check/check plus), length of prompt (2-3 pages).
 2. Greater specificity in the prompt targeted at the learning goals we are trying to measure (e.g. be clear that we want students to engage with course texts and thinkers by engaging directly with them in the papers)
 3. Instructors use the identical prompt in the fall and spring semesters.
- We are also recommending that we redo assessment of learning goal 1 in 2017-2018 so that we have an opportunity to improve our process as a program before we assess a different learning goal

We look forward to our conversation this morning.

Respectfully,

Matt Kruger, Julia Legas, Meghan Sweeney, Mary Troxell

Criteria Considered for Assessing Goal 1

- A) Able to discuss general course themes (e.g. philosophy, theology, service, justice)
- B) Thoughtful engagement with specific concepts, ideas, or thinkers (e.g. utilitarianism, equity, black theology, Aristotle, Augustine)
- C) Connects or shows a theme, thinker, or idea as it relates to service
- D) Demonstrates that service informs understanding of philosophical or theological concepts discussed in class.

Scale Used

- 1 = does not meet requirement
- 2 = somewhat meets requirement
- 3 = meets requirement
- 4 = somewhat exceeds requirement
- 5 = excellent
- N/A = lack of applicability to prompt to meet learning goal

PULSE Core Learning Goals

1. Students will have an understanding of the ways in which service and the study of philosophical and theological traditions inform each other.
2. Students will demonstrate the ability to employ an ongoing praxis methodology in which they *encounter* challenging social realities, critically *reflect* upon them in conversation with philosophical and theological traditions, and *act* with informed and critical agency.
3. Students will develop a critical understanding of intersectionality and interlocking structures of privilege and oppression, especially race, class, gender, sexuality, and ability.
4. Students will demonstrate moral development through a growth in compassion, a sense of responsibility and agency in response to injustice to contribute to the common good and social justice, and engagement in questions about the divine-human relationship.

RESULT of DIRECT ASSESSMENT IN 2017-2018

What follows on the next two pages is the memo that was distributed to the PULSE faculty at our annual faculty days in 2018:

Boston College
PULSE Program for Service Learning
2017-2018 Core Assessment Process
May 17, 2018

PULSE Core Learning Goals (established by PULSE faculty in 2015)

1. Students will have an understanding of the ways in which service and the study of philosophical and theological traditions inform each other.
2. Students will demonstrate the ability to employ an ongoing praxis methodology in which they *encounter* challenging social realities, critically *reflect* upon them in conversation with philosophical and theological traditions, and *act* with informed and critical agency.
3. Students will develop a critical understanding of intersectionality and interlocking structures of privilege and oppression, especially race, class, gender, sexuality, and ability.
4. Students will demonstrate moral development through a growth in compassion, a sense of responsibility and agency in response to injustice to contribute to the common good and social justice, and engagement in questions about the divine-human relationship.

2017-2018 Prompt for Students to Assess Goal 1:

In about 750 words, build an argument by engaging directly with specific sources (of any sort, whether your parents, Aristotle, the Bible, etc.) that demonstrates how service and the study of philosophy and theology inform one another.

Instructions for Professors for Administering 2017-2018 Prompt:

The above prompt will be assigned to PULSE core-level students in 2017-2018. The beginning-of-year papers will be due to you from your students on **either Tuesday, September 5 (for TuTh classes) or Wednesday, September 6 (for MWF classes); the end-of-year date is *tbd***. The assignment will come from you directly and not from the PULSE office, so please be sure to include it in your syllabus. For now, please hold onto the beginning-of-year papers; if for some reason the PULSE office needs them before the end-of-year papers have been submitted to you, the office will contact you.

Grading: Please *do* grade the assignment so that students are incentivized to engage it thoughtfully.

Criteria Established by Ad-hoc Assessment Committee (M. Kruger, M. Sweeney, M. Troxell) for Assessing Goal 1 in 2017-2018

- A) Able to discuss general course themes (e.g. philosophy, theology, service, justice)
- B) Thoughtful engagement with specific concepts, ideas, or thinkers (e.g. utilitarianism, equity, black theology, Aristotle, Augustine)
- C) Connects or shows a theme, thinker, or idea as it relates to service
- D) Demonstrates that service informs understanding of philosophical or theological concepts discussed in class.

Scale Used

- 1 = does not meet requirement
- 2 = somewhat meets requirement
- 3 = meets requirement
- 4 = exceeds requirement

Method

- We met as an ad hoc committee in late April to discuss how we wanted to proceed
- We collected 6 sets of papers from each sections: 3 strong, 3 weak based on each instructor's evaluation of the *second* paper
- We read a sample of the collected papers (out of 96 possible paper pairs, we read 34 pairs)
- We had a norming session in which we each read the same 6 paper pairs and then discussed them in order to refine our understanding of how to assess them.
- As a result of our norming session, we refined our criteria for determining where a paper fits on the scale. The following criteria was used:
 - 1 = Paper does not mention any philosophical or theological thinker, concept or theme, nor does the paper effectively discuss themes mentioned in A.
 - 2 = Paper mentions thinkers, etc., in philosophy and/or theology but does not engage them effectively and/or accurately.
 - 3 = Paper employs thinkers etc. in both disciplines effectively and connects them to service effectively as well.
 - 4 = Paper's analysis of thinkers, etc. and application to service demonstrates a sophisticated understanding or impressive insight into the disciplines and/or service, or student meets all criteria including D.

NOTE: We determined that meeting criteria D is not necessary for papers to meet the requirements of the learning goals.

Results

Evaluation yielded the following results:

- This method of evaluation was more successful than last year's methodology.** In particular, using the same prompt in both the fall and spring semesters, establishing standard due dates for both essays, and setting a word limit on the essays created greater uniformity among sections. Because the papers were more uniform, it was easier to create criteria that was both more specific and more widely applicable.
- There was considerable consensus between the instructors and evaluators** regarding whether learning goals were met (i.e., what constituted a strong and weak essay.) Of the 34 papers evaluated, only 1 of the 12-15 strong essays was awarded under a 3 for the spring essay (it was awarded a 2.5). All of the weak papers were given an evaluation of 1 or 2 for the spring essay.
- The essays provided evidence that students are meeting this learning goal.** Out of the 15 strong essays, students moved from an average score of 1.7 on their fall papers to a score of 2.96 on their spring papers. Out of the 13 weak essays, students moved from an average score of 1.4 in the fall semester to a score of 1.46 in the spring semester.

Additional comments during faculty discussion during 2018 faculty days:

- Stronger papers showed significant improvement while weaker papers saw no significant improvement
 - Strong papers improved from 1.7 to 2.96, whereas weak papers improved from 1.4 to 1.46
- For next year we need to think about how to capture the progress of more "middle of the road" papers, instead of just looking at stronger and weaker end-of-year papers
 - Randomize?
 - Ask faculty to indicate how many of the final papers are strong, middling, and weak?
- What are some reasons why weak papers did not increase?
 - Students did not seem to be trying
 - Hard time overall staying away from clichés

Core Assessment 2018-2019

Discussion regarding core assessment for 2018-2019 resulted in a decision to skip learning goal #2 and instead assess learning goal #3. A shared prompt was decided upon: **How do structures of privilege and oppression (e.g. race, class, gender, sexuality, and ability) intersect and interlock? In about 750 words address this question using readings and experience.** As with this past year's prompt, faculty will be given the following instructions on how to implement the assessment tool:

Instructions for Professors

The above prompt will be assigned to PULSE core-level students in 2018-2019. The beginning-of-year papers will be due to you from your students on **either Tuesday, September 4 (for TuTh classes) or Wednesday, September 5 (for MWF classes); the end-of-year date is *tbd*.** The assignment

will come from you directly and not from the PULSE office, so please be sure to include it in your syllabus. After you collect your September papers, please hold onto them; if for some reason the PULSE office needs them before the end-of-year papers have been submitted to you from your students, the office will contact you. **Grading:** Please *do* give credit for the assignment in both semesters so that students take it seriously.

There was also discussion regarding how many papers need to be read in order to ensure that the results are sufficiently representative. And there was discussion on what we hope to see in goal #3 assessment papers:

- Student identifies privilege and oppression as structural;
- Student defines both privilege and oppression and explains how they work;
- Student addresses relationship between privilege and oppression;
- Student demonstrates an understanding that privilege and oppression are not additive but intersectional;
- Students use texts from the year for the spring paper

4. Who collects and interprets the evidence and what process do they use to make recommendations for improvement? When does this occur?

PULSE RESPONSE

INDIRECT EVIDENCE:

The internally-administered surveys are interpreted by the PULSE Program staff (director and assistant director). The internal survey questions are reviewed at the beginning of each academic year, and the survey results are read by the program staff at the end of each academic year with special attention paid to difficulties students may have encountered, especially with their PULSE service placements.

The external surveys, which are sporadic in their implementation according to the research needs of the researchers, are interpreted by the professional researchers using advanced statistical methodologies and measure students' self-reported impact of PULSE on themselves.

DIRECT EVIDENCE:

Please see the previous PULSE memos [pp. 4-7]

5. List the changes that have been made as a result of the recommendations that emerged from the evidence collected with a short explanation of why each change was made.

PULSE RESPONSE: At this time, we are still figuring out how to do the direct assessments. Once we have established a method that seems to work well, we can attend more to responding to the evidence. At this moment in time, the direct evidence is encouraging.

6. Do you have evidence that the change has resulted in improvement in learning outcomes?

PULSE RESPONSE: Not yet applicable.

7. Give the date of your most recent program review and the date of your next review.

PULSE RESPONSE: Uncertain.

