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Cover Page Footnote

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Dimensions of Spirituality Fostered through the PULSE Program for Service Learning

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Cultivating spiritual development is central to the mission of Catholic higher education institutions. Studies demonstrate that service learning is a pedagogical method through which spiritual development can be fostered among undergraduates. This study builds upon prior research to analyze whether spiritual growth occurred and which dimensions of spirituality changed most significantly for students participating in the Boston College PULSE Program for Service Learning. PULSE is a year-long experience integrating weekly service with coursework in philosophy and theology through structured reflection. Quantitative findings indicate that nearly 80 percent of study participants grew spiritually. Results indicate that the most significant change occurred in the dimensions of: 1) believing in the interconnectedness of humanity and a related desire to serve humanity, 2) seeking to better understand oneself and one's purpose in life, and 3) facing religious/spiritual struggle. Interview excerpts provide detailed descriptions of how students described growth in specific dimensions of spirituality.

Keywords: Service-Learning, Spiritual Growth, Spiritual Development, Spirituality in Higher Education, College Student Development, Catholic Higher Education

Introduction

Typically included in the mission statement of Catholic colleges and universities is the concept of fostering holistic student development. Not only is there an emphasis on intellectual development, but Catholic higher education institutions also strive to foster personal growth, emotional growth, social growth, and spiritual growth during the undergraduate years.

Despite aiming to cultivate spiritual growth, there is evidence that Catholic colleges and universities have not been any more successful than other private higher education institutions or other religiously affiliated institutions in this regard. Small and Bowman's (2012) analysis of Astin, Astin, and Lindholm's (2011a; 2011b) College Students' Beliefs and Values (CSBV) data

found that students at Catholic higher education institutions demonstrate similar levels of spiritual growth to undergraduates attending secular institutions. Gonyea and Kuh (2006) analyzed data from the 2004 National Survey of Student Engagement (NSSE) and found that students at 70 Catholic colleges and universities reported that their institution contributed less to developing a deepened sense of spirituality than students at 29 faith-based, fundamentalist colleges.

Service learning has shown promise as an avenue through which spiritual growth can be fostered within higher education as seven prior studies have demonstrated a relationship between service learning participation and spiritual growth of undergraduates (Astin et al., 2011a; Cherry, De Berg, & Porterfield, 2001; Eyler & Giles, 1999; Kuh & Gonyea, 2006; Lovik, 2010; Radecke, 2007; Yeh, 2010). Service learning is defined as “a credit-bearing educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of the course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility” (Bringle & Hatcher, 1996, p. 222).

In their groundbreaking book, *Where's the learning in service-learning?*, Eyler and Giles (1999) surveyed 1,136 students who participated in service learning at 30 colleges and universities in 1995 and asked students to reflect upon the importance of various aspects of learning that occurred from their experience including spiritual growth. Forty-six percent of students selected spiritual growth as a very important or the most important outcome of their service learning experience. Kuh and Gonyea (2006) analyzed 2004 NSSE data from 149,801 students at 461 different four-year colleges and universities and found that participation in service learning had a significant relationship to participation in spiritual practices and a deepened sense of spirituality. Lovik (2010) also analyzed 2004 NSSE data collected from 7,000 students at 450 institutions during the spring semester of their first year of college. Among all curricular experiences, Lovik found that the strongest predictor of self-reported institutional impact on spiritual growth was whether students took a service learning course. Radecke (2007) conducted a qualitative study with 44 undergraduates investigating their perceptions of the impact of a short-term international service learning course on their spiritual lives and faith formation. He found that over half of the students specifically stated that the experience led to a deepened religious faith. Cherry et al.'s (2001)

ethnographic study investigating religious life on four college campuses included an analysis of outcomes pertaining to student participation in a service learning class at one of these institutions. The service learning participants consistently reported that the “course had given them the opportunity to undergo a process of personal transformation and spiritual growth” (p. 181). Yeh (2010) conducted a qualitative study with a sample of six service learning participants at two colleges to investigate the question of whether service learning can play a role in the retention of low income, first generation students. Although spiritual growth was not the primary focus of the study, students reported that the service learning experience caused them to examine their values, beliefs, and purpose in life. Because of this, she concluded that one of the primary areas of growth and development for the students in the study was spiritual growth.

