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Service and Service-Learning in International Baccalaureate High Schools: An International Comparison of Outcomes and Moderators

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The International Baccalaureate (IB) Organization asks high school students in its Diploma Programme to engage in service as a way to become more civic-minded, develop leadership and other skills, and develop an ethic of service. The study discussed is this article investigated the ways in which IB students in Canada, the United States, and Central and South America provided service, and the self-perceived outcomes of their participation. The study also examined the extent to which program design characteristics influenced perceived outcomes, demonstrating the strong effect sizes associated with students' reports of meaningfulness, links to curriculum, student voice, and frequency and depth of reflection. The study was limited by student self-reporting but was suggestive of hypotheses that can be investigated further.

Keywords: *service, service-learning, civic development, civic engagement, K-12 quality standards*

The International Baccalaureate (IB) Organization is a nonprofit that currently works with nearly 3,300 schools in 141 countries, providing young people with an academically rigorous set of courses designed to help them become engaged world citizens who are active, compassionate, and lifelong learners (IB Organization, 2017). Participation is aimed specifically at developing students' civic-mindedness, defined as helping students develop civic efficacy and skills and an ethic of service.

The IB Diploma Programme operates throughout the Americas and provides opportunities for high school students to develop civic-mindedness both through coursework and discussion of issues and by promoting student engagement in service and service-learning through its creativity/arts/service (CAS) requirement. The service component of the requirement is designed to engage students either individually or in groups in providing service to the community or school during out-of-school hours. During school, students are asked in their advisory classes to reflect on the service experience and to identify benefits to themselves and others. Provision of service is tracked during advisory periods by CAS coordinators, who are expected to provide students with reflection activities, monitor progress, and ensure that the activities take place over the requisite period of time with the intensity desired. It is important to note that students are not required to engage in service or service-learning; they may fulfill the CAS requirement in other ways such as participating in sports or artistic endeavors.

Civic-mindedness is neither well-defined nor universally understood in the IB Diploma Programmes. A pilot study using exploratory research generated a theory of action (Billig, 2013) reflecting the general IB approach used in the Americas (i.e., North, Central, and South America). The theory specifies that participation in the service component of CAS is important in prompting students to consider community needs and their roles in helping to meet those needs. An exploratory case study involving students and CAS coordinators (Billig, 2013) examined students' choice of topics for service, their provision of service, and their reflection on those activities, and identified areas in which service was

provided, potential outcomes, and potential program design variations that may influence outcomes. For example, the case studies identified a wide range of service activities that appeared to vary by country. Respondents in the case studies also highlighted an array of potential outcomes for all participants. Both students and CAS coordinators believed that participating students developed confidence and skills related to the service (personal development); leadership skills such as leading a project or working in a team; positive attitudes toward civic participation; a desire to engage or participate in civic behaviors; and a desire to serve in the future and to develop an ethic of service. For each of these outcomes, students and CAS coordinators identified specific indicator areas during the exploratory studies.

Variations in CAS reflection activities were also identified during the pilot study. Some CAS coordinators specifically linked students' service experiences to information or issues discussed in class, while others did not; reflection activities varied considerably in frequency and content; and the extent to which students believed their experiences were meaningful varied according to whether they found their service to be important or somehow related to skill acquisition.

The findings from the pilot study informed the development of the survey research and served to define both outcome areas and potential moderators of the outcomes. Items in the survey were derived from the interviews conducted. This article details findings from the resultant survey. It examines the implementation and outcomes of participation in CAS activities in North, Central, and South American countries. The article begins with a brief review of the research related to civic-mindedness, followed by a description of study methodology and results. The last section discusses findings in the context of the research literature.

Review of Relevant Research

Civic-mindedness does not have a singular definition in the research literature, though most definitions focus on an individual's sense of identity as a citizen, along with the accompanying sense of responsibility, attachment, and expected actions on behalf of the individual's community. Some studies have discussed civic-mindedness interchangeably with terms such as *social capital*, *civic engagement*, and *civic responsibility* (Hua & Wan, 2011). Others have associated civic-mindedness with a set of values, philosophies, or dispositions, such as an orientation toward democracy and a desire to improve or otherwise serve the community through volunteerism (Crystal & DeBell, 2002; Smart, Sanson, Da Silva & Toumbourou, 2000).

Researchers (e.g., Bringle & Steinberg, 2010) have tended to identify both social-emotional and behavioral components of civic-mindedness, including dispositions such as having a sense of social responsibility or civic duty, and an ethic of service—all geared toward the public good. These dispositions are often translated into a range of actions associated with helping others such as community service, obeying the law, respecting others' rights, voting, addressing a public issue, or staying current with the news.

Some theoreticians (e.g., Battistoni, 1997; Bellah, Madsen, Sullivan, Swidler, & Tipton, 1987; Dewey, 1916; Putnam, 2000) assert that civic-mindedness is critical to the survival of democracy and is a necessary component of every student's K-12 education. They, along with many other civic education researchers (e.g., Barber, 1984; Boyte & Kari, 1996; Jones & Steinberg, 2010), have argued that engaging in civic activities contributes to the development of normative behavior and attachment to society and community, without which democracy cannot be sustained.

In the K-12 literature addressing schooling in the United States, many researchers and education advocates have asserted that civic-mindedness is essential to educating the "whole child" (Association for Supervision and Curriculum Development, 2009). Underlying theories associated with this point of view maintain that, except for family members and sometimes peers, schools have the greatest influence on human development. As such, schools have the responsibility not only to develop young people's knowledge and skills, but also to help develop their character, civic-mindedness and engagement, responsibility for self and others, and attachment to community and society.

In the United States, some researchers have expressed alarm at the decline in recent decades of the civic-mindedness of K-12 students. The landmark publication *The Civic Mission of Schools* (Gibson & Levine, 2003) carefully documented this decline in civic knowledge, skills, and engagement of young people. The report suggested strongly that schools must become the primary vehicle of civic education because they serve all students and are best equipped to foster the cognitive aspects of citizenship: critical thinking, deliberation, and acquisition of specific skills and knowledge. According to the report:

> Civic education should help young people acquire and learn to use the skills, knowledge, and attitudes that will prepare them to be competent and responsible citizens throughout their lives. Competent and responsible citizens:
>
> 1. are informed and thoughtful; have a grasp and an appreciation of history and the fundamental processes of American democracy; have an understanding and awareness of public and community issues; and have the ability to obtain information, think critically, and enter into dialogue among others with different perspectives.
> 2. participate in their communities through membership in or contributions to organizations working to address an array of cultural, social, political, and religious interests and beliefs.
> 3. act politically by having the skills, knowledge, and commitment needed to accomplish public purposes, such as group problem solving, public speaking, petitioning and protesting, and voting.
> 4. have moral and civic virtues such as concern for the rights and welfare of others, social responsibility, tolerance and respect, and belief in the capacity to make a difference. (Gibson & Levine, 2003, p. 2)

The research synthesis provided in *The Civic Mission of Schools* (Gibson & Levine, 2003) suggests that six approaches are most promising for helping students to become civically engaged, competent, and knowledgeable: (1) formal interactive instruction in government, history, law, and democracy; (2) carefully moderated classroom discussion of current local, national, and international issues that potentially affect students' lives; (3) *service-learning programs that provide students with opportunities to acquire civic learning through meaningful opportunities to meet community needs linked to serious community issues* (emphasis added)*;* (4) extracurricular activities providing students with opportunities to become involved in their schools and communities; (5) participation in school governance; and (6) simulations of democratic processes and procedures, particularly those that feature legislative deliberation, diplomacy, and voting.