APPENDICES:

Appendix 1 (p. 10-11): Michelle Sterk Barrett, *Fostering the Spiritual Development of Undergraduates through Service Learning (dissertation section)*

Appendix 2 (p. 12-34): Michelle Sterk Barrett, *Fostering the Spiritual Development of Undergraduates through Service Learning (article from dissertation)*

Appendix 3 (p. 35-38): PULSE 2016-2017 *Beginning-of-Year* and *End-of-Year* Student Surveys (indirect evidence)

Appendix 4 (p. 39-42): PULSE 2017-2018 *Beginning-of-Year* and *End-of-Year* Student Surveys (indirect evidence)

APPENDIX 1

Source: Michelle Sterk Barrett, *Fostering the Spiritual Development of Undergraduates through Service-Learning* (PhD Dissertation, University of Massachusetts Boston, 2015), 119-121.

Descriptive Statistics

Descriptive statistics related to independent variables are reported in this section.

Descriptive statistics related to the spirituality variables will be discussed in the following section analyzing the first research question.

As demonstrated in Table 10, students generally had a very strong PULSE experience. Mean responses to all of the independent variables fell between 3 and 4 indicating overall student agreement with each statement. The highest mean and lowest standard deviation was in response to whether students felt supported by their PULSE professors. It is clear that students had good relationships with their PULSE professors and were able to turn to them for support through the PULSE experience. The lowest mean was in response to whether students observed unfair human suffering at their PULSE placement. This variable also had among the highest standard deviation. In other words, not all students were exposed to the same level of human suffering through PULSE. The greatest standard deviation overall was whether students felt supported by their PULSE supervisor. It is not surprising that this would vary as supporting PULSE students is not a primary job responsibility for any of the PULSE supervisors (unlike the PULSE faculty). The ability to support students likely relates to the amount of time PULSE supervisors have available after attending to their primary job responsibilities—which would be dependent upon the staffing levels of each agency.

Table 10

Descriptive Statistics of Independent Variables/PULSE Components (N=272)

Variable	<i>n</i>	M	SD
I felt supported by my PULSE professor.	272	3.81	.481
Class journaling / reflective writing challenged me to think critically about my assumptions, values, and/or beliefs.	270	3.47	.672
There was a diversity of perspectives expressed in my PULSE class and discussion group.	270	3.50	.644

The problems that caused people at my placement to need social services were frequently the result of circumstances beyond their control.	271	3.52	.595
I felt supported by other students at my placement.	270	3.49	.740
This course exposed me to diverse perspectives that did not fit with my prior opinions and assumptions.	270	3.50	.644
I built caring relationships with those served at my placement.	271	3.61	.700
Class assignments challenged me to think critically about my assumptions, values, and/or beliefs.	271	3.57	.604
Social problems are more complex to solve than I used to think.	270	3.65	.621
Those served at my PULSE placement faced unfairness in life.	270	3.55	.594
I felt supported by others students in my class.	272	3.54	.587
Class discussions / reflection groups enabled me to connect what I was observing in my placement with what I was studying in class.	271	3.63	.631
I felt supported by my PULSE supervisor(s).	271	3.49	.838
The class discussions/reflection groups challenged me to think critically about my assumptions, values, and/or beliefs.	269	3.57	.598
PULSE exposed me to diverse viewpoints that challenged me to think differently.	271	3.67	.502
My PULSE Placement should remain a placement in the future.	223	3.68	.666
A supportive community formed among those in my PULSE discussion group.	270	3.44	.664
The class readings helped me to make sense of what I was observing in my placement.	270	3.36	.695
I observed unfair human suffering at my PULSE placement.	271	3.21	.785
The service component of this course was well integrated with the academic coursework.	271	3.57	.640
My PULSE placement experience challenged me to think critically about my assumptions, values, and/or beliefs.	270	3.60	.575
I felt supported by my PULSE Council Member.	271	3.54	.618
I heard perspectives expressed at my PULSE placement that were different from those I typically hear.	270	3.43	.679

Note. Level of agreement with the statement measured on the following scale:

1=Strongly disagree 2=Disagree somewhat 3=Agree somewhat 4=Agree strongly

APPENDIX 2

Fostering the Spiritual Development of Undergraduates through Service Learning

Michelle C. Sterk Barrett

University of Massachusetts, Boston

College of the Holy Cross, Worcester

SERVICE LEARNING & SPIRITUAL DEVELOPMENT

Holistic student development, the belief that education should foster the development of the whole person, is a primary mission of higher education (American Council on Education, 1937; Braskamp, Trautvetter, & Ward, 2006; Kiessling, 2010). One component of holistic student development is spiritual development (Kiessling, 2010).

Studies have found that undergraduates and youth have an overwhelming interest in spirituality. Astin, Astin, and Lindholm (2004) discovered that 78% of undergraduates discuss religion/spirituality with their friends and 75% are actively searching for meaning/purpose in life. Roehlkepartain et al. (2008) investigated spiritual beliefs among 12-25 year olds in eight countries and found that 52% of youth in the United States describe themselves as very or pretty spiritual and only 20% describe themselves as not spiritual.

Yet, students have expressed that academic experiences within higher education are not adequately meeting their desire for spiritual development (Astin et al., 2004; Chickering, Dalton, & Stamm, 2006; Kuh & Gonyea, 2006). Fifty-six percent of undergraduates report that their professors never provide opportunities to discuss the meaning/purpose of life and 53% believe the classroom has had no impact on their spiritual beliefs. Only 55% are satisfied with the experience their college has provided for religious/spiritual reflection (Astin et al., 2004).

Higher education scholars have also expressed concern about the lack of emphasis on spirituality in the classroom and have advocated for an increased emphasis on spiritual development of undergraduates (Astin et al., 2011b; Chickering, et al., 2006; Rendon, 2009). Chickering et al. (2006) state that students, faculty, student affairs personnel, and campus leaders “have begun calling for an exploration of ways to better integrate students’ search for meaning and their spiritual quests with their academic preparation in the classroom” (p. 2).

The ability to effectively facilitate spiritual development in the classroom, however, is dependent upon understanding how to foster spiritual growth pedagogically. Service-learning is

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a pedagogy that has shown promise in facilitating the spiritual development of undergraduates as a limited number of prior studies have found a relationship between spiritual growth and service-learning participation (Astin et al., 2011a; Cherry, De Berg, & Porterfield, 2001; Eyler & Giles, 1999; Kuh & Gonyea, 2006; Lovik, 2010; Radecke, 2007; Yeh, 2010). The existing studies do not simultaneously use comprehensive measures of both spiritual growth and service-learning participation and, therefore, offer inadequate analysis of the relationship between the two. This study seeks to fill this gap and offer further understanding of how service-learning may be utilized as a pedagogical tool to foster spiritual growth within an academic context.

Understanding how to better foster spiritual development among undergraduates can provide many benefits to students, society, and higher education institutions. Prior research has established a relationship between spirituality and psychological well-being (Astin, et al., 2011b; Park & Millora, 2010), self-esteem (Astin, et al., 2011b), decreased alcohol/substance abuse (Kuh & Gonyea, 2006; Stewart, 2001; VonDras, Schmitt, & Marx, 2007), and less risky health behaviors (Nelms, Hutchins, Hutchins, & Pursley, 2007). Increased spirituality is also associated with increased participation in community service/helping others (Astin, et al., 2011b; Brandenberger & Bowman, 2013; Kuh & Gonyea, 2006; Seitz, 2009), increased caring/compassion (Astin, et al., 2011b; Brandenberger & Bowman, 2013; Seitz, 2009), increased social justice orientation (Chenot & Kim, 2013), an increased appreciation for diversity (Astin, et al., 2011b; Seitz, 2009), and increased academic success among ethnic minority students (Walker & Dixon, 2002; Lee, Puig & Clark, 2007).

Methods

In order to further understand how and whether service-learning can be utilized as a pedagogical tool to foster spiritual growth, this study addressed the following research questions:

- 1) Does spiritual growth occur among undergraduates participating in service-learning?

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2) Which aspects of the service-learning experience relate to the occurrence of spiritual growth?

3) What role do “challenge” and “support” play in the process of spiritual growth? These research questions were addressed through an explanatory design mixed methods study (Creswell & Plano Clark, 2011) that incorporated a quantitative and qualitative strand.

The third research question is derived from the theoretical perspective of Nevitt Sanford (1962, 1966, 1967). Sanford proposed that optimal college student development occurs when students face an appropriate balance of challenge and support. If a student does not face enough challenge then there is no impetus for growth. If a student is not adequately supported through significant challenges then the possibility for healthy growth may be hindered. Sanford’s theory of challenge and support aligns with spiritual development theories proposing that spiritual struggle is a necessary precursor to spiritual growth and empirical studies and spiritual development theories suggesting that crisis and disequilibrium are precursors to spiritual struggle (Cartwright, 2001; Daloz Parks, 2000; Fowler 1981, Holcomb and Nonneman, 2004; Ma, 2003; Tisdell, 2003; Welch and Koth, 2013). It also aligns well with research indicating that students may not grow spiritually and get stuck in maladaptive patterns of behavior without enough support (Bryant and Astin, 2008; Faigin, 2013; Holcomb and Nonneman, 2004).

Participant Selection

Study participants were drawn from the Boston College PULSE Program, a service-learning program that requires students to do 10-12 hours of weekly service for the full academic year while taking an interdisciplinary philosophy and theology course entitled, Person and Social Responsibility. Among the 361 total students in the 2012-2013 PULSE Program, 272 students completed both the pre-survey and post-survey for a total response rate of 75%. Eleven survey respondents whose results indicated an extremely high or low level of spiritual growth participated in semi-structured interviews for which they were compensated with a \$50 gift card.

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Interviewees were also selected to ensure variation in academic disciplines, ethnic backgrounds, religious backgrounds, PULSE classes, and PULSE placements.