Astin, et al. (2011b) conducted the most comprehensive study of college student spirituality and religiosity to date. Their College Students’ Beliefs and Values Survey (CSBV) was administered in 2004 to 112,232 entering students and a sub-sample of 14,527 of these students took the CSBV during spring of their junior year. Results indicated that student participation in service learning had powerful impacts on the spiritual quest, ethic of caring, and ecumenical worldview dimensions of spirituality.

Although these prior studies have demonstrated a relationship between service learning and spiritual growth, none have examined which aspects of spirituality are most significantly changed during the service learning experience through a mixed methods approach. Given the central importance of spiritual growth to Catholic colleges and universities, this study sought to further investigate whether spiritual growth occurred through participation in a service learning program at a Catholic university and learn more about change within specific dimensions of spirituality.

Methods

Study participants were drawn from the 361 students enrolled in Boston College’s 2012-2013 PULSE Program for Service Learning¹. PULSE is one avenue through which students at Boston College can choose to fulfill their core requirement in philosophy and theology. The PULSE Program integrates 10-12 hours of weekly service with a year-long, interdisciplinary

¹ PULSE is not an acronym, but is symbolic of a heartbeat and the life-giving experience that develops for all involved as students leave campus and engage with the city.

philosophy and theology course focused around questions of how to build a just society and what responsibility individuals may have towards the common good. While all sections of the class do not use the same texts, there is consistency in that all courses include some classical works in philosophy and theology (i.e. Plato, Aristotle, Rousseau, Augustine) as well as modern works in these disciplines (i.e. Arendt, Foucault, Lewis, Nolan). Furthermore, class readings typically include some books from the Bible as well as a contemporary text illuminating personal stories of those facing injustice (i.e. Kozol, Shipler). PULSE includes a weekly, one-hour discussion session devoted solely to reflecting upon how the service experience connects to course content. Community partnerships are developed through an interactive process in which community-based organizations define the type of community service they would like students to do and the PULSE Program staff (including student leaders) consider whether that service has the potential to raise social justice and social responsibility questions that fit with course content.

Students are compensated for the extra time devoted to their service site and weekly discussion group by earning six credits each semester for the course (in comparison with the typical three credits for a course). PULSE Professors are compensated for the extra time devoted to facilitating two weekly discussion groups by earning credit for teaching 1.5 courses each semester. Community partners have a voice in ensuring students are meeting learning goals and service expectations through semester-end evaluations that are incorporated into the final course grade. Community partners also have the potential to be financially compensated through participation in a seminar series that promotes dialogue among PULSE faculty, PULSE students, PULSE staff, and community partners.

The PULSE Program was chosen as the study site because of prior anecdotal evidence that students were experiencing spiritual growth as a result of PULSE participation. Furthermore, the high number of students (361), course sections (14), faculty members (9), and community partners (more than 50) involved in PULSE ensured that study participants would be exposed to a range of experiences in regard to quality of reflection; exposure to disorienting dilemmas; and quality of relationships in the classroom and at community-based organizations. On the other hand, all student participants experienced some structural similarities (a time-intensive service commitment, a weekly class reflection session, and exposure to broad questions of social justice and social responsibility) regardless of their class or service site.

The study utilized an explanatory sequential mixed methods design (Creswell & Plano Clark, 2011) that incorporated a quantitative phase followed by a qualitative phase. First, quantitative data were collected and analyzed to understand overall trends among study participants. The qualitative phase of the study then attempted to explain and offer greater depth of understanding to the findings of the quantitative phase (Creswell & Plano Clark, 2011).

In conjunction with the program's annual assessment process, pre-service and post-service surveys were distributed via e-mail to all PULSE students. The pre-service survey was conducted in early fall 2012 and the post-survey was distributed in the late spring of 2013. Students ($n=272$) completed both a pre-service and post-service survey that could be matched with one another for a 75 percent overall response rate. Among the participants, 69.9% were White/Caucasian, 17.0 % Asian American/Asian, 12.5 % Hispanic/Latino/a, 5.5 % African American/Black, 36 % male, and 64 % female. Sixty percent listed Catholic as their religious preference, 24.3 % listed none, and 3.3 % listed Jewish. The vast majority (84.6 %) of study participants had not previously taken a service learning course, but nearly all (97.8 %) had previously done community service.