Kirlin's (2002) research review further suggests that high schools promote civic-mindedness most effectively when they engage in participatory activities that allow young people to express opinions and work collaboratively to establish common goals and action plans. Better outcomes appear to be associated with teachers or facilitators asking students to think critically about issues, debate public policy, research current community problems, and plan and engage in activities that address community problems.

Yates and Youniss (1997) specified three types of opportunities that foster civic-mindedness and development: opportunities for agency and industry in the form of responding to a social problem; social relatedness, or working with others to address a need; and development of political-moral understandings as students reflect on and discuss the relationship between the status quo and the ideal. Their study of youth working in soup kitchens illuminated the ways in which service provided such opportunities, focusing on the idea that students have hands-on experiences related to (a) addressing a specific need, thus giving them a sense of agency; (b) relationships with those being served, thus making the challenges come alive; and (c) reflection about the experience, which, in the case of Yates and Youniss' study, helped the students to understand their service in the context of homelessness and society's responsibility for addressing the welfare of its citizens.

This body of research suggests that service and service-learning may be important approaches for producing civic-mindedness in high school students. Several studies investigating this hypothesis have shown promising results. Billig (2000) and Furco and Root (2010), for example, reviewed the extant

research and found outcomes of participation in the areas of academics, civics, and social-emotional learning. Civic outcomes reported in these reviews included greater attachment to school, neighborhood, and community; greater likelihood of volunteering in the future; and a greater willingness to help those in need. Social-emotional outcomes for students included greater empathy, better teamwork and leadership skills, and improved conflict resolution skills.

Celio, Durlak, and Dymnicki (2011) conducted a meta-analysis of service-learning outcomes for students from studies conducted over the previous 10 years that used an experimental or quasi-experimental design and computed outcomes quantitatively. Sixty-two programs involving 11,837 students were reviewed. The overall effect size of service-learning participation on civic and related outcomes was reported to be 0.28, which is a small but statistically significant effect. Changes in attitudes toward self, measured in 36 studies, had a positive effect size of 0.28; measures of attitudes toward school and learning, found in 12 studies, had a 0.28 effect size, and acquisition of social skills, reported in 28 studies, showed a 0.30 effect size. Civic-engagement outcomes, such as altruism, civic responsibility, and/or voting, were measured in 28 studies and had an average effect size of 0.27. Effect sizes were higher for students in college (0.31) than for students in K-12 (0.20).

Other studies not included in the Celio, Durlak, and Dymnicki (2011) review also affirmed some of these outcomes. For example, McBride, Benitez, and Sherraden (2003) found that 54% of students who engaged in volunteerism were still performing community service after graduating from high school, and 45% were still providing service six years later. This percentage compares to 26% who had not volunteered before their high school graduation. Similarly, Melchior and Bailis (2002) demonstrated that high school students' participation in service or service-learning influenced their acquisition of communication skills, personal and social responsibility for the welfare of others, leadership, and acceptance of diversity. Meyer, Billig, and Hofschire (2004) showed that high school students in Michigan who participated in service-learning were more civically and academically engaged when they participated in service-learning than peers who did not participate.

In their large-scale survey, Kahne and Sporte (2008) found that high school youth in Chicago who participated in service-learning were more likely than non-participating peers to develop an ethic of service and become civically engaged over time. The influence of participation in service-learning was stronger than other effects, including influences from the family, neighborhood, or school. The effect size of participating in service-learning, however, was relatively modest at 0.26.

Billig, Jesse, and Brodersen (2008) showed that Philadelphia youth in service-learning programs were also more likely than non-participants to develop an ethic of service, sense of citizenship, and pro-social behaviors than those who did not. Differences were significant, though effect sizes were relatively modest at 0.28. Billig, Meyer, and Hofschire (2004) found that service-learning students in high schools in Hawaii were significantly more likely than their non-participating peers to think that school was stimulating and meaningful. Ammon, Furco, Chi, and Middaugh (2001) found that students in California who participated in service-learning were more likely to become civically engaged than their peers, particularly when programmatic goals were clear and adults facilitated student thinking about good citizenship.

International Differences

The research cited previously in this article only pertains to studies that have been conducted in the United States. History and context may play an important role in discovering differences in IB high school students' service experiences and outcomes.

The Volunteering and Charitable Giving in Canada (Turcotte, 2015) survey showed that about 66% of Canadian youth between the ages of 15 and 19 volunteer. While descriptions of activities were not found in this more recent report, Pancer and Pratt (1999) found that Canadian youth tended to become interested in volunteering primarily for affective reasons (e.g., moral obligation), practical reasons (e.g., an opportunity to explore career options or enhance one's resume), or social reasons (e.g., influence of family or peers).

Tapia (2007) discussed service and service-learning in Central and South America. She identified two major differences between service-learning in the United States and in Central and South America. First, the approaches are influenced by different theories. While the U.S. approach is founded on Dewey's (1916) experiential learning theories (e.g., see Conrad & Hedin, 1962; Giles & Eyler, 1994), Central and South American practice has been influenced first by French eighteenth-century positivism, which considered rational knowledge more important than empirical evidence, and later by solidarity activities, as promoted by Freire, who believed there should be a stronger relationship between education and its social context (Tapia, 2007). In addition, while U.S. practitioners typically define service practices as community service or service-learning, those in Central and South America do not consistently use the term *service* and understand its practice in many different ways. In Argentina, for example, service-learning is expressed as a solidarity-oriented educational approach targeted toward student empowerment and meeting an authentic community need, while developing a particular academic skill for students (Tapia, 2007). She further noted that in other South American and Latin American countries, service-learning does not represent a balance between service and learning, but rather tips toward one component or the other. She also highlighted that many Central and South American countries have a long history of service requirements, counted in months rather than hours. Some countries, such as Columbia, Costa Rica, Santo Domingo, and Venezuela, mandate 30 to 90 service hours per year.