Characteristics of the Sample

Of the 272 study participants in the quantitative strand, 36% were male and 64% were female. The sample was 69.9% White/Caucasian, 17.0% Asian American/Asian, 12.5% Hispanic/Latino/a, and 5.5% African American/Black. In terms of religious preference, 60.0% of the participants listed Catholic, 24.3% none, and 3.3% Jewish. No other religious denomination was listed by more than 3% of the study sample. Although nearly all (97.8%) of the study participants were previously involved in community service, 84.6% had not previously taken a service-learning course.

Data Collection Procedures Quantitative strand.

The quantitative strand of the study included both a pre-service and post-service survey that was distributed via e-mail to all PULSE students in conjunction with the program's annual assessment process. The pre-service survey was conducted in September through early October of 2012. The post-survey was distributed near the end of the service-learning experience in mid-April through May of 2013.

Independent variables.

Based upon the literature review and the theoretical framework of challenge and support, variables were developed to measure aspects of the service-learning experience. The literature review indicates that the primary challenge associated with service-learning results from disorienting dilemmas or exposure to stimuli that lead to cognitive dissonance (Hatcher, Bringle & Muthiah, 2004; Kiely, 2005). These challenging stimuli can include: exposure to diverse perspectives/perspectives that do not fit with prior perspectives (Astin et al., 2000; Eyler et al.,

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2001; Kiely, 2005); exposure to complex social problems without easy solutions (Eyler & Giles, 1999; Kiely, 2005); exposure to social problems that seem unjust (Kiely, 2005); and written reflection activities and class discussions that ask students to think critically about prior assumptions, values, or beliefs (Astin et al., 2000; Eyler et al., 2001; Eyler & Giles, 1999; Fenzel & Peyrot, 2005; Hatcher et al., 2004; Kiely, 2005). In order to effectively process these challenges and integrate a new way of thinking into one's being, support can exist in the following ways: reflection activities that provide a student the opportunity to process his/her cognitive dissonance by connecting what he/she is observing in the placement with what he/she is studying in class (Astin et al., 2000; Eyler et al., 2001; Fenzel & Peyrot, 2005) or supportive relationships with a faculty member, peers, or placement site supervisor (Astin et al., 2000; Eyler & Giles, 1999; Hatcher, et al., 2004; Kiely, 2005). Specifically, each student responded to his or her level of agreement with the indicators in Table A1.

For data analysis purposes, these variables were categorized in two different ways. First, independent variables were categorized into *Total Challenge* and *Total Support* scales to consider how Sanford's theory of challenge and support might relate to spiritual development. Then, factor analysis was conducted that led independent variables to be categorized into the following service-learning components: *Class Experiences*, *an Eye Opening Experience*, *Witnessing Injustice*, *Relationships at Placements*, and *Support of Peers in Class*.

Dependent variables.

A review of the literature led to a conceptualization of spirituality including the following dimensions: 1) being engaged in a dynamic process of inner reflection to better understand oneself and the meaning and purpose of one's life; 2) living out one's personal philosophy of life with authenticity and integrity; 3) seeking a connection/relationship with a higher power; and 4) belief in the interconnectedness of humanity and a related desire to be of service to others (Astin,

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Astin, & Lindholm, 2011b; Braskamp et al., 2006; Love & Talbot, 1999; Roehlkeptatian et al., 2008). Based upon this conceptualization of spirituality and the instrument developed by Astin, Astin, and Lindholm (2011a; 2011b), spirituality indicators in the quantitative portion of the study were categorized into six scales: *Spiritual Identification*, *Spiritual Quest*, *Interconnectedness of Humanity*, *Living One's Philosophy of Life with Integrity*, *Relationship with God*, and *Religious/Spiritual Struggle*. The *Spiritual Identification (SI) Scale* ($\alpha=.837$) measures whether one identifies as spiritual. The *Spiritual Quest (SQ) Scale* ($\alpha=.834$) refers to whether one is engaged in a dynamic process of inner reflection to better understand oneself and one's meaning and purpose in life. The *Interconnectedness of Humanity (IH) Scale* ($\alpha=.869$) measures one's belief in the interconnectedness of humanity and whether one exhibits a related desire to be of service to others. The *Living One's Philosophy of Life with Integrity (PLI) Scale* ($\alpha=.949$) measures the desire to live out one's philosophy of life with integrity and authenticity. The *Relationship with God (RG) Scale* ($\alpha=.837$) measures the degree to which one is seeking a relationship with a higher power/God. The *Religious/Spiritual Struggle (RS) Scale* ($\alpha=.779$) considers the degree to which one is struggling with and questioning one's religious/spiritual background and beliefs. A *Spiritual Orientation (SO) Scale* ($\alpha=.932$) was also created for this study by including all of the spirituality variables except those in the *Religious/Spiritual Struggle Scale*. The specific variables included in each scale can be found in Tables 1-6.

Qualitative strand.

The quantitative survey was followed by qualitative interviews in the late spring of 2013. Quantitative results were analyzed and students were invited to interview based upon their quantitative scores in combination with their demographic information. Interviews were conducted with six students who experienced a high degree of spiritual growth and five students who experienced a neutral to negative degree of spiritual growth to determine if there were any

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differences in the individual service-learning experiences that may have related to whether spiritual growth occurred.

An interview protocol was utilized that included a list of open-ended questions consistent with the research questions. Interviews explored the role that each of the following may have played in spiritual growth: group reflection discussions, written reflection, relationships, cognitive dissonance, a high quality service experience, and connection between coursework and service experience. Interviewees were also asked about demographic characteristics that might have influenced spiritual growth including: prior community service and service-learning experience, religious background, and family background.

Limitations

The unique aspects of Boston College and the PULSE Program may limit generalizability of findings to other service-learning experiences. Specifically, PULSE is distinct from other service-learning programs in that it is a full academic year, it includes more hours of weekly service (10-12) than is typical and academic content is focused on the disciplines of philosophy and theology. Boston College is unique from other higher education institutions in that it is a highly selective, Catholic higher education institution. Each of these aspects of the PULSE Program and Boston College may have impacted the way in which spiritual growth occurred and could limit the possibilities for results to be replicated in other contexts.

Results

Did Spiritual Growth Occur among PULSE Participants?

The evidence overwhelmingly points towards spiritual growth having occurred during the time students were enrolled in PULSE. In the quantitative survey, 79% of students agreed with the statement, “I grew spiritually as a result of my PULSE experience.” Similarly, a comparison of pre-survey and post-survey responses indicates that 77.6% of students had a positive change

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in *Spiritual Orientation* during this time frame. Analyzing the mean responses for each of the individual spirituality variables similarly demonstrates that spiritual growth occurred as all means changed in the positive direction and 43 of 54 of these changes were statistically significant (See Tables 1-6). Similarly, mean responses for all of the spirituality scales changed in the positive direction and all were statistically significant (see Table 7).

Table 1

Means, Standard Deviations, and Effect Size of Pre-Survey/Post-Survey Responses to Spiritual Identification Variables (N=272)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
Being on a spiritual quest ^a	1.87	.688	2.1	.712	<.001	.33
Integrating spirituality into my life ^b	2.60	.971	2.92	.971	<.001	.33
Believing in the sacredness of life ^a	2.33	.649	2.51	.583	<.001	.29
People can reach a higher spiritual plane of consciousness through meditation or prayer ^c	2.97	.758	3.15	.714	<.001	.24
Seeking out opportunities to grow spiritually ^b	2.81	.927	3.02	.901	<.001	.23
Having an interest in spirituality ^a	2.19	.606	2.30	.610	.001	.18
Having a spiritual experience while: Engaging in athletics ^d	1.68	.763	1.82	.805	.003	.18
Participating in a musical or artistic performance ^d	1.62	.775	1.73	.801	.038	.14
meditating ^d	1.81	.802	1.89	.773	.077	.10
Viewing a great work of art ^d	1.68	.690	1.75	.697	.127	.10
Listening to beautiful music ^d	2.14	.782	2.21	.732	.133	.09
Witnessing the beauty and harmony of nature ^d	2.35	.713	2.42	.698	.176	.10

^aExtent to which the variable describes the respondent. 1=Not at all 2=To some Extent 3=To a great extent

^bImportance to the respondent. 1=Not important 2=Somewhat important 3=Very important 4=Essential

^cLevel of agreement with the statement. 1=Strongly disagree 2=Disagree somewhat 3=Agree somewhat 4=Agree strongly

^dFrequency of Occurrence. 1=Not at all or Not applicable 2=Occasionally 3=Frequently

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Table 2

Means, Standard Deviations, and Effect Size of Pre-Survey/Post-Survey Responses to Spiritual Quest Variables (N=272)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
Having discussions about the meaning of life with my friends ^a	2.17	.644	2.35	.600	<.001	.29
Seeking beauty in my life ^b	3.21	.814	3.40	.748	<.001	.24
Attaining wisdom ^b	3.35	.665	3.53	.601	<.001	.28
Developing a meaningful philosophy of life ^b	3.01	.794	3.32	.712	<.001	.41
Becoming a more loving person ^b	3.54	.648	3.75	.476	<.001	.37
Finding answers to the mysteries of life ^b	2.87	.891	3.06	.868	.001	.22
Attaining inner harmony ^b	3.20	.808	3.36	.769	.001	.20
Searching for meaning/purpose in life ^a	2.45	.530	2.50	.550	.168	.09
Close friends are searching for meaning/purpose in life ^c	2.47	.763	2.48	.671	.875	.01

^aExtent to which the respondent engages in the activity. 1=Not at all 2=To some Extent 3=To a great extent

^bImportance to the respondent. 1=Not important 2=Somewhat important 3=Very important 4=Essential