Based upon a review of the literature, spirituality was conceptualized as including the following dimensions: a) being engaged in a dynamic process of inner reflection to better understand oneself and the meaning and purpose of one's life; b) belief in the interconnectedness of humanity and a related desire to be of service to others c) living one's personal philosophy of life with authenticity and integrity; and d) seeking a connection/relationship with a higher power (Astin et al., 2011b; Braskamp, Trautvetter, & Ward, 2006; Love & Talbot, 1999; Roehlkepartain, Benson, Scales, Kimball, & Ebstyn-King, 2008). Guided by this conceptualization of spirituality, specific variables and scales from Astin et al.'s (2011a; 2011b) College Students' Beliefs and Values (CSBV) instrument were utilized to measure spirituality in the surveys.

Astin et al.'s (2011a; 2011b) Spiritual Identification, Spiritual Quest, Religious Struggle, Ethic of Caring and Ecumenical Worldview scales were utilized for this research. (Variables from their Ethic of Caring and Ecumenical Worldview scales were combined and re-named the Interconnectedness of Humanity scale. Their Religious Struggle scale was re-named the Religious/Spiritual Struggle scale for this study). Two new scales (still utilizing Astin et al.'s variables) were also created for the purpose of this study: Living One's Philosophy of Life with Integrity and Relationship with God. The Spiritual Identification scale ($\alpha = .837$) measures whether one identifies as spiritual. The

Spiritual Quest 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 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 scale ($\alpha = .949$) measures the desire to live out one's philosophy of life with integrity and authenticity. The Relationship with God scale ($\alpha = .837$) measures the degree to which one is seeking a relationship with a higher power/God. The Religious/Spiritual Struggle scale ($\alpha = .779$) considers the degree to which one is struggling with and questioning one's religious/spiritual background and beliefs.

The quantitative survey was followed by qualitative interviews in the late spring of 2013. Eleven survey respondents were invited to participate in semi-structured interviews. Five interviewees (referred to by the pseudonyms of Tim, Elizabeth, Tyler, Mei Ling, and Kasey) were invited because they exhibited a large positive change in quantitative survey results and six (referred to by the pseudonyms of Blake, Jack, Alie, Michael, Vicky, and Jing) were invited because they exhibited a neutral or negative change. In addition to their varying quantitative survey results, interviewees were selected because they represented a variety of academic disciplines, ethnic backgrounds, religious backgrounds, PULSE classes, and service sites.

An interview protocol was utilized that included a list of open-ended questions intended to enable further explanation and description of quantitative findings. All interviewees were asked about what impact (if any) the PULSE experience had on their spirituality. Follow-up questions were then asked about growth in specific dimensions of spirituality. After interviews were transcribed, the interview text was read in its entirety as an initial means of developing categories that were used to classify and code data into meaningful segments (Creswell & Plano Clark, 2011). The codes were analyzed and combined into themes. These themes are described and interpreted in the written narrative and substantiated with quotes and observations from the interviews (Merriam & Associates, 2002). NVivo software was used throughout qualitative data analysis to manage the storing, coding, and organizing of the data.

Limitations

The PULSE Program for Service Learning has distinct features that may limit generalizability to other service learning settings. Most significantly,

PULSE involves more weekly service and more weekly reflection than the typical service learning experience. Additionally, the PULSE curriculum incorporates philosophy and theology as well as questions around social justice that may have impacted the way in which spiritual growth occurred. Boston College is also unique in that it is a highly selective Jesuit, Catholic university. These aspects of Boston College may have impacted the level of student engagement in spiritual reflection.

Because there was no control group for the study, it is difficult to ascertain whether changes in pre-test/post-test scores are solely attributable to the service learning experience. Qualitative study results and a self-report of spiritual growth were included to provide further insight in this regard. Utilizing the same variables as Astin et al.'s (2011a; 2011b) national study of college student spirituality also provides context regarding what level of change can typically be expected of the broader college student population.

Results

Quantitative Results

The study first sought to confirm the results of prior studies by considering whether spiritual growth occurred for students participating in the PULSE Program. This was done by utilizing two different measures of overall spiritual growth: a) a self-report of spiritual growth and b) differences between pre-test and post-test responses to spirituality variables were analyzed.

Student agreement with the statement, "I grew spiritually as a result of my PULSE experience," is outlined in Table 1. Overall, nearly 80 percent of students reported spiritual growth because of PULSE.