The content of service activities also varies, to some degree, by region. In the United States, the Corporation for National and Community Service (2011) reported that Learn and Serve America participants—that is, youth in schools who were provided a federal grant to implement service-learning—were most likely to work on programs aimed at improving education (41%); preserving the environment (28%); or promoting economic development (27%). In Central and South America, youth were most likely to engage in volunteer activities to benefit the environment, help their society or country, and/or work with those less fortunate (Tapia, 2007).

A few studies centering on high school students' participation in service-learning in countries other than the United States have been conducted. In Chile, England, and the United States (and more modestly in Denmark), students who learned about issues in school and subsequently or simultaneously provided service connected to their learning tended to develop greater trust in their governments, self-efficacy, civic identity, prosocial attitudes, and tolerance for diversity (Torney-Puerta, Amadeo, & Richardson, 2007). The Chilean Ministry of Education assessed the outcome of service-learning participation in 200 schools that serve "vulnerable" students and found a significant increase in school attendance and a decrease in dropout and school failure rates (Eroles, 2004). Similarly, a study of service-learning in Argentinian schools that served disadvantaged youth (Tapia, 2007) found improvements in attendance, dropout rates, and achievement test scores.

Factors that Influence (Moderate) Outcomes

Several studies conducted in the United States have reported greater outcomes when specific service-learning program design characteristics (Billig, 2000; Billig, 2009b; Furco & Root, 2010; Melchior, 1999; Perry, 1997). The characteristics found to be most highly predictive of outcomes were translated into the K-12 Standards for Quality Practice (National Youth Leadership Council [NYLC], 2008), including: (1) the provision of meaningful service, (2) link to curriculum, (3) sufficient duration and intensity, (4) student voice, (5) mutually beneficial partnerships, (6) respect for diversity, (7) in-depth reflection, and (8) progress monitoring.

A few studies have operationalized these standards, and several thought pieces have advised teachers on how to translate the standards into practice (e.g., Billig, 2017; Kaye, 2010; NYLC, 2008). Meaningful service, for example, has been operationalized as service that is personally relevant, appropriate to participants' ages and abilities, engaging, and resulting in visible outcomes valued by those being served (Billig, 2009b; NYLC, 2008). Student voice has been discussed in the context of identifying ideas for service activities and making decisions about those activities (NYLC, 2008). Reflection has been translated into practices that promote thinking about service before, during, and after service activities;

thinking deeply about complex societal problems; thinking about impacts on self and others; expressing views about issues of concern; and reflecting with others (Billig, 2017). The NYLC has also developed indicators for all of the standards (NYLC, 2008).

A series of studies have tested the influence of these variables on student outcomes and have shown that, as a group, the standards are strongly predictive of academic, civic, and social-emotional outcomes around participation in service-learning. For example, in her study of the STEMester of Service Program implemented by Youth Service America, Fredericks (2012) found that high school students in high-quality service-learning programs experienced significantly higher outcomes than peers who participated in low-quality programs. The influence of the quality variables was significant across all outcomes measured, including academic engagement, civic engagement, workforce readiness, and acquisition of civic skills. Effect sizes were in the low range.

Northup's (2011) evaluation of an Education Commission of the States service-learning program called Schools of Success found that service-learning programs in Grades 6 to 12 featuring "high quality" service-learning demonstrated statistically significantly greater outcomes related to students' academic and community engagement than those without these quality practices. Effect sizes were low to moderate. Billig, Northup, and Jaramillo (2012), in their study of high school students in Seattle, found that participation in service-learning had a small but significant influence on students' development of social responsibility, academic engagement, and interest in careers associated with the service-learning project. Effect sizes were also in the low range.

Across these studies, the quality indicators as a group predicted outcomes, and those students in high-quality service-learning programs defined by the K-12 quality standards experienced significantly higher outcomes than those who participated in low-quality service-learning and those who did not participate in service-learning. The quality standards that tended to have the highest effects, in descending order, were duration and intensity; meaningfulness of the service to the participant; link to curriculum; and in-depth and frequent reflection.

Celio, Durlak, and Dymnicki (2011) also found that programs featuring more of the quality standards had higher student outcomes, with the effect sizes ranging from 0.17 for no recommended practices to 0.35 for four recommended practices. Not all of the mentioned previously studies included measures of recommended practices; in fact, reflection was the only recommended practice included in at least half of the studies.

The IB Study

This study investigated the types of service in which IB students in various countries in the Americas participate as part of their CAS requirement, and the perceived outcomes associated with participation. It also addressed the extent to which program design characteristics influenced perceived outcomes.

Research Questions

Specific research questions for this study included:

1. In what types of experiential learning activities and service are IB Diploma Programme students engaged to satisfy CAS requirements, and how do they vary by country?
2. What outcomes does participation in CAS have on IB students' personal development (confidence and acquisition of new skills) and development of leadership skills, and how do they vary by country?
3. What outcomes does participation in CAS have on IB students' civic development (specifically, civic attitudes, skills, sense of civic efficacy, ethic of service, and likelihood of continued volunteerism), and how do they vary by country?
4. In what ways, if any, do the K-12 standards for quality (alignment with curriculum, meaningfulness, voice, and reflection), shown to be most influential in other studies, influence outcomes?

Sample

IB Global Research randomly selected schools from each country with IB Diploma Programmes to participate in this study. This random selection was based on proportionality of high schools in the region offering Diploma Programmes and was intended to yield relatively equal numbers of participants from Canada, the United States, and Central/South America. (Central America and South America were combined for the pool since there are far fewer IB Diploma Programmes in those countries than in Canada or the United States.) IB Global researchers invited 161 schools to participate; of these, 58 agreed to become part of the study. Participating schools were asked to request that all Diploma Programme students who engaged in service as part of their CAS requirement take the survey. Most schools asked students to respond to the survey—which was administered electronically in English and Spanish—during their CAS advisory class in the spring of 2013.

A total of 1,295 high school students were asked to complete the survey, and 962 did so, resulting in a 74.3% response rate. All the respondents were juniors or seniors in high school. South America (combined with Central America) was underrepresented, comprising 23% of the sample. When asked why some students did not participate, CAS coordinators indicated that the students were either absent on the day of administration, did not participate in the service component of CAS, or had not yet started their service activities.

Table 1 displays the geographic location by region (Canada, United States, Central/South America) of students who completed the survey. Nineteen countries were represented in the sample, which was skewed toward the United States, comprising about 45% of the sample. Results were analysed by region. For most of the analyses presented here, responses from students in Central and South America were combined since the range of responses for students in the various countries in the sample did not vary substantially on the analyses presented here.