^c1=None 2=Some 3=Most 4=All

Table 3

Means, Standard Deviations, and Effect Size of Pre-Survey/Post-Survey Responses to Interconnectedness of Humanity Variables (N=272)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
Influencing the political structure ^a	2.29	.826	2.71	.884	<.001	.49
Becoming a community leader ^a	2.94	.831	3.27	.810	<.001	.40
Love is at the root of all the great religions ^b	3.22	.804	3.43	.761	<.001	.27
Trying to change things that are unfair in the world ^c	2.29	.553	2.46	.521	<.001	.32
Having an interest in different religious traditions ^d	1.97	.616	2.15	.616	<.001	.29
Feeling a strong connection to all humanity ^d	2.33	.648	2.51	.563	<.001	.30
All life is interconnected ^b	3.41	.610	3.57	.591	<.001	.27
Improving the human condition ^a	3.32	.711	3.56	.605	<.001	.36
Believing in the goodness of all people ^d	2.53	.582	2.65	.516	<.001	.22
Influencing social values ^a	2.98	.766	3.29	.739	<.001	.41
Helping to promote racial understanding ^a	3.08	.811	3.35	.744	<.001	.35
Reducing pain and suffering in the	3.24	.741	3.51	.619	<.001	.40

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world ^a						
Helping others who are in difficulty ^a	3.54	.624	3.69	.500	<.001	.27
Improving my understanding of other cultures and countries ^a	3.25	.791	3.47	.659	<.001	.30
Becoming involved in programs to clean up the environment ^a	2.52	.824	2.79	.880	<.001	.32
Most people can grow spiritually without being religious ^b	3.24	.777	3.40	.716	.001	.21
We are all spiritual beings ^b	3.05	.717	3.13	.750	.100	.11
Nonreligious people can lead lives that are just as moral as those of religious believers ^b	3.64	.618	3.68	.541	.230	.07
Accepting others as they are ^c	2.70	.479	2.72	.466	.602	.04

^aImportance to the respondent. 1=Not important 2=Somewhat important 3=Very important 4=Essential
^bLevel of agreement with the statement. 1=Strongly disagree 2=Disagree somewhat 3=Agree somewhat 4=Agree strongly
^cExtent to which the respondent engages in the activity. 1=Not at all 2=To some Extent 3=To a great extent
^dExtent to which the variable describes the respondent. 1=Not at all 2=To some Extent 3=To a great extent

Table 4

Means, Standard Deviations, and Effect Size of Pre-Survey/Post-Survey Response to Living One's Philosophy of Life with Integrity Variables (N=272)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
My spiritual/religious beliefs: Provide me with strength, support and guidance ^a	2.84	.960	3.04	.942	<.001	.21
Lie behind my whole approach to life ^a	2.55	.958	2.75	.982	<.001	.21
Help to define the goals I set for myself ^a	2.72	.959	2.92	.975	<.001	.21
Have helped me develop my identity ^a	2.75	.950	2.93	.983	<.001	.19

^aLevel of agreement with the statement. 1=Strongly disagree 2=Disagree somewhat 3=Agree somewhat 4=Agree strongly

Table 5

Means, Standard Deviations, and Effect Size of Pre-Survey/Post-Survey Responses to Relationship with God Variables (N=272)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
I gain spiritual strength by trusting in a Higher Power ^a	2.84	.977	2.97	1.055	.005	.13
Prayed ^b	1.99	.735	2.08	.714	.009	.12
Desiring a sense of connection with God/a Higher Power ^c	2.04	.729	2.10	.747	.100	.08

^aLevel of agreement with the statement. 1=Strongly disagree 2=Disagree somewhat 3=Agree somewhat 4=Agree strongly

^bFrequency of Occurrence. 1=Not at all or Not applicable 2=Occasionally 3=Frequently

^cExtent to which the variable describes the respondent. 1=Not at all 2=To some Extent 3=To a great extent

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Table 6

Means, Standard Deviations, and Effect Size of Pre-Survey/Post-Survey Responses to Religious/Spiritual Struggle Variables (N=272)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
Struggled to understand evil, suffering, and death ^a	1.99	.637	2.31	.594	<.001	.52
Feeling unsettled about spiritual and religious matters ^a	1.89	.671	2.09	.684	<.001	.30
Feeling disillusioned with my religious upbringing ^b	1.55	.670	1.72	.732	.001	.24
Disagreed with [my] family about religious matters ^a	1.52	.665	1.66	.732	.002	.20
Felt angry with God ^a	1.50	.605	1.61	.633	.010	.18
Questioned [my] religious/spiritual beliefs ^a	1.87	.717	1.97	.733	.024	.14
Felt distant from God ^a	1.83	.665	1.89	.671	.166	.09

^aFrequency of occurrence since entering college 1=Not at all 2=Occasionally 3=Frequently

^bExtent to which the variable describes the respondent. 1=Not at all 2=To some Extent 3=To a great extent

Table 7

Means, Standard Deviations, and Effect Size of Pre-Survey/Post-Survey Responses to all Variables in a Specific Spirituality Scale (N=272)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
Spiritual Identification	26.05	5.58	27.82	5.44	<.001	.32
Spiritual Quest	26.26	4.20	27.74	3.99	<.001	.36
Interconnectedness of Humanity	55.56	7.17	59.35	6.91	<.001	.54
Living Phil. of Life with Integrity	10.85	3.51	11.64	3.62	<.001	.22
Relationship with God	6.87	2.16	7.15	2.22	<.001	.13
Religious/Spiritual Struggle	12.16	2.88	13.25	3.14	<.001	.36

Interviews also provided abundant evidence that students grew spiritually as a result of their PULSE experience. Interviewees (even those whose survey scores indicated a lack of spiritual growth) consistently described how PULSE caused them to deepen their commitment to service, deepen the connection they feel towards humanity, and consider what they believe and why they believe it. Additionally, the “high spiritual growth” interviewees were also deeply engaged in a process of inner reflection to understand oneself and one’s meaning and purpose in

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life; were engaged with the question of how to live their philosophy of life with integrity and authenticity; and were facing religious/spiritual struggle as a result of their PULSE experience. The one dimension of spirituality that was not consistently evident among interviewees was a desire to build a deeper relationship with God.

The following quotes from interviewees illustrate these aspects of spiritual growth. The first quote depicts being engaged in a dynamic process of inner reflection to better understand oneself and the meaning and purpose of one's life. In the second quote, the student describes an increased desire to live one's philosophy of life with integrity and authenticity. The third quote demonstrates a student seeing the interconnectedness of humanity and having a related desire to be of service. In the final quote, a student describes facing religious and spiritual struggle.

PULSE has definitely started me out on this conquest to find out who I am.

I'm more aware of how each decision I make starts to define who I am...In terms of how I think and how I rationalize certain things, that has definitely changed and it's a more of an active approach

[I feel] so much more connected to the community and the world now...now I know that we're all kind of in this together, and that has kind of changed how I see myself. My decisions are not only about whether or not it's good for me but also whether or not it's good for everybody.

[PULSE] has made me question everything about God and my religion. I like that it's challenging my faith but at the same time it can be bothersome for me because I don't know what to think anymore.

How Might Spiritual Growth Be Occurring?

In an effort to answer the broader question of how spiritual growth might be occurring during the service-learning experience, this study considers what role challenge and support may have played in spiritual growth and which aspects of the service-learning experience were most closely related to the occurrence of spiritual growth.

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Consistent with Sanford's (1962; 1966; 1967) theory of student development, the qualitative and quantitative aspects of this study point towards both challenge and support relating to spiritual growth. In the quantitative study, the *Total Challenge* and *Total Support* scales were statistically significant predictors of change in *Spiritual Orientation* after controlling for demographic variables (See Tables 8 and 9).

Table 8

Hierarchical Multiple Regression Predicting Increase in Spiritual Orientation by Total Challenge

Variable	Model 1	Model 2
Pre-Test	.644***	.576***
Gender	.085	.029
School	.049	.028
Prior Service-learning	-.004	.013
Baptist	-.081	-.053
Buddhist	.039	.028
Eastern Orthodox	.034	.033
Episcopalian	.001	.026
Jewish	.000	-.004
Lutheran	.018	.037
Methodist	.002	.040
Muslim	.095	.058
Nondenominational	-.046	-.067
Presbyterian	.120*	.136*
Roman Catholic	.203*	.193*
Unitarian/Universalist	.032	.035
United Church of Christ	.040	.039
None	-.024	-.025
African American/Black	.144*	.129*
Asian American/Asian	.109	.098
Native Hawaiian/Pacific Islander	.042	.011
Mexican American/Chicano	-.029	-.042
Puerto Rican	.013	.048
Other Latino	.053	.012
White/Caucasian	-.016	-.037
Middle Eastern	.036	.023
Total Challenge		.272***

Note. Numbers are Betas. *** $p < .001$, two-tailed ** $p < .01$, two-tailed * $p < .05$, two-tailed

Table 9

Hierarchical Multiple Regression Predicting Increase in Spiritual Orientation by Total Support

Variable	Model 1	Model 2
Pre-Test	.641***	.592***
Gender	.080	.055
School	.049	.044
Prior Service-learning	.008	.022
Baptist	-.082	-.029
Buddhist	.039	.038

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Eastern Orthodox	.033	.033
Episcopalian	-.005	.024
Jewish	-.002	-.043
Lutheran	.018	.027
Methodist	.001	.038
Muslim	.093	.061
Nondenominational	-.046	-.057
Presbyterian	.121*	.127*
Roman Catholic	.204*	.169
Unitarian/Universalist	.031	.014
United Church of Christ	.039	.018
None	-.017	-.033
African American/Black	.144*	.107
Asian American/Asian	.100	.084
Native Hawaiian/Pacific Islander	.042	.020
Mexican American/Chicano	-.031	-.053
Puerto Rican	.014	.064
Other Latino	.050	.006
White/Caucasian	-.014	-.055
Middle Eastern	.034	.020
Total Support		.260***

Note. Numbers are Betas. *** p < .001, two-tailed ** p < .01, two-tailed * p < .05, two-tailed

Similarly, the qualitative results point towards the importance of both challenge and support in facilitating spiritual growth. Students with lower levels of spiritual growth simply were not challenged by the placement experience or the classroom experience to the same degree as students that exhibited higher levels of spiritual growth. While supportive relationships seemed to be readily available to all interviewees and were mentioned as important to all, the students with higher levels of spiritual growth also discussed the benefit of finding support through the integration of the classroom experience with the placement experience. In other words, the integration of class and service experiences provided a framework that helped students to make sense of the challenges they were facing and, therefore, played a role in enabling healthy spiritual growth to occur.