Table 1

Response to Statement, "I Grew Spiritually as a Result of my PULSE Experience." (N=272)

Response	Frequency	%
Agree Strongly	109	40.07
Agree Somewhat	106	38.97
Disagree Somewhat	41	15.07
Disagree Strongly	16	5.88

Similarly, 77.6 % of students had a positive change in spirituality when comparing pre-survey and post-survey responses. A comparison of pre-test/post-test mean responses for each individual spirituality variable similarly demonstrates spiritual growth. All means changed in the positive direction and nearly 80 % (43 of 54) of these changes in mean scores were statistically significant (See Tables 3-8). Variables changing the most in effect size (as measured by Cohen's *d* which is calculated by subtracting the pre-survey mean from the post-survey mean and dividing by a pooled standard deviation) are listed in Table 2. Overall, these are considered small to medium effect sizes.

Table 2

Spirituality Variables with the Greatest Mean Change (N=272)

Variable	<i>d</i>
Struggled to understand evil, suffering, and death	.52
Influencing the political structure	.49
Influencing social values	.41
Developing a meaningful philosophy of life	.41
Becoming a community leader	.40
Reducing pain and suffering in the world	.40
Becoming a more loving person	.37
Improving the human condition	.36
Helping to promote racial understanding	.35
Being on a spiritual quest	.33
Integrating spirituality into my life	.33

Table 3

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

Note. ^a Extent to which the variable describes the respondent. 1=Not at all 2=To some Extent 3=To a great extent. ^b Importance to the respondent. 1=Not important 2=Somewhat important 3=Very important 4=Essential. ^c Level of agreement with the statement. 1=Strongly disagree 2=Disagree somewhat 3=Agree somewhat 4=Agree strongly. ^d Frequency of Occurrence. 1=Not at all or Not applicable 2=Occasionally 3=Frequently

Table 4

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

Note. ^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. ^c 1=None 2=Some 3=Most 4=All

Table 5

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

Table 5 (cont.)

Variable	Pre-Survey		Post-Survey		<i>p</i>	<i>d</i>
	M	SD	M	SD		
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 world ^a	3.24	.741	3.51	.619	<.001	.40
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

Note. ^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 6

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

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

Table 7

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

Note. ^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.

Table 8

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

Note. ^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.

Similarly, mean responses for all spirituality scales demonstrated positive change and all were statistically significant (see Table 9). The largest changes in effect size (as measured by Cohen's *d*) included the Interconnectedness of Humanity, Spiritual Quest, Religious/Spiritual Struggle, and Spiritual Identification scales.

Table 9

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		
Interconnectedness of Humanity	55.56	7.17	59.35	6.91	<.001	.54
Religious/Spiritual Struggle	12.16	2.88	13.25	3.14	<.001	.36
Spiritual Quest	26.26	4.20	27.74	3.99	<.001	.36
Spiritual Identification	26.05	5.58	27.82	5.44	<.001	.32
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

Qualitative Results

In this explanatory mixed methods approach, interviews were utilized to provide further description of spiritual change that occurred because of the PULSE service learning experience. Overall, 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. None of the interviewees demonstrated a complete lack of spiritual growth during the PULSE experience. However, the interviewees who had quantitatively higher spiritual growth were also deeply engaged in a process of inner reflection to understand oneself and one's meaning and purpose in life; were engaged with questioning how to live their philosophy of life with integrity and authenticity; and were facing religious/spiritual struggle due to their PULSE experience. The one spirituality dimension not consistently evident among interviewees was the desire to build a deeper relationship with God. The following interview excerpts illustrate how students described

these dimensions of spiritual growth.

Inner reflection to better understand oneself and one's purpose. Nearly all interviewees commented upon how PULSE began a process of reflecting upon one's beliefs and purpose in life. Tim outlined how PULSE "made me consider what it actually means to live and what it actually means to live well." Elizabeth described how PULSE "has definitely opened up a lot more questions...I don't have answers yet, but it's made me start to question..." Tyler explained that PULSE has "started me out on this conquest to find out who I am." Mei Ling was "trying to figure out what I can do in the future to kind of bring about change...I wonder what my role is in all of that...[PULSE] helped me formulate my beliefs." Alie reported that through PULSE, "I've been learning about myself, what really matters to me, what I want to accomplish, and what it's like to do the right thing...I was kind of pushed to reevaluate why I believe the things I do and if I actually believe them."