Table 1. Geographic Location of Respondents

Country/Territory	Student Survey	
	n	Percentage
Canada (North America)	294	30.6
United States (North America)	432	44.9
Central and South America (e.g., Mexico, Argentina, Brazil, Costa Rica, Columbia, Peru and 11 other countries)	220	23.8
Missing Response for Location	16	1.7
Total	**962**	**100.0**

About 83% of North American students and 89% of South American students attended public schools, similar to the percentages of students in these types of schools in the IB Diploma Programmes in the Americas. About 57% of North American students and 58% of South American students in this sample were female, compared to 51% of all participants in IB Diploma Programmes in the Americas. Females were overrepresented. Analysis showed no statistically significant differences between genders in responses to questions.

Methods

Student surveys elicited information on student demographics; types of CAS service activities in which students were engaged; quality of various aspects of the service program; and self-reported outcomes related to personal development, leadership, civic attitudes, civic behaviors, and development of an ethic of service measured in terms of attitudes and behaviors. As explained previously, survey items were based on the exploratory study and IB theory of action (Billig, 2013); as such, the scales were customized to what IB students and CAS coordinators identified as the subskills associated with each outcome area.

To determine content of service activities, students enrolled at the time in IB Diploma Programmes were asked to identify the types of service activities in which they participated during their junior year and their senior year of high school. Respondents selected either "yes" or "no" for each of the following categories of activities: animal welfare, political, culture/arts, education, environment, faith-based/religious, health issues, social services, sports, fundraising, and other. When respondents selected "yes" for any category, a longer list of specific activities was presented. Respondents were again asked to indicate "yes" or "no" regarding their participation. If respondents indicated they engaged in "other" types of activities, they were asked to provide a statement describing the activities.

Outcomes measures were based on the exploratory study (Billig, 2013). Personal development was measured by a subscale of items that examined students' self-reported confidence levels, acquisition of new or improved skills, or discovery of a new passion in life. Leadership included items such as ability to lead groups and to participate as an effective team member, compromising with others to reach goals, coming up with new ideas, and knowing how to make a good decision. Personal development and leadership (Spanish version) items were rated using a five-point agreement scale in which 1 = "strongly agree," 2 = "agree," 3 = "disagree," 4 = "strongly disagree," and 5 = "don't know." Don't know ratings were eliminated from the analysis. The English version of the leadership scale had a four-point response scale in which 1 = "no influence," 2 = "mild influence," 3 = "moderate influence," and 4 = "strong influence." Because the scales were different, data were analyzed separately for the English and Spanish version of the leadership measures.

Civic engagement was measured by scales assessing civic attitudes and civic skills. Civic attitudes were measured by items such as feeling that youth can make a positive difference in the world, thinking about needs of the community, and thinking about one's impact on society. Civic skills were defined as the development of skills related to meeting a community need, such as developing a plan to meet needs, developing skills to accomplish the work (e.g., learning how to tutor young children or how to run a recycling campaign), community organizing, and expressing a point of view to others. A five-point agreement scale (described previously) was used to indicate responses for attitudes; a four-point scale indicating how well they could perform a skill based on their service experience was used to measure civic skills.

For attitudes toward ethic of service, students were asked about their responsibility to improve the community or help others, and their ability to put aside self-interest in favor of a greater good. Regarding service of ethic behaviors, students were asked to rate how likely it was that they would continue to participate in service activities and helping others in need. These questions also used a five-point agreement scale described previously. The student survey included four items about likelihood of volunteering in the future, rated on a four-point scale in which 1 = "not at all likely," 2 = "somewhat likely," 3 = "likely," and 4 = "very likely." Finally, using the same scale, students were asked to rate the overall impact of participation on their personal, social, civic, and service attitudes and behaviors.

Program design characteristics for this study were those associated with high quality and higher outcome in the service-learning literature. High quality was associated with some of the K-12 Standards of High Quality Service-Learning Practice (NYLC, 2008) that had been found to be most strongly related to higher outcomes in the recent research literature, including meaningfulness, link to curriculum, student voice, and reflection.

Meaningfulness was measured by items related to the perceived importance and value of the service activities and the skills acquired. Link to curriculum was measured by a single item asking

students whether the coordinator established a connection between service and classroom subjects. Student voice was measured by the extent to which students made decisions about service or identified ideas for service activities. These subscales and items were rated on a five-point scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," 4 = "strongly disagree," and 5 = "don't know." Don't know responses were eliminated from the analysis.

Reflection was measured in terms of when reflection took place (i.e., before, during, or after service) and the frequency with which low- and high-depth reflection activities occurred. Low depth was defined as summary of activities and individual reflection. High depth was defined as reflection about impact on the community, impact on self, the extent to which service activities affected views of local, national, or global activities, verbal reflections, and opportunities to reflect with classmates or peers. Frequency items were rated on a three-point scale in which 1 = "never," 2 = "occasionally," and 3 = "frequently."

Surveys were piloted with students in different countries to ensure that the items measured similar constructs as understood within a student's culture. Only the leadership scale was modified to reflect differences in meaning in the English and Spanish versions of the scale. Scales were also tested for validity and reliability. Table 2 shows the internal reliabilities for the scales related to the findings reported here. Scales met the criteria for internal reliability, set at .7 for Cronbach's alpha.

Table 2. Internal Reliability of Scales

Scale	Student Survey	
	N of Items[1]	Cronbach's Alpha
Program Design Scales		
Meaningful Service	3	.87
Student Voice	2	.84
Depth of Reflection	8	.85
Outcome Scales		
Personal Development	7	.91
Leadership	---	---
English Version	12	.96
Spanish Version	12	.92
Civic Attitudes	6	.91
Civic Skills	6	.88
Ethic of Service (Attitudes)	6	.90
Ethic of Service Behaviors	4	.85

Descriptive data from student surveys were reported through frequency distributions and measures of central tendency (means and standard deviations). Differences in ratings by region were examined through analysis of variance (ANOVA) tests. The Pearson product-moment correlation was

[1] *N* is the total number in a sample. *n* is the number in a subsample.

conducted when examining the association between two measures. Effect sizes using Cohen's *d* were reported for any statistically significant finding. To examine moderating factors associated with program outcomes, a series of ANOVAs were conducted. Ratings of program design characteristics, including reflection, link to curriculum, student voice, meaningful service, and ethic of service along with respondent demographics were explored as moderators.

It is important to note the limitations of the methodology used. Surveys capture self-reported data and thus do not represent objective measures of the findings. While the surveys were triangulated with case-study data, readers should use caution in interpreting the findings.

Findings

Content of Service

The IB Diploma Programme allows students to choose any type of service to fulfill the CAS requirement. Similar to findings from the service-learning research examined in the literature review, the most popular activities for high school students in the aggregate were related to education and fundraising, with 65% of all students participating in each of these activities. About 60% participated in activities related to culture/the arts, social services, and sports.

As seen in Figure 1, IB students in the United States and in South America were most often engaged in service related to education, while Canadian students most often participated in service related to fundraising. South American students were much more likely than North American students to participate in service related to environmental stewardship.