Digging further into the results provides additional insights about the specific aspects of the PULSE experience that might relate to spiritual growth. Qualitative results point towards the importance of building relationships at placements that enabled the possibility for students to witness and hear stories about how suffering and injustice impacted individuals they had grown

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to care about. This led students' eyes to be "opened" to the ways in which their prior assumptions/perspectives were inconsistent with what they were observing in the community.

At the same time, class experiences were also exposing students to a new way of viewing the world through: hearing about the placement experiences and diverse perspectives of other students; class readings that presented new perspectives; and professors asking students to consider what they think and why through class discussions and assignments. Being emotionally overwhelmed by the challenge to think about these complex questions and view the world from a new perspective drove students towards inner reflection in an effort to make sense of the experience.

Quantitative results point towards the *Classroom Experience*, an *Eye Opening Experience*, *Witnessing Injustice*, and *Support of Peers in Class* as being statistically significant predictors of increased *Spiritual Orientation* in at least one model when adding in each PULSE component one at a time through hierarchical multiple regression. *Class Experience* and *Witnessing Injustice* were the strongest predictors among these as both remained significant when controlling for these other PULSE components as illustrated in Table 10.

Table 10

Hierarchical Multiple Regression Predicting Increase in Spiritual Orientation by PULSE Components

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Pre-Test	.644***	.610***	.609***	.592***	.578***	.559***
Gender	.085	.060	.057	.040	.025	.027
School	.049	.043	.045	.039	.042	.029
Prior Service-learning	-.004	.000	.007	.014	.015	.011
Baptist	-.082	-.065	-.054	-.037	-.050	-.050
Buddhist	.039	.034	.035	.031	.042	.033
Eastern Orthodox	.034	.045	.041	.042	.035	.034
Episcopalian	.001	.026	.028	.033	.034	.041
Jewish	.000	-.012	-.017	-.013	-.001	-.025
Lutheran	.018	.018	.018	.022	.021	.037
Methodist	.002	.007	.016	.028	.046	.049
Muslim	.095	.079	.072	.064	.054	.049
Nondenominational	-.046	-.054	-.052	-.064	-.053	-.066
Presbyterian	.120*	.113*	.107	.119*	.134*	.139*
Roman Catholic	.203*	.199*	.184*	.193*	.212*	.182*
Unitarian/Universalist	.032	.020	.022	.028	.025	.016

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United Church of Christ	.041	.031	.026	.036	.040	.025
None	-.024	-.056	-.058	-.041	-.037	-.047
African American/Black	.145*	.110	.108	.109	.110	.105
Asian American/Asian	.109	.089	.087	.093	.092	.081
Native Hawaiian/Pacific Islander	.043	.032	.029	.022	.014	.006
Mexican American/Chicano	-.029	-.046	-.046	-.042	-.044	-.059
Puerto Rican	.013	.033	.036	.039	.050	.078
Other Latino	.053	.021	.016	.012	.007	-.009
White/Caucasian	-.016	-.092	-.084	-.078	-.096	-.087
Middle Eastern	.036	.023	.023	.020	.024	.017
Peer Support		.164***	.142**	.123*	.108*	.067
Relationships at Placements			.089	.056	.031	.010
Eye Opening Experience				.124*	.073	.006
Witnessing Injustice					.154**	.135*
Class Experience						.196***

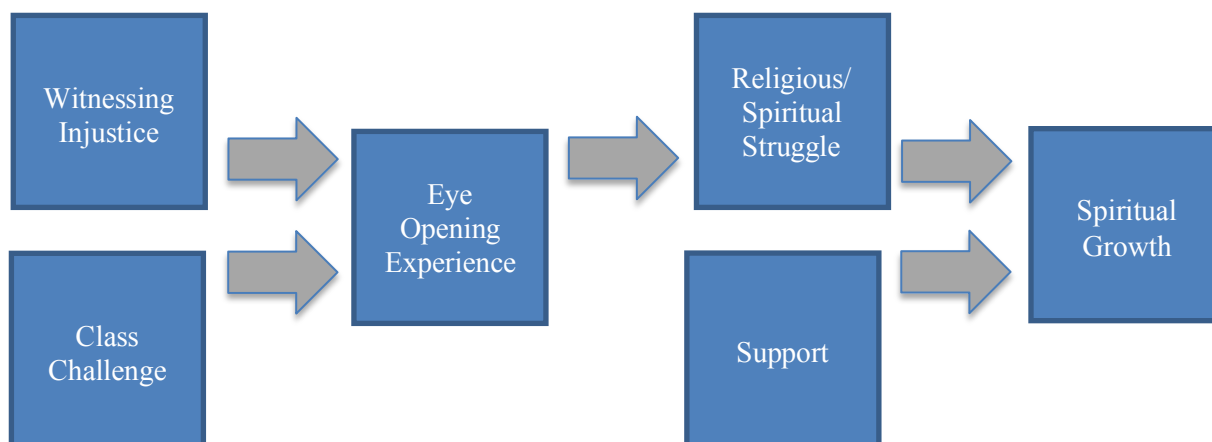
Note. Numbers are Betas. *** p < .001, two-tailed ** p < .01, two-tailed * p < .05, two-tailed

Discussion

Integrating the quantitative and qualitative results of this study with Sanford's (1962; 1966; 1967) theory of challenge and support, theories of spiritual development (Fowler, 1981; Daloz Parks, 2000), the results of empirical studies investigating how spiritual growth occurs, and the results of prior studies investigating how student development occurs through service-learning leads to the development of the following conceptual model (Figure 1) describing how spiritual development might be occurring during the PULSE service-learning experience.

Figure 1

Conceptualization of How Spiritual Growth May Be Occurring through PULSE



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In this proposed model, the process of spiritual growth begins when a student witnesses how injustice impacts the lives of individuals he or she has gotten to know at his or her service site. At the same time a student is being challenged by observing social justice issues at the service site, he or she is simultaneously having his or her assumptions about the world challenged in class. The combination of these challenges leads a student's eyes to be "opened" to the idea that the world is not exactly what he or she believed it to be in a very fundamental way. People living in poverty may have been previously known only through stereotypes—stereotypes that blame the poor for their problems and perpetuate the belief that the poor are fundamentally inferior to those who have been successful in traditional terms. During their PULSE experience, however, students can no longer hold onto these stereotypes and are humbled to see how much they have to learn from those they may have previously believed to be inferior or deficient. As a result, students and community members have the potential to form reciprocal relationships that are mutually beneficial. The PULSE student is no longer the one who serves, but is the one being served. This eye opening experience is emotionally overwhelming and can lead to religious/spiritual struggle as a student questions the certainty of his or her beliefs around suffering, spirituality, religion, and God. Throughout this struggle, the class framework and supportive relationships help a struggling student to make sense of what he or she is experiencing in a manner that enables healthy spiritual growth to occur.

Multiple regression analyses demonstrate that each component of this conceptual model is a statistically significant predictor of the following component in the model (see Tables A2-A4) and that mediation is occurring in the proposed manner (See Tables A5-A7). In other words, *Witnessing Injustice* and *Class Challenge* (a sub-set of the *Class Experience Scale*) are having an indirect effect on *Religious/Spiritual Struggle* that is mediated through an *Eye*

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Opening Experience. An *Eye Opening Experience* is having an indirect effect on spiritual growth (as measured by change in *Spiritual Orientation*) through *Religious/Spiritual Struggle*.

The following quotes from study participants illustrate the concepts in this model. The first quote demonstrates a students' experience of witnessing injustice. The second quote illustrates how an interviewee was challenged in class. In the third quote, a student describes how PULSE was eye opening. The fourth quote demonstrates a student receiving support from peers while undergoing spiritual struggle. In the final quote, a student describes the dynamic interplay between all aspects of the service-learning experience that led to spiritual growth.

She had glaucoma and lost all vision in one of her eyes. When the other one started to go as well, she came to the United States to get better medical care...now she's dealing with 5% total vision. She wasn't able to work, so she became homeless with her daughter. She's struggling to make ends meet and to find a job that she can actually do. If she had her vision she probably wouldn't be homeless. Something that's totally out of her control is completely affecting not only her life but her child's life as well.

A lot of the reflections we did, like our written reflections and even discussions would bring up things I had never really thought about before.

I was able to see the different ways that kids grow up in this country compared to my own town and childhood and that really just took me back. It was really interesting and very eye opening.

Our weekly discussions really allowed me to open up and question a lot of things that relate to my spirituality. I also feel as though becoming so close as a class and with [my professor] has created a bond that I cannot help but feel as somewhat spiritual and good.

The placement itself, with class in the background, helped me grow [spiritually] the most. I do not think that I would have learned as much if I did one without the other, and I have grown a great amount because of my interactions which were made meaningful due to my coursework and discussions.

Implications

Overall, this study provides additional evidence that service-learning is a pedagogical tool through which spiritual development can be fostered among undergraduates. This is especially important given the disparity between student desire for spiritual growth and the

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opportunity for spiritual growth to occur in the classroom context (Astin et al., 2004).

Furthermore, integrating opportunities for spiritual growth in the classroom has the potential to lead to other personal and societal benefits found to be associated with spirituality in prior studies. (Astin, et al., 2011b; Brandenberger & Bowman, 2013; Kuh & Gonyea, 2006; Lee, et al., 2007; Nelms, et al., 2007; Park & Millora, 2010; Seitz, 2009; Stewart, 2001; VonDras, et al., 2007; Walker & Dixon, 2002).