Living one's philosophy of life with integrity and authenticity. PULSE also led students to think more intentionally about how to live life with integrity. Tim stated, "I'm more aware of how each decision I make starts to define who I am...it's more of an active approach whereas in the past my decision might have been sparked by emotions. I think now my decisions are more thought out and logical." Because of PULSE, Vicky believes, "it's easier for me to find the ways to live my life with more integrity...being more aware of the people around me and the things that are being said, how it affects other people..." Mei Ling reported that the reflection involved with PULSE led her to be "more thoughtful with my actions and thinking in general." Kasey similarly felt that she reflected more upon "everyday decision making...the way you talk to people and the choices you make."

Belief in the interconnectedness of humanity and a related desire to be of service. With much passion, interviewees consistently articulated how PULSE caused them to see the interconnectedness of humanity differently than they had before. This led to a related desire to serve in the future as well as a more ecumenical worldview. Jing stated that PULSE has made her "a more caring person" and that she will "continue to find more opportunities to get involved in community service. Mei Ling described how, "Growing up I've always had an individualist way of thinking, but now the class makes me think more communal...It really helped me think that whatever I'm going to do in the future...how we all need to grow as a society together." Similarly,

Vicky feels “so much more connected to the community and the world... now I know that we’re all kind of in this together...My decisions are not only about whether or not it’s good for me, but also whether or not it’s good for everybody.” Tim also described how PULSE challenged his thinking and caused him to move from an individualistic perspective to a more communal worldview as he explained,

Before PULSE, my definition of what it meant to be a good person was pretty limited to myself. I didn’t really think too much about what we owe people who are less fortunate...I think it gave me a very special perspective on what’s important besides managing money and acquiring money. I still have a drive to make money and to do some big things but there’s definitely going to be something, at least in the back of my mind, just knowing that I have a lot of ability even now as a college student to help a lot of people and I think that’s definitely going to continue to affect how I look at things and even how I eventually do business.

About her community service site, Elizabeth said, “I love it there...I would be there every day if I could. I just want to give them all I can give, even though it’s not that much.” She further described her long-term goal “to come back and donate so much money to [my service site]... It’s sort of given me more motivation. I just want to make a lot of money...so I can come back and donate.”

In terms of developing a more ecumenical worldview, Vicky described how her PULSE experience “made me feel more connected with other religions...made me see that there are a lot of connections...so many of these religions are focused towards the same goal of people loving each other and being connected...” Blake described how PULSE enabled him to see how “people can still connect” despite differences in “cultures, beliefs, and ideas...I saw that we all have the same fundamental desires and needs.”

Religious/Spiritual Struggle. Developmental theories and empirical studies outline the importance of religious and spiritual struggle as a necessary precursor for young adult spiritual growth to occur (Fowler, 1981; Holcomb and Nonneman, 2004; Parks, 2000). Relatedly, six of the eleven interviewees (all of those that exhibited positive change in quantitative results and one who exhibited neutral change) explained that they faced religious and spiritual struggle because of PULSE participation. Tyler said 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.” He described one particularly intense class, “where we discussed God...everyone was just spilling out things about the religious and spiritual aspects of our lives...it was one of the best moments in class...we were all confused about what to think.” During the year, Tim did “a lot of questioning my own faith and what it even means to have faith.” He stated, “I’m still super confused about any notion of a higher power...I’m definitely still struggling...” Elizabeth said that PULSE has caused her to question “religion a lot more. I’ve been thinking about if I want to be religious, or maybe pursue a different religion. I’ve also thought more about spirituality, and how that’s different than being religious.” Alie reported that PULSE “really challenged” her “faith a lot and it strengthened it in a way because I’ve thought to myself, there’s no way I could have done that if I didn’t have my religion or my spirituality.” She says, “I don’t think PULSE gave me life changing views, but I think it did in a way reinforce them. There were times where I was really struggling with my faith and I kind of came out of that with... more spirituality.” Jack similarly said that participating in PULSE, “kind of reaffirmed what I already believed in because it made me question it and think about if what I believe in was the right thing.”