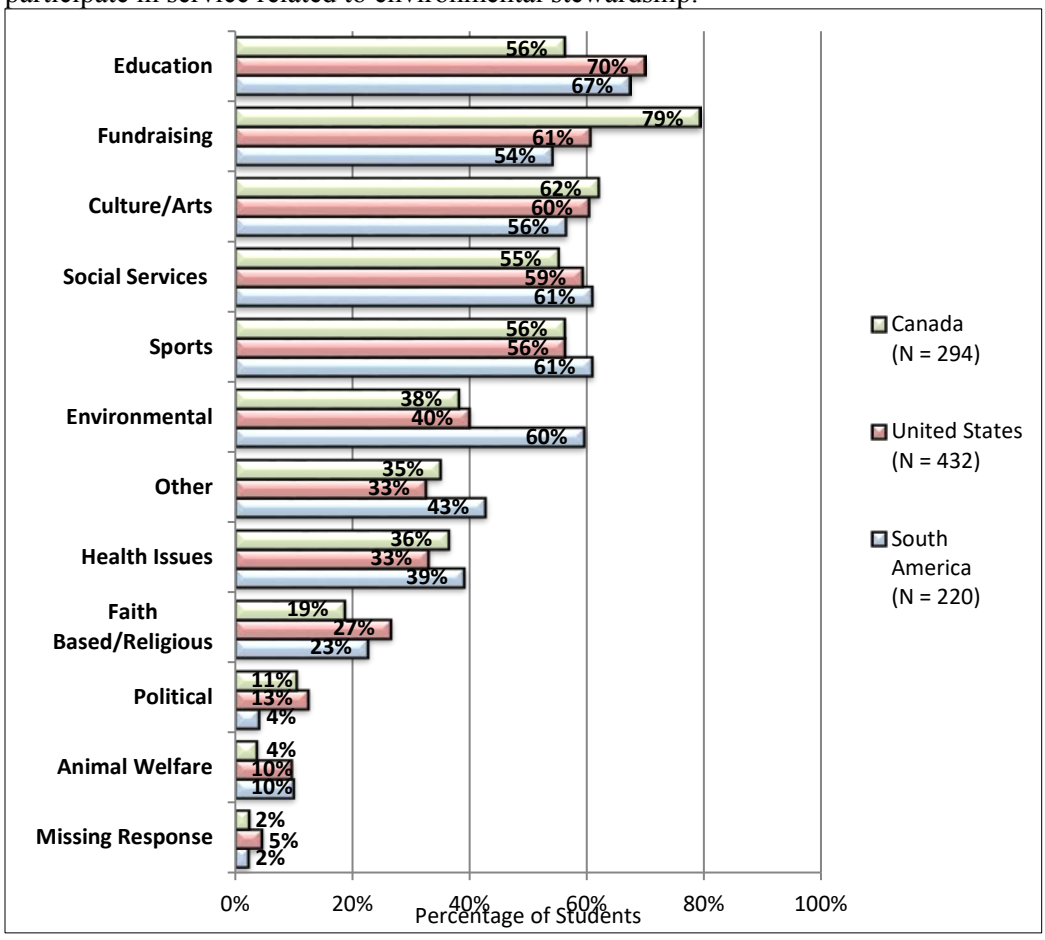

Figure 1. CAS activities conducted by IB students by region. Note: Percentages do not sum to 100 because students could select more than one activity.

Student Outcomes Related to Participation

Personal development. Table 3 shows that participation in CAS had a moderate influence on personal development across the sample as measured by self-reported agreement scales. Students from Canada and the United States reported a higher level of influence on personal development measures compared to students from South America. Differences between Canadian and South American student responses were statistically significant with a small effect size (*df* = 1,955, F = 7.276, *p* = .001, ES = 0.35). In general, students were most likely to agree that they learned a new skill or improved on one they already possessed; they were least likely to examine beliefs about themselves.

Table 3. Influence of Participation in CAS on IB Students' Personal Development

	Canada			United States			South America			All Students[a]		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Personal Development Subscale	**268**	**3.12**	**.59**	**373**	**3.05**	**.64**	**200**	**2.89**	**.68**	**854**	**3.03**	**.64**
I re-examined my beliefs and attitudes about myself.	251	2.98	.80	361	2.85	.83	190	2.75	.85	815	2.87	.83
I did things I never thought I could do.	258	3.02	.84	368	2.91	.84	198	3.05	.85	837	2.98	.85
I am more confident.	257	3.16	.76	360	3.06	.81	190	2.94	.90	819	3.07	.82
I improved on a skill I already possessed.	261	3.24	.69	366	3.17	.73	188	3.04	.87	827	3.16	.76
I learned a new skill.	261	3.27	.69	367	3.17	.74	193	2.83	.90	834	3.12	.78
I discovered a new goal and/or passion in life.	247	3.00	.86	355	2.99	.87	181	2.59	.98	795	2.90	.91
I am a more "well rounded" person.	255	3.16	.76	351	3.18	.76	187	2.98	.86	805	3.13	.79

Note. Students rated items on a five-point Likert scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," and 4 = "strongly agree" (5 = "don't know," and was excluded from analysis).
[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scales.

Leadership skills. On the English version of the leadership scale, IB students overall perceived the CAS requirement as having a mild to moderate influence on their leadership skills, as reflected in a self-administered survey (Table 4). There was variation between ratings across regions, with Canadian students having a statistically significantly higher mean rating than students from South America, with small effect sizes (*df* = 1,955, F = 5.934, *p* = .003, ES = 0.19). Students were mostly likely to say that taking on various roles and responsibilities and working as a team were most likely to have been influenced.

Table 4. Influence of Participation in CAS on IB Students' Leadership Skills (English Scale)

	Canada			United States			South America			All Students[a]		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Leadership Subscale	**268**	**2.94**	**.83**	**367**	**2.85**	**.84**	**44**	**2.83**	**.72**	**690**	**2.89**	**.83**
Talking about my ideas in front of other people.	264	2.83	1.06	360	2.61	1.07	44	2.77	.96	678	2.72	1.06
Writing about my ideas.	266	2.59	1.08	365	2.63	1.07	44	2.43	1.04	686	2.61	1.07
Working as part of a team.	266	3.18	.92	364	2.97	1.00	43	3.09	.97	684	3.07	.97
Finding ways to solve problems.	266	3.00	.96	365	2.95	.98	44	2.98	.93	685	2.97	.97
Figuring out how to make a good decision.	264	2.95	1.00	363	2.87	1.00	42	2.98	.87	680	2.91	.99
Coming up with new ideas.	265	2.92	.99	365	2.85	.95	42	2.81	.86	683	2.88	.96
Being the leader of a group.	261	3.03	1.01	367	2.98	1.04	43	2.74	.93	682	2.99	1.02
Listening to other people's ideas even if they are different from mine.	262	2.90	1.06	363	2.89	1.02	43	2.95	.82	679	2.91	1.02
Asking others to explain their ideas or points of view.	261	2.89	1.01	362	2.76	1.00	43	2.67	.87	676	2.81	1.00
Compromising with other people to reach a common goal.	264	2.99	.96	364	2.80	1.01	43	2.91	.87	682	2.89	.99
Taking on different roles and responsibilities.	263	3.14	.95	366	3.00	.98	43	2.91	.90	683	3.05	.96
Leading a group toward a common goal.	261	2.87	1.00	364	2.85	1.04	43	2.72	.93	679	2.85	1.02

Note. Students rated items on a four-point Likert scale in which 1 = "no influence," 2 = "mild influence," 3 = "moderate influence," and 4 = "strong influence."