From the practitioner's perspective, study findings point towards important aspects of the service-learning experience that should be incorporated to maximize the potential for spiritual development to occur. First, it is crucial to develop community partnerships that will enable students to interact with and build caring, reciprocal relationships with individuals facing injustice so that the possibility to hear stories about or witness suffering and injustice exists. It is through these stories and observations that students' preconceived notions and assumptions about the world are challenged. In this eye opening experience students realize that stereotypes and preconceived notions of people living in poverty are not entirely accurate and, therefore, their prior worldview is no longer sustainable. The resulting disequilibrium opens up the possibility for growth.

At the same time that students' assumptions are being challenged through their service experience, class experiences should also challenge students to think critically about their assumptions and beliefs. This can be facilitated by hearing diverse perspectives in class discussions or class readings and asking students to consider what they believe and why in class discussions and assignments.

As students face the disequilibrium associated with having their eyes opened to the fact that their prior perspectives and assumptions may not have been accurate, it is important that students are given opportunities for support through integration and support through

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relationships. The effective integration of classroom material and service can help students to make sense of their challenging experiences and process the disequilibrium they are feeling. As demonstrated in previous research, this important integration can occur in class discussions, small group reflection sessions, journaling, and class reading and writing assignments (Astin et al., 2000; Eyler & Giles, 1999; Hatcher et al., 2004). Students also need the opportunity to receive support through relationships. Relationships with peers and faculty members were found to be especially pertinent in this study as they have been in prior studies (Astin et al., 2000; Eyler & Giles, 1999; Kiely, 2005; Radecke, 2007).

Table A1

Descriptive Statistics of Independent Variables/PULSE Components (N=272)

Variable	n	M	SD
I felt supported by my PULSE professor.	272	3.81	.481
Class journaling / reflective writing challenged me to think critically about my assumptions, values, and/or beliefs.	270	3.47	.672
There was a diversity of perspectives expressed in my PULSE class and discussion group.	270	3.50	.644
The problems that caused people at my placement to need social services were frequently the result of circumstances beyond their control.	271	3.52	.595
I felt supported by other students at my placement.	270	3.49	.740
This course exposed me to diverse perspectives that did not fit with my prior opinions and assumptions.	270	3.50	.644
I built caring relationships with those served at my placement.	271	3.61	.700
Class assignments challenged me to think critically about my assumptions, values, and/or beliefs.	271	3.57	.604
Social problems are more complex to solve than I used to think.	270	3.65	.621
Those served at my PULSE placement faced unfairness in life.	270	3.55	.594
I felt supported by others students in my class.	272	3.54	.587
Class discussions / reflection groups enabled me to connect what I was observing in my placement with what I was studying in class.	271	3.63	.631
I felt supported by my PULSE supervisor(s).	271	3.49	.838
The class discussions/reflection groups challenged me to think critically about my assumptions, values, and/or beliefs.	269	3.57	.598
PULSE exposed me to diverse viewpoints that challenged me to think differently.	271	3.67	.502
My PULSE Placement should remain a placement in the future.	223	3.68	.666
A supportive community formed among those in my PULSE discussion group.	270	3.44	.664
The class readings helped me to make sense of what I was observing in my placement.	270	3.36	.695
I observed unfair human suffering at my PULSE placement.	271	3.21	.785
The service component of this course was well integrated with the academic coursework.	271	3.57	.640
My PULSE placement experience challenged me to think critically about my assumptions, values, and/or beliefs.	270	3.60	.575
I felt supported by my PULSE Council Member.	271	3.54	.618
I heard perspectives expressed at my PULSE placement that were different from those I typically hear.	270	3.43	.679

Note. Level of agreement with the statement measured on the following scale:

1=Strongly disagree 2=Disagree somewhat 3=Agree somewhat 4=Agree strongly

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Table A2

Regression Analysis Summary for Class Challenge and Witnessing Injustice Predicting an Eye Opening Experience

Predictors	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.491	.863		7.523	.000
Class Challenge	.668	.069	.487	9.742	.000
Witnessing Injustice Scale	.416	.072	.291	5.811	.000

Table A3

Regression Analysis Summary for an Eye Opening Experience Predicting Change in the Religious/Spiritual Struggle Scale

Predictors	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-5.934	1.389		-4.272	.000
Eye Opening Experience Scale	.394	.077	.298	5.094	.000

Table A4

Regression Analysis Summary for Change in Religious/Spiritual Struggle and Total Support Predicting Change in Spiritual Orientation

Predictors	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-14.885	6.427		-2.316	.021
Change in Religious/Spiritual Struggle Scale	1.267	.261	.282	4.863	.000
Total Support Scale	.685	.202	.196	3.381	.001

Table A5

Regression Analysis Summary for Class Challenge and Witnessing Injustice Predicting Change in Religious/Spiritual Struggle

Predictors	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-3.892	1.467		-2.653	.008
Class Challenge	.195	.116	.107	1.688	.093
Witnessing Injustice Scale	.283	.121	.148	2.342	.020

Table A6

Regression Analysis Summary for Witnessing Injustice, Class Challenge, and an Eye Opening Experience Predicting Change in Religious/Spiritual Struggle

Predictors	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-6.354	1.573		-4.041	.000
Witnessing Injustice Scale	.101	.126	.053	.800	.424
Class Challenge	-.066	.132	-.036	-.502	.616
Eye Opening Scale	.399	.102	.300	3.900	.000

Table A7

Regression Analysis Summary for Total Support, Change in Religious/Spiritual Struggle, an Eye Opening Experience, Witnessing Injustice, and Class Challenge Predicting Change in Spiritual Orientation

Predictors	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-14.284	7.591		-1.882	.061
Total Support Scale	.589	.299	.170	1.972	.050
Change in Religious/Spiritual Struggle Scale	1.261	.275	.279	4.583	.000
Eye Opening Experience Scale	-.416	.475	-.069	-.877	.382
Witnessing Injustice Scale	.432	.581	.050	.743	.458
Class Challenge	.510	.698	.062	.730	.466

References

- American Council on Education (1937). *The student personnel point of view*. Retrieved from http://www.naspa.org/pubs/files/StudAff_1937.pdf
- Astin, A., Astin, H., & Lindholm, J. (2004). *Spirituality in higher education: A national study of college students' search for meaning and purpose summary of selected findings (2000-2003)*. Los Angeles: University of California Los Angeles, Higher Education Research Institute. Retrieved from <http://www.heri.ucla.edu/publications-brp.php>
- Astin, A., Astin, H., & Lindholm, J. (2011a). Assessing students' spiritual and religious qualities. *Journal of College Student Development*, 52(1), 39-61.
- Astin, A., Astin, H., & Lindholm, J. (2011b). *Cultivating the spirit: How college can enhance students' inner lives*. San Francisco, CA: Jossey-Bass.
- Brandenberger, J.W., & Bowman, N.A. (2013). From faith to compassion? Reciprocal influences of spirituality, religious commitment, and prosocial development during college. In A. Bryant Rockenbach & M.J. Mayhew (Eds.), *Spirituality in college students' lives: Translating research into practice*. (pp. 121-137). New York, NY: Routledge.
- Braskamp, L.A., Trautvetter, L.C., & Ward, K. (2006). *Putting students first: How colleges develop students purposefully*. Bolton, MA: Anker Publishing Company.
- Bryant, A. N., & Astin, H. S. (2008). The correlates of spiritual struggle during the college years. *Journal of Higher Education*, 79(1), 1-27.
- Cartwright, K. B. (2001). Cognitive developmental theory and spiritual development. *Journal of Adult Development*, 8(4), 213.
- Chenot, D., & Kim, H. (2013). Development among adolescents and young adults: Longitudinal linkages between religion, spirituality, and social justice. In A. Bryant Rockenbach & M.J. Mayhew (Eds.), *Spirituality in college students' lives: Translating research into practice*. (pp. 138-152). New York, NY: Routledge.
- Cherry, C., De Berg, B., & Porterfield, A. (2001). *Religion on campus*. Chapel Hill, NC: The University of North Carolina Press.
- Chickering, A.W., Dalton, J.C., & Stamm, L. (2006). *Encouraging authenticity and spirituality in higher education*. San Francisco, CA: Jossey-Bass.
- Creswell, J. & Plano Clark, V. (2011). *Designing and conducting mixed methods research*. 2nd edition. Thousand Oaks, CA: Sage Publications.

- Daloz Parks, S. (2000). *Big questions, worthy dreams: mentoring young adults in their search for meaning, purpose, and faith*. San Francisco, CA: Jossey-Bass.
- Eyler, J., & Giles, D., Jr. (1999). *Where's the learning in service-learning?* San Francisco, CA: Jossey-Bass.
- Eyler, J., Giles, D., Jr., Stenson, C., & Gray, C. (2001). *At a glance: What we know about the effects of service-learning on college students, faculty, institutions and communities, 1993-2000* (3rd ed.). Corporation for National Service. Retrieved from <http://servicelearning.org/filemanager/download/aag.pdf>
- Faigin, C.A. (2013). Informing effective psychospiritual interventions for college students: Identifying mediators in the relationship between spiritual struggles and substance use. In A. Bryant Rockenbach & M.J. Mayhew (Eds.), *Spirituality in college students' lives: Translating research into practice*. (pp. 170-187). New York, NY: Routledge.
- Fenzel, L. M., & Peyrot, M. (2005). Comparing college community participation and future service behaviors and attitudes. *Michigan Journal of Community Service-learning*, 12(1), 23-32.
- Fowler, J. (1981). *Stages of faith: The psychology of human development and the quest for meaning*. San Francisco, CA: Harper San Francisco.
- Hatcher, J., Bringle, R., & Muthiah, R. (2004). Designing effective reflection: What matters to service-learning? *Michigan Journal of Community Service-learning*, 11(1), 38-46.
- Holcomb, G. L., & Nonneman, A. J. (2004). Faithful change: Exploring and assessing faith development in Christian liberal arts undergraduates. *New Directions for Institutional Research*, (122), 93-103.
- Kiely, R. (2005). A transformative learning model for service-learning: A longitudinal case study. *Michigan Journal of Community Service-learning*, 12(1), 5-22.
- Kiessling, M. K. (2010). Spirituality as a component of holistic student development: Perspectives and practices of student affairs professionals. *Journal of College and Character*, 11(3), 1-10.
- Kuh, G.D., & Gonyea, R.M. (2006). Spirituality, liberal learning, and college student engagement. *Liberal Education*, 92, 40-47.
- Lee, S., Puig, A., & Clark, M. (2007). The role of religiosity on postsecondary degree attainment. *Counseling and Values*, 52(1), 25.
- Love, P. & Talbot, D. (1999). Defining spiritual development: A missing consideration for student affairs. *NASPA Journal*, 37, 361-376.