Seeking a deeper relationship with a higher power/God. When asked about their relationship with God/a higher power, students focused more on the struggles they feel surrounding God or their perception of God rather than a desire for a deeper relationship with God. Vicky said, PULSE has really strengthened my faith...seeing people who are in hard situations and seeing their faith has just been completely inspiring. It’s made me realize how much God does do for people. Kasey said, “my spirituality has kind of shifted...I see it more...that God is love. It’s unconditional love...not just thinking of God as some far off figure, but really incorporating it as a life purpose; to love unconditionally.”

While it was clear that Vicky did actively seek a deeper relationship with God, this was not clear among the other students. Interestingly, Vicky also did not discuss experiencing spiritual struggle during the PULSE year. She explained how she struggled tremendously in high school as she went back and forth between atheism and religiosity. She worked through many questions then and subsequently has become highly involved with religion.

Discussion

While survey results demonstrate growth in all spirituality dimensions, students changed most on the dimensions associated with: a) being engaged in a dynamic process of inner reflection to better understand oneself and one's meaning and purpose in life (spiritual quest) and b) belief in the interconnectedness of humanity and a related desire to serve humanity. Students did not grow as much on the dimensions of: a) living one's philosophy of life with authenticity and integrity or b) seeking a relationship/connection with God. It should be noted, however, that any positive change in these latter two dimensions of spirituality stands in contrast to Astin et al.'s (2011b) national study in which undergraduates generally demonstrated no change on the variables associated with these dimensions of spirituality.

Interestingly, the interviewee that spoke the most about her desire to build a deeper relationship with God (Vicky) was also the only one to discuss struggling with religious and spiritual questions during high school. This prior struggle may be exactly why she exhibited a desire for a deeper relationship with God. One might not be seeking a stronger relationship with God if one is still struggling to determine what one believes. Furthermore, a student who is in the midst of struggling simply may not be ready to articulate the intimate details of a personal relationship with God to a researcher just introduced moments earlier.

As illustrated through Vicky, spiritual development theories discuss the importance of questioning the spiritual and religious beliefs handed down from one's family in order to grow into one's adult faith life (Parks, 2000; Fowler, 1981). However, prior empirical studies have had mixed results in this regard with some finding that such struggle has a negative relationship to spiritual growth and others finding a positive relationship (Bryant & Astin, 2008; Small & Bowman, 2012). In this study, the theoretical perspective was validated by Vicky's story as well as the fact that all of the interviewees with positive changes in quantitative spirituality scores also described how the PULSE experience initiated significant religious/spiritual struggle for them. Furthermore, quantitative results demonstrate that increases on the Religious/Spiritual Struggle scale had a weak, but statistically significant correlation with increases in the other spirituality scales as illustrated in Table 10.

Table 10

Correlations between changes in the Religious/Spiritual Struggle Scale and change in other spirituality scales (N=272)

Measure	SI	SQ	IH	PLI	RG	SR
Change in Religious/Spiritual Struggle	.174**	.207**	.290**	.203**	.208**	.190**

Note. SI=Spiritual Identification; SQ=Spiritual Quest; IH=Interconnectedness of Humanity; PLI=Living One's Philosophy of Life with Integrity; RG=Relationship with God; RS=Religious/Spiritual Struggle; SR=Self-Report of Spiritual Growth

** $p < .01$, two-tailed

Overall, the mean scores on the Religious/Spiritual Struggle scale changed in a statistically significant manner between the pre-test and post-test. Again, this is noteworthy because the Religious/Spiritual Struggle variables generally did not change in Astin et al.'s (2011b) national study. In other words, undergraduates in the nation generally are not facing religious/spiritual struggle and, therefore, may be inhibited in the ability to grow into a mature faith life.

Utilizing Cohen's (1998) dependent measure for effect size, it is apparent that the following individual variables changed the most (with an effect size that was small to moderate) between the pre-test and post-test administration: desire to influence the political structure; develop a meaningful philosophy of life; reduce pain and suffering in the world; improve the human condition; become a community leader; influence social values; promote racial understanding; become a more loving person; and integrate spirituality into one's life. Students also had large increases in their struggle to understand evil, suffering, and death and being on a spiritual quest.