[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scales.

The mean rating from South American students taking the Spanish version of the survey is presented in Table 5, which shows that IB students agreed that the CAS requirement had a positive influence on their leadership skills. Students reported moderate levels of influence and had higher average

ratings than those who took the English version. Those taking the Spanish version of the scale also mentioned greater influence on their ability to work in teams and related items.

Table 5. Outcome of Participation in CAS on IB Students' Leadership Skills (Spanish Scale)

	South America		
	N	*M*	*SD*
Leadership Subscale	**157**	**3.11**	**.60**
Talking about my ideas in front of other people.	153	2.94	.82
Writing about my ideas.	152	2.88	.89
Working as part of a team.	155	3.36	.72
Finding ways to solve problems.	154	3.27	.75
Figuring out how to make a good decision.	150	3.01	.81
Coming up with new ideas.	153	3.14	.74
Being the leader of a group.	147	3.01	.86
Listening to other people's ideas even if they are different from mine.	152	3.24	.75
Asking others to explain their ideas or points of view.	150	3.04	.83
Compromising with other people to reach a common goal.	152	3.23	.76
Taking on different roles and responsibilities.	157	3.20	.71
Leading a group toward a common goal.	150	2.95	.84

Note. Students rated items on a four-point Likert scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," and 4 = "strongly agree." (5 = "don't know," and was excluded from analysis). Bolded text indicates composite scales.

Civic attitudes. Table 6 shows that students reported a small influence of participation in service-learning on their civic attitudes. Influence was larger for items measuring exposure to new ideas and learning about the real world and smaller for changing students' thinking. There were no statistically significant differences between students in different regions.

Table 6. Influence of Participation in CAS on IB Students' Civic Attitudes

	Canada			United States			South America			All Students[a]		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Civic Attitudes Subscale	**269**	**3.05**	**.61**	**373**	**3.00**	**.67**	**201**	**3.01**	**.66**	**856**	**3.02**	**.65**
I was exposed to new ideas and ways of seeing the world.	262	3.23	.70	368	3.13	.77	197	3.23	.77	840	3.19	.75
I learned about the "real" world.	256	3.05	.79	364	3.03	.81	196	3.21	.81	829	3.08	.81
I changed some of my	257	2.88	.83	359	2.80	.84	190	2.67	.88	818	2.80	.85

beliefs and attitudes.												
I think about the needs of my community differently.	261	3.04	.77	367	3.04	.78	193	3.02	.85	834	3.04	.79
I think about issues related to the activity I worked on differently.	256	3.02	.74	365	3.01	.77	191	2.92	.85	825	2.99	.78
I think about my impact on society differently.	254	3.02	.75	365	2.98	.80	190	2.99	.83	821	3.00	.79

Note. Students rated items on a four-point Likert scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," and 4 = "strongly agree" (5 = "don't know," and was excluded from analysis).
[a] The All Students column includes the 16 students who did not indicate their country, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scales.

Civic skills. Students were asked to indicate how well they could perform a set of civic-related behaviors or skills based on their CAS experience. Table 7 reveals that most students reported they could accomplish most tasks "well" or "moderately well" based on their experience with CAS. There were no regional differences in responses to this measure. This particular measure should be interpreted with extreme caution since respondents may not have linked the CAS experience to the skill.

Table 7. Influence of CAS Participation on IB Students' Civic Skills

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Civic Development Skills	**259**	**3.05**	**.68**	**369**	**3.08**	**.68**	**198**	**3.05**	**.66**	**838**	**3.07**	**.67**
Develop a plan to address the need.	253	2.98	.85	365	3.04	.83	193	3.00	.85	823	3.01	.84
Convince others to help.	255	2.93	.86	365	2.97	.86	196	3.08	.83	828	2.99	.85
Organize and run a meeting.	254	3.07	.92	363	3.09	.86	194	3.03	.92	823	3.07	.89
Express your views in front of a group of people.	256	3.16	.88	362	3.17	.83	193	3.11	.85	822	3.15	.85
Develop a specific skill needed to accomplish the work (e.g., learn how to use tools or work with the elderly).	258	3.16	.78	364	3.18	.79	194	3.09	.87	828	3.15	.80
Develop a specific skill needed for community organizing.	252	3.03	.83	360	3.08	.82	188	3.01	.87	811	3.04	.84

Note. Students rated items on a four-point Likert scale in which 1 = "not very well," 2 = "moderately well," 3 = "well," and 4 = "very well."

[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scale.

Ethic of Service. Ethic of service was measured in terms of attitudes and behaviors. As demonstrated in Table 8, most IB students expressed positive attitudes about having an ethic of service. For example, in the aggregate, most students agreed that they had a responsibility to help improve the community. However, their responses did not translate as well into a likelihood of engaging in service-related behaviors, as displayed in Table 9. Comparison tests revealed there were no statistically significant differences between regions.

Table 8. Influence of Participation in CAS on IB Students' Civic Attitudes

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Ethic of Service (Attitudes) Subscale	**270**	**3.06**	**.53**	**379**	**3.13**	**.55**	**200**	**3.03**	**.57**	**862**	**3.08**	**.55**
It is my responsibilities to help improve the community.	270	3.00	.63	378	3.12	.63	199	3.05	.72	860	3.07	.66
Helping others is something for which I am personally responsible.	270	3.04	.67	377	3.09	.67	199	2.96	.73	859	3.04	.69
It is easy for me to put aside my self-interest in favor of a greater good.	268	2.95	.66	377	3.03	.66	198	2.92	.76	856	2.97	.69
Being concerned about regional or local issues is an important responsibility for everybody.	270	3.10	.68	377	3.14	.68	199	3.12	.69	859	3.12	.69
Being actively involved in community issues is everyone's responsibility, including mine.	267	3.08	.70	377	3.13	.67	199	2.99	.77	856	3.08	.71
I try to help when I see others in need.	269	3.20	.64	376	3.28	.64	199	3.13	.69	857	3.22	.66

Note. Students rated items on a five-point Likert scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," and 4 = "strongly agree." (5 = "don't know," and was excluded from the analysis.)
[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scale.