- Lovik, E. (2010). *The impact of organizational features and student experiences on spiritual development during the first year of college*. (Unpublished Doctoral Dissertation). The Pennsylvania State University.
- Ma, S. Y. (2003). The Christian college experience and the development of spirituality among students. *Christian Higher Education*, 2, 321-339.
- Nelms, L., Hutchins, E., Hutchins, D., & Pursley, R. (2007). Spirituality and the health of college students. *Journal of Religion & Health*, 46(2), 249-265.
- Park, J. J., & Millora, M. (2010). Psychological well-being for white, black, Latino/a, and Asian American students: Considering spirituality & religion. *Journal of Student Affairs Research and Practice*, 47(4), 445-461.
- Radecke, M. W. (2007). Service-learning and faith formation. *Journal of College and Character*, 8(5), 1-28.
- Rendon, L.I. (2009). *Sentipensante (sensing/thinking) pedagogy: Educating for wholeness, social justice and liberation*. Sterling, VA: Stylus Publishing.
- Roehlkepartain, E.C., Benson, P.L., Scales, P.C., Kimball, L., & Ebstye-King, P. (2008). *With their own voices: A global exploration of how today's young people experience and think about spiritual development*. Minneapolis, MN: Center for Spiritual Development in Childhood and Adolescence.
- Sanford, N. (1962). Developmental status of the entering freshman. In N. Sanford (Ed.), *The American college: A psychological and social interpretation of higher learning*. New York: John Wiley & Sons.
- Sanford, N. (1966). *Self & society: Social change and individual development*. New York, NY: Atherton Press.
- Sanford, N. (1967). *Where colleges fail: A study of the student as a person*. San Francisco, CA: Jossey-Bass.
- Seitz, D. (2009). *Integrating contemplative and student-centered education: A synergistic approach to deep learning*. (Unpublished doctoral dissertation). University of Massachusetts, Boston.
- Stewart, C. (2001). The influence of spirituality on substance use of college students. *Journal of Drug Education*, 31(4), 343-351.
- Tisdell, E. J. (2003). *Exploring spirituality and culture in adult and higher education*. The Jossey-Bass higher and adult education series. San Francisco, CA: Jossey-Bass.

- VonDras, D. D., Schmitt, R. R., & Marx, D. (2007). Associations between aspects of spiritual well-being, alcohol use, and related social-cognitions in female college students. *Journal of Religion & Health*, 46(4), 500-515.
- Walker, K. L., & Dixon, V. (2002). Spirituality and academic performance among African American college students. *Journal of Black Psychology*, 28(2), 107-21.
- Welch, M. & Koth, K. (2013). A Meta-theory of the spirituality of service-learning in higher education. *Journal of College Student Development*.
- Yeh, T.L. (2010). Service-learning and persistence of low-income, first-generation college students: An exploratory study. *Michigan Journal of Community Service-learning*, 50-65

APPENDIX 3: 2016-2017 STUDENT SURVEY MATERIAL (Indirect Evidence)

PULSE Pre-Survey 2016-2017

SurveyMonkey

Q6 Beside each statement below, indicate how strongly you agree or disagree with the statement according to the following scale:

Answered: 354 Skipped: 13

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Community service is something very important to me.	1.41% 5	0.85% 3	7.06% 25	40.11% 142	50.56% 179	354	4.38
I have had experience in social service settings.	2.54% 9	4.52% 16	7.06% 25	41.81% 148	44.07% 156	354	4.20
I have an interest in philosophy.	4.26% 15	14.49% 51	32.95% 116	36.36% 128	11.93% 42	352	3.37
I intend to take more philosophy classes after PULSE.	14.20% 50	30.11% 106	41.76% 147	9.94% 35	3.98% 14	352	2.59
I have an interest in theology.	8.22% 29	17.56% 62	41.08% 145	27.20% 96	5.95% 21	353	3.05
I intend to take more theology classes after PULSE.	14.73% 52	33.71% 119	38.81% 137	9.92% 35	2.83% 10	353	2.52
I probably would not take philosophy or theology if it was not required by Boston College.	7.91% 28	27.40% 97	23.45% 83	29.38% 104	11.86% 42	354	3.10
I feel integrated into the Boston College community.	1.13% 4	7.93% 28	17.56% 62	53.82% 190	19.55% 69	353	3.83
I have an understanding of social justice.	1.13% 4	4.80% 17	15.82% 56	63.84% 226	14.41% 51	354	3.86
I am knowledgeable about the complexities of urban problems in the U.S.	0.57% 2	11.90% 42	25.50% 90	49.29% 174	12.75% 45	353	3.62
I have an idea of how to work for social change.	1.13% 4	12.99% 46	26.84% 95	48.87% 173	10.17% 36	354	3.54
I am comfortable with people from diverse backgrounds.	0.28% 1	1.98% 7	4.82% 17	52.97% 187	39.94% 141	353	4.30
I am quite certain about my career goals.	6.52% 23	21.25% 75	26.63% 94	30.03% 106	15.58% 55	353	3.27
I have considered changing my major.	7.34% 26	22.32% 79	25.14% 89	33.62% 119	11.58% 41	354	3.20
I have first-hand experience in urban areas.	2.82% 10	17.23% 61	18.64% 66	41.24% 146	20.06% 71	354	3.58
I have an awareness of stereotypes.	0.85% 3	0.28% 1	2.83% 10	59.77% 211	36.26% 128	353	4.30
I think favorably of my overall B.C. experience.	1.41% 5	2.82% 10	11.86% 42	48.31% 171	35.59% 126	354	4.14

Q3 Please indicate how strongly you agree or disagree with the statement according to the scale. With regard to my PULSE classroom experience:

Answered: 231 Skipped: 5

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
The weekly discussion group was a valuable component of my PULSE learning experience.	3.46% 8	7.36% 17	16.88% 39	35.93% 83	36.36% 84	231	3.94
I interacted more with my PULSE professor than I typically interact with faculty members.	1.30% 3	9.09% 21	19.05% 44	33.33% 77	37.23% 86	231	3.96
I experienced a strong sense of community in the classroom.	2.60% 6	3.03% 7	12.99% 30	43.72% 101	37.66% 87	231	4.11
The material I was learning in the classroom was helpful to my understanding of the service component of PULSE.	1.73% 4	1.30% 3	8.23% 19	38.53% 89	50.22% 116	231	4.34
The service component of PULSE was helpful to my understanding of the classroom material I was learning.	2.16% 5	2.60% 6	7.36% 17	37.66% 87	50.22% 116	231	4.31

Q6 Please indicate how strongly you agree or disagree with the statement according to the scale. Because of my PULSE experience:

Answered: 228 Skipped: 8

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
I am less likely to make quick judgments about people.	0.88% 2	0.00% 0	9.21% 21	48.25% 110	41.67% 95	228	4.30
My awareness of societal inequities has been unchanged.	17.54% 40	42.98% 98	11.40% 26	14.91% 34	13.16% 30	228	2.63
I have a better understanding of the value of diversity.	0.88% 2	0.00% 0	9.21% 21	49.12% 112	40.79% 93	228	4.29
My commitment to my spiritual life has been strengthened.	4.39% 10	14.47% 33	25.88% 59	32.02% 73	23.25% 53	228	3.55
My relationship with God has strengthened.	9.21% 21	15.35% 35	30.70% 70	23.68% 54	21.05% 48	228	3.32
My overall philosophy of life has been impacted.	1.75% 4	2.63% 6	10.96% 25	44.30% 101	40.35% 92	228	4.19
I have been able to clarify my values and beliefs.	1.32% 3	2.19% 5	17.11% 39	48.68% 111	30.70% 70	228	4.05
I have considered changing my major.	21.49% 49	37.72% 86	15.79% 36	14.04% 32	10.96% 25	228	2.55
I have a better understanding of Jesuit Higher Education.	2.63% 6	2.63% 6	12.72% 29	47.81% 109	34.21% 78	228	4.08

Q5 Please indicate how strongly you agree or disagree with the statement according to the scale. In general:

Answered: 229 Skipped: 7

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Community service is something very important to me.	0.87% 2	0.87% 2	1.75% 4	31.44% 72	65.07% 149	229	4.59
Prior to PULSE, I had experience in social service settings.	2.18% 5	7.86% 18	7.86% 18	34.93% 80	47.16% 108	229	4.17
Prior to PULSE, I had little experience in urban areas.	14.85% 34	34.93% 80	13.97% 32	27.51% 63	8.73% 20	229	2.80
I am knowledgeable about the complexities of urban problems in the U.S.	0.87% 2	3.49% 8	13.54% 31	53.71% 123	28.38% 65	229	4.05
I have an idea of how to work for social change.	0.44% 1	2.18% 5	6.99% 16	64.19% 147	26.20% 60	229	4.14
I am comfortable with people from diverse backgrounds.	0.87% 2	0.44% 1	1.75% 4	44.54% 102	52.40% 120	229	4.47
I have an interest in philosophy.	4.37% 10	11.79% 27	20.52% 47	36.68% 84	26.64% 61	229	3.69
I intend to take more philosophy classes.	6.99% 16	26.20% 60	30.57% 70	16.59% 38	19.65% 45	229	3.16
I have an interest in theology.	5.24% 12	15.28% 35	30.57% 70	34.06% 78	14.85% 34	229	3.38
I intend to take more theology classes.	10.48% 24	30.57% 70	32.31% 74	16.59% 38	10.04% 23	229	2.85
I have an understanding of social justice.	1.31% 3	0.44% 1	4.37% 10	57.21% 131	36.68% 84	229	4.28
I am quite certain about my career goals.	6.99% 16	21.40% 49	18.78% 43	30.13% 69	22.71% 52	229	3.40
I have an awareness of stereotypes.	0.87% 2	0.00% 0	1.75% 4	51.53% 118	45.85% 105	229	4.41
I feel integrated into the Boston College community.	0.44% 1	5.68% 13	8.30% 19	48.03% 110	37.55% 86	229	4.17
I think favorably of my overall B.C. experience.	0.87% 2	1.31% 3	8.73% 20	43.23% 99	45.85% 105	229	4.32
I plan to recommend PULSE to other B.C. students.	0.87% 2	0.87% 2	3.93% 9	22.71% 52	71.62% 164	229	4.63

Q9 How would you rate PULSE in your overall Boston College academic experience?

Answered: 225 Skipped: 11

ANSWER CHOICES	RESPONSES	
Most influential course I have taken.	46.22%	104
One of the most influential courses I have taken.	47.56%	107
Similar in influence to many other courses I have taken.	5.78%	13
Less influential than other courses I have taken.	0.44%	1
The least influential course I have taken.	0.00%	0
Uncertain	0.00%	0
TOTAL		225

APPENDIX 4: 2017-2018 STUDENT SURVEY MATERIAL (Indirect Evidence)

PULSE Pre-Survey 2017-2018

SurveyMonkey

Q6 Beside each statement below, indicate how strongly you agree or disagree with the statement according to the following scale:

Answered: 367 Skipped: 15

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Community service is something very important to me.	1.09% 4	0.27% 1	7.36% 27	41.96% 154	49.32% 181	367	4.38
I have had experience in social service settings.	1.36% 5	3.27% 12	7.36% 27	49.32% 181	38.69% 142	367	4.21
I have an interest in philosophy.	3.88% 14	14.13% 51	35.46% 128	37.95% 137	8.59% 31	361	3.33
I intend to take more philosophy classes after PULSE.	13.90% 51	35.15% 129	37.06% 136	11.44% 42	2.45% 9	367	2.53
I have an interest in theology.	9.84% 36	25.41% 93	35.25% 129	24.04% 88	5.46% 20	366	2.90
I intend to take more theology classes after PULSE.	19.95% 73	37.98% 139	33.33% 122	6.01% 22	2.73% 10	366	2.34
I probably would not take philosophy or theology if it was not required by Boston College.	6.01% 22	24.59% 90	18.31% 67	33.88% 124	17.21% 63	366	3.32
I feel integrated into the Boston College community.	0.82% 3	4.36% 16	21.80% 80	54.22% 199	18.80% 69	367	3.86
I have an understanding of social justice.	0.55% 2	1.64% 6	15.85% 58	63.93% 234	18.03% 66	366	3.97
I am knowledgeable about the complexities of urban problems in the U.S.	0.54% 2	8.99% 33	24.52% 90	52.32% 192	13.62% 50	367	3.69
I have an idea of how to work for social change.	0.27% 1	7.38% 27	29.51% 108	53.55% 196	9.29% 34	366	3.64
I am comfortable with people from diverse backgrounds.	0.00% 0	1.09% 4	7.90% 29	48.23% 177	42.78% 157	367	4.33
I am quite certain about my career goals.	5.18% 19	18.53% 68	25.34% 93	32.70% 120	18.26% 67	367	3.40
I have considered changing my major.	8.74% 32	28.69% 105	16.94% 62	35.25% 129	10.38% 38	366	3.10
I have first-hand experience in urban areas.	3.27% 12	16.62% 61	18.26% 67	38.15% 140	23.71% 87	367	3.62
I have an awareness of stereotypes.	0.00% 0	0.82% 3	4.09% 15	55.04% 202	40.05% 147	367	4.34
I think favorably of my overall B.C. experience.	0.27% 1	2.73% 10	15.03% 55	44.54% 163	37.43% 137	366	4.16

Q3 Please indicate how strongly you agree or disagree with the statement according to the scale. With regard to my PULSE classroom experience:

Answered: 195 Skipped: 3

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
The weekly discussion group was a valuable component of my PULSE learning experience.	2.05% 4	10.26% 20	15.38% 30	34.87% 68	37.44% 73	195	3.95
I interacted more with my PULSE professor than I typically interact with faculty members.	2.05% 4	7.69% 15	16.92% 33	35.38% 69	37.95% 74	195	3.99
I experienced a strong sense of community in the classroom.	0.51% 1	7.69% 15	14.87% 29	36.92% 72	40.00% 78	195	4.08
The material I was learning in the classroom was helpful to my understanding of the service component of PULSE.	0.51% 1	3.08% 6	12.82% 25	36.41% 71	47.18% 92	195	4.27
The service component of PULSE was helpful to my understanding of the classroom material I was learning.	0.51% 1	2.05% 4	10.26% 20	34.87% 68	52.31% 102	195	4.36

Q6 Please indicate how strongly you agree or disagree with the statement according to the scale. Because of my PULSE experience:

Answered: 193 Skipped: 5

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
I am less likely to make quick judgments about people.	0.00% 0	2.07% 4	7.25% 14	39.90% 77	50.78% 98	193	4.39
My awareness of societal inequities has been unchanged.	23.32% 45	39.90% 77	9.84% 19	8.81% 17	18.13% 35	193	2.59
I have a better understanding of the value of diversity.	0.52% 1	0.52% 1	7.77% 15	41.45% 80	49.74% 96	193	4.39
My commitment to my spiritual life has been strengthened.	3.63% 7	13.47% 26	26.94% 52	34.20% 66	21.76% 42	193	3.57
My relationship with God has strengthened.	9.33% 18	16.58% 32	32.64% 63	27.98% 54	13.47% 26	193	3.20
My overall philosophy of life has been impacted.	1.04% 2	5.18% 10	10.36% 20	50.26% 97	33.16% 64	193	4.09
I have been able to clarify my values and beliefs.	0.52% 1	3.11% 6	12.44% 24	55.44% 107	28.50% 55	193	4.08
I have considered changing my major.	16.58% 32	34.72% 67	16.58% 32	21.24% 41	10.88% 21	193	2.75
I have a better understanding of Jesuit Higher Education.	2.07% 4	4.15% 8	17.62% 34	44.56% 86	31.61% 61	193	3.99

Q5 Please indicate how strongly you agree or disagree with the statement according to the scale. In general:

Answered: 194 Skipped: 4

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Community service is something very important to me.	0.00% 0	0.52% 1	5.15% 10	25.26% 49	69.07% 134	194	4.63
Prior to PULSE, I had experience in social service settings.	1.55% 3	6.19% 12	7.73% 15	30.41% 59	54.12% 105	194	4.29
Prior to PULSE, I had little experience in urban areas.	20.62% 40	28.87% 56	13.40% 26	26.29% 51	10.82% 21	194	2.78
I am knowledgeable about the complexities of urban problems in the U.S.	0.52% 1	2.58% 5	10.31% 20	58.25% 113	28.35% 55	194	4.11
I have an idea of how to work for social change.	0.00% 0	1.55% 3	10.31% 20	57.73% 112	30.41% 59	194	4.17
I am comfortable with people from diverse backgrounds.	0.00% 0	0.00% 0	3.09% 6	40.72% 79	56.19% 109	194	4.53
I have an interest in philosophy.	3.09% 6	11.86% 23	20.62% 40	41.24% 80	23.20% 45	194	3.70
I intend to take more philosophy classes.	11.34% 22	26.29% 51	32.99% 64	17.53% 34	11.86% 23	194	2.92
I have an interest in theology.	7.22% 14	19.07% 37	24.74% 48	35.05% 68	13.92% 27	194	3.29
I intend to take more theology classes.	13.92% 27	38.14% 74	25.26% 49	16.49% 32	6.19% 12	194	2.63
I have an understanding of social justice.	0.00% 0	1.55% 3	3.09% 6	50.00% 97	45.36% 88	194	4.39
I am quite certain about my career goals.	3.61% 7	17.53% 34	21.13% 41	34.02% 66	23.71% 46	194	3.57
I have an awareness of stereotypes.	0.00% 0	0.00% 0	3.09% 6	43.81% 85	53.09% 103	194	4.50
I feel integrated into the Boston College community.	3.61% 7	3.09% 6	12.89% 25	45.88% 89	34.54% 67	194	4.05
I think favorably of my overall B.C. experience.	3.09% 6	2.58% 5	11.34% 22	31.44% 61	51.55% 100	194	4.26
I plan to recommend PULSE to other B.C. students.	0.00% 0	1.03% 2	7.73% 15	17.01% 33	74.23% 144	194	4.64

Q9 How would you rate PULSE in your overall Boston College academic experience?

Answered: 193 Skipped: 5

ANSWER CHOICES	RESPONSES	
Most influential course I have taken.	41.97%	81
One of the most influential courses I have taken.	47.15%	91
Similar in influence to many other courses I have taken.	9.33%	18
Less influential than other courses I have taken.	1.55%	3
The least influential course I have taken.	0.00%	0
Uncertain	0.00%	0
TOTAL		193