Looking at the CSBV data, however, it appears that simply being in college changes some of these indicators in a manner comparable to the PULSE data. The largest differences between how PULSE students changed in comparison with the national sample of college students occurred in the variables listed in Table 11. It is particularly noteworthy that the means associated with two of these spirituality variables actually decreased during the college years among the national sample, while they increased among PULSE students. Overall, it appears that PULSE participants are not only more likely to face increases in religious/spiritual struggle, but are also more likely to be increasingly engaged in the big questions of life and seeking to positively impact societal structures through community leadership and political involvement.

Table 11

Comparison of CSBV and PULSE Results

Variable	<i>PULSE d</i>	CSBV <i>d</i>
Being on a spiritual quest	.33	-.67
Struggled to understand evil, suffering, and death	.52	.00
Influencing the political structure	.49	.13
Trying to change things that are unfair in the world	.32	.00
My spiritual/religious beliefs provide me with strength, support, and guidance	.21	-.10
Feeling unsettled about spiritual and religious matters	.30	.00
Having discussions with my friends about the meaning of life	.29	.00
Becoming a community leader	.40	.11

Results were consistent with Astin et al.'s (2011b) finding that service learning participation had a statistically significant relationship to growth in the Spiritual Quest, Ethic of Caring, and Ecumenical Worldview scales (the latter of which were combined into the Interconnectedness of Humanity scale in this study). However, Astin et al. (2011a) did not find a statistically significant relationship between service learning participation and change in the Religious Struggle scale. This may be due to the fact that Astin, et al. did not make distinctions between service learning classes. As described in Sterk Barrett (2015), such distinctions can be important as varying levels of challenge during the service learning experience can relate to the occurrence of religious and spiritual struggle.

Despite the promise of the PULSE model, there are unique features of the model that are not easy to replicate within the typical structural constraints of higher education. Many educational leaders would quickly dismiss the idea of offering additional course credit for students/faculty or allowing community partners to have a significant voice in student grading. While Boston College also initially struggled with adopting these unique features of the PULSE Program, it ultimately decided that the important learning and development that can occur through this experience was important enough to create these significant incentives and support mechanisms for faculty, students, and community partners.

Conclusion

Overall, this study provides additional evidence that service learning has the potential to be a pedagogical tool through which spiritual development can be fostered among undergraduates. This is particularly important given Catholic higher education's commitment to holistic student development in conjunction with the numerous personal and societal benefits previously found to be associated with spirituality. Prior studies have found a relationship between spirituality and increased psychological well-being (Astin, et al., 2011b; Park & Millora, 2010), decreased alcohol/substance abuse and partying (Kuh & Gonyea, 2006; Stewart, 2001; VonDras, Schmitt, & Marx, 2007), less risky health behaviors (Nelms, Hutchins, Hutchins, & Pursley, 2007), overall satisfaction with college (Astin, et al., 2011b; Kuh & Gonyea, 2006), and increased academic success among ethnic minority students (Walker & Dixon, 2002; Lee, Puig & Clark, 2007).

Along with fostering holistic student development, Catholic colleges and universities also seek to produce graduates who will utilize their talents and education in service to the broader society through future professional and personal endeavors. Pope John Paul II's *Ex corde Ecclesiae* outlined a commitment to service as one of the defining characteristics of Catholic colleges and universities. As stated by the Superior General of the Jesuits, Fr. Peter-Hans Kolvenbach, in a 2000 address to Jesuit higher education leaders, "the measure of Jesuit universities is not what our students do but who they become and the adult Christian responsibility they will exercise in the future towards their neighbor and their world." This study confirms prior research finding that service learning participation has a positive effect on commitment to service and social responsibility (Eyler, Giles, Stenson, & Gray, 2001). Given the statistically significant change that occurred on individual variables related to civic engagement as well as the way in which qualitative and quantitative results point towards an increasing belief in the interconnectedness of humanity and a related desire to be of service, it is clear that the PULSE service learning model offers the potential for developing the type of human beings that are so urgently needed in our society of ever-increasing inequality.

As indicated by prior research (Small & Bowman, 2012; Gonyea & Kuh, 2006), Catholic colleges and universities need to think critically about how to effectively achieve the stated goal of fostering spiritual development among undergraduates. A failure to do so calls into question what makes Catholic higher education distinctive from other American higher education institu-

tions. The results of this study, in combination with prior studies finding a significant relationship between service learning and spiritual development, make a particularly strong case for the institutionalization of service learning within Catholic colleges and universities.

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