Table 9. Influence of CAS Participation on IB Students' Likelihood to Engage in Service-Related Behaviors

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Ethic of Service (Behaviors) Scale	**271**	**2.79**	**.78**	**376**	**2.92**	**.76**	**199**	**2.81**	**.75**	**859**	**2.86**	**.77**
Continue to participate in service-related activities.	271	3.05	.86	375	3.14	.83	199	2.97	.92	858	3.08	.86
Encourage others around you to participate in service activities.	269	2.88	.91	376	2.89	.89	198	2.88	.91	856	2.89	.90
Work with a group to solve a problem in your community.	269	2.85	.91	374	2.99	.86	199	2.95	.82	854	2.94	.87
Pursue a career related to your service activities.	271	2.38	1.04	373	2.66	1.08	198	2.41	1.06	855	2.51	1.07

Note. Students rated items on a four-point Likert scale in which 1 = "not at all likely," 2 = "somewhat likely," 3 = "likely," and 4 = "very likely."
[a] The All Students column includes the 16 students who did not indicate their country, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scale.

Overall impact. Finally, a series of survey items asked students to rate the extent to which their service participation impacted their personal development, social development (leadership), civic development (identifying community problems and ethic of service), and community development, which formed the overall-impacts scale. Ratings for the scale (see Table 10) revealed that students perceived their participation in service activities as having a small to moderate impact on them. Highest impact was reported for leadership skill development and ethic of service; lowest impact was reported for identifying solutions to community problems. No statistically significant differences were found between regions.

Table 10. IB Students' Perceptions of CAS Impact

	Canada			United States			South America			All Students[a]		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Overall Impacts Scale	**270**	**2.78**	**.78**	**376**	**2.81**	**.83**	**199**	2.81	.73	**858**	**2.81**	**.79**
Personal development such as developing more confidence in yourself.	270	2.85	.93	375	2.82	.95	197	2.64	.91	855	2.79	.93
Social development such as learning new leadership skills.	269	2.99	.87	375	2.93	.96	199	2.77	.95	856	2.91	.93

Civic development such as identifying solutions to community problems.	270	2.63	.95	371	2.70	.94	199	2.82	.86	853	2.71	.92
Civic development such as the willingness to engage in volunteerism in the future.	270	2.83	.90	374	2.86	.92	197	2.94	.95	853	2.87	.92
Community development such as meeting specific needs.	268	2.62	.91	374	2.76	.92	199	2.87	.84	854	2.75	.90

Note. Students rated items on a four-point Likert scale in which 1 = "no impact," 2 = "a small impact," 3 = "a moderate impact," and 4 = "a large impact."
[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scale.

Quality of Programming

As described in the literature review, several aspects of service-learning program design have been associated with high academic, civic, and social/personal impacts. This section describes the extent to which the qualities were present in IB CAS activities.

Meaningful service. Table 11 shows that students across the regions typically agreed that their service activities were meaningful. Students from Canada and from the United States were more likely than those from South America to indicate that their service activities were meaningful.

Table 11. IB Students' Perceptions of the Meaningfulness of Service

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Meaningful Service Activities Subscale	**275**	**3.35**	**.59**	**392**	**3.36**	**.64**	**204**	**3.21**	**.74**	**885**	**3.33**	**.65**
I feel that my service activities were meaningful.	271	3.40	.67	388	3.43	.70	199	3.22	.85	871	3.38	.73
The skills that I learned from my service activities were important to me.	264	3.31	.68	379	3.26	.74	201	3.19	.82	857	3.26	.74
My service activities were important to me.	264	3.35	.69	384	3.39	.70	198	3.24	.87	859	3.35	.74

Note. Students rated items on a five-point Likert scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," and 4 = "strongly agree." (5 = "don't know," and was excluded from the analysis.
[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scales.

Table 12 shows strong influence of the perception that activities were meaningful on every outcome area measured, with effect sizes considered to be large to very large on measures of personal development, civic development, ethic of service, and overall impacts.

Table 12. The Influence of Meaningfulness of Service on Perceived Outcomes

Moderator	Outcome Moderated	*df*	*F*	*p*	Cohen's *d*
Meaningful Service	Personal Development	1, 839	308.110	.001***	1.21
	Leadership	1, 839	185.095	.001***	0.94
	Civic Development (Attitudes)	1, 839	306.132	.001***	1.22
	Civic Development (Skills)	1, 839	132.026	.001***	0.80
	Ethic of Service (Attitudes)	1, 839	152.835	.001***	0.85
	Ethic of Service (Behaviors)	1, 742	211.221	.001***	1.07

*** $p < .001$.

Link to curriculum. IB students reported that the service activities they performed were not often linked to curriculum (Table 13). Linkage was somewhat more likely to be perceived in the United States and Canada than in South America.

Table 13. IB Students' Perception of Link to Curriculum

	Canada			United States			South America			All Students[a]		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Our CAS coordinator made sure we linked service activities to classroom subjects.	251	2.46	.89	361	2.48	.93	193	2.34	.88	818	2.45	.91

Note. Students rated items on a four-point Likert scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," and 4 = "strongly agree." [a] The All Students column includes the 16 students who did not indicate their country or territory

Analysis of the link to curriculum in the IB Diploma Programme showed that linkage had a positive influence on outcomes and a moderate effect size on the students. Table 14 shows that the highest effect was on overall impacts, civic development (attitudes), and personal development. Lowest effects were on the establishment of an ethic of service.

Table 14. The Influence of Link to Curriculum on Perceived Outcomes

Moderator	Outcome Moderated	*df*	*F*	*p*	Cohen's *d*
Link to curriculum	Personal Development	1, 966	48.486	.001***	0.44
	Leadership	1, 966	51.672	.001***	0.42
	Civic Development (Attitudes)	1, 966	47.848	.001***	0.45
	Civic Development (Skills)	1, 966	25.438	.001***	0.34

Moderator	Outcome Moderated	*df*	*F*	*p*	Cohen's *d*
	Ethic of Service (Attitudes)	1, 966	10.797	.001***	0.21
	Ethic of Service (Behaviors)	1, 854	23.289	.001***	0.33
	Overall Impacts	1, 966	49.618	.001***	0.46

*** $p < .001$.

Student voice. Students generally agreed that they had influenced the choices of service in which they participated, as shown in Table 15. There were statistically significant differences found between regions, with students from Canada and the United States reporting greater student voice than students from South America.

Table 15. IB Students' Perception of Student Voice

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Student Voice Subscale	**269**	**3.42**	**.61**	**389**	**3.39**	**.67**	**204**	**3.26**	**.67**	**875**	**3.37**	**.65**
I helped make decisions about my service activities.	264	3.44	.64	383	3.43	.70	191	3.20	.74	851	3.38	.70
I helped come up with ideas for my service activities.	263	3.40	.65	381	3.36	.73	199	3.32	.69	856	3.37	.780

Note. Students rated items on a four-point Likert scale in which 1 = "strongly disagree," 2 = "disagree," 3 = "agree," and 4 = "strongly agree." (5 = "don't know," and was excluded from the analysis.)
[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scales.

The extent to which students were provided a voice and choice in their activities also had a moderately high influence on all outcomes that were measured (Table 16).

Table 16. Influence of Student Voice on Perceived Outcomes

Moderator	Outcome Moderated	*df*	*F*	*p*	Cohen's *d*
Student Voice	Personal Development	1, 956	148.086	.001***	0.79
	Leadership	1, 956	82.075	.001***	0.58
	Civic Development (Attitudes)	1, 956	112.844	.001***	0.67
	Civic Development (Skills)	1, 956	109.993	.001***	0.69
	Ethic of Service (Attitudes)	1, 956	66.472	.001***	0.53
	Ethic of Service (Behaviors)	1, 840	113.974	.001***	0.74
	Overall Impacts	1, 956	127.808	.001***	0.73

*** $p < .001$.

Reflection. To assess the extent to which reflection occurred in their programs, students responded to a set of items that queried how frequently students were asked to engage in written or verbal reflection prior to, during, and after activities. The analysis also examined the depth of the reflection activities. Low depth was defined as providing a description of activities or engaging in individual reflection. High depth was defined as reflecting on the impact of service on the community, on oneself, and on the ways in which service affected one's views of local, national, or global issues. The extent to which reflections were written, verbal, and collaborative was also explored.

Students reported that most often they had occasional opportunities to reflect on their service. Fewer reflected before the service activity and most reflected after the activity. As shown in Table 17, statistically significant differences were found between regions in students' reflection activities before beginning service activities[2] and during service activities.[3] South American students reported a statistically significant higher frequency of reflection during these phases of service than their North American peers. IB students tended to rate low-depth and high-depth reflection strategies as occurring at about the same frequency. Most students indicated that they were asked to describe their experiences frequently and engaged in individual reflection either occasionally or frequently. There were regional differences in the depth of reflection: South American students were significantly more likely to engage in high-depth reflection activities than students from the United States, with a relatively high effect size of .87.[4]

Table 17. Extent to Which Students Engaged in Reflection Activities

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Frequency of Reflection Items												
I was asked to reflect on my service experience before beginning any service activities.	274	1.65	.66	396	1.73	.73	205	2.17	.74	888	1.80	.74
I was asked to reflect on my service experience during my service activities.	275	2.11	.68	395	2.15	.73	205	2.32	.72	888	2.17	.72
I was asked to reflect on my service experience after the service activities were completed.	277	2.56	.62	395	2.49	.60	204	2.56	.65	889	2.53	.62

[2] Reflection before beginning any service activities: $F(2, 872) = 36.107$, $p < .001$. Ratings from South American students ($M = 2.17$, $SD = .74$) were higher than ratings from Canadian students ($M = 1.65$, $SD = .66$) and United States students ($M = 1.73$, $SD = .73$), with moderate effect sizes, $p < .001$ and $d = .75$, and $p < .001$ and $d = .60$, respectively.

[3] Reflection during service activities: $F(2, 872) = 5.775$, $p < .01$. Ratings from South American students ($M = 2.32$, $SD = .72$) were higher than ratings from Canadian students ($M = 2.11$, $SD = .68$) and United States students ($M = 2.15$, $SD = .73$), with small effect sizes, $p < .01$ and $p < .05$, respectively, and $d = .30$ and $d = .23$, respectively.

[4] High depth of reflection: $F(2, 876) = 3.971$, $p < .05$. Ratings from South American students ($M = 2.18$, $SD = .48$) were higher than ratings from United States students ($M = 2.07$, $SD = .51$), with a large effect size, $p < .05$, $d = .87$.

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Low Depth of Reflection Items												
I was asked to provide a description of what I did during my service activities.	275	2.46	.62	396	2.49	.63	203	2.48	.65	887	2.48	.63
I was asked to reflect about my service activities individually.	277	2.29	.65	391	2.25	.71	203	2.31	.72	884	2.27	.70
High Depth of Reflection Subscale	**277**	**2.13**	**.45**	**397**	**2.07**	**.51**	**205**	**2.18**	**.48**	**892**	**2.11**	**.49**
I was asked to reflect on how my service experience may have impacted those I served or the community I served.	277	2.32	.64	396	2.31	.65	205	2.40	.66	891	2.33	.65
I was asked to reflect on how my service experience impacted me personally.	277	2.45	.60	395	2.38	.65	205	2.42	.69	890	2.41	.65
I was asked to reflect on how my service experience affected my views of local issues.	276	2.07	.70	395	2.05	.70	205	2.07	.75	889	2.07	.71
I was asked to reflect on how my service experience affected my views of national issues.	277	187	.70	397	1.86	.70	204	1.89	.74	891	1.87	.71
I was asked to reflect on how my service experience affected my views of global issues.	277	200	.72	396	1.88	.70	201	1.77	.73	887	1.89	.72
I engaged in written reflection about my service activities.	277	2.49	.59	392	2.43	.62	204	2.45	.69	886	2.45	.63
I engaged in verbal reflection about my service activities.	276	193	.71	394	1.79	.76	204	2.24	.71	887	1.95	.75

	Canada			United States			South America			All Students[a]		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
There were opportunities for me to reflect on my service activities with my peers/classmates.	276	1.89	.66	393	1.84	.72	204	2.22	.67	886	1.94	.71

Note. Students rated items on a three-point Likert type scale in which 1 = "never," 2 = "occasionally," and 3 = "frequently."
[a] The All Students column includes the 16 students who did not indicate their country or territory, and is therefore larger than the sum of Canada, United States, and South America. Bolded text indicates composite scales.

The frequency and depth of reflection experienced by IB students had a small to moderate impact on outcomes. Table 18 shows the influence of being asked to engage in reflection before, during, and after service. All reflections had a positive influence on most of the outcomes measured, with effect sizes in the low to moderate ranges. The relationship between personal development and ethic of service attitudes only appeared with reflection during and after service, and not with reflection before service, suggesting that the service itself had more of an influence on outcomes than any pre-reflection activities that may have taken place. Overall, the effect size for reflection appears to be highest in relation to leadership and overall impacts.

Table 18. Influence of the Timing of Reflection on Perceived Outcomes

Moderator	Outcome Moderated	*df*	*F*	*p*	Cohen's *d*
Reflection before service	Leadership	1, 963	26.164	.001***	0.42
	Civic Development (Attitudes)	1, 963	11.965	.001***	0.28
	Civic Development (Skills)	1, 963	17.278	.001***	0.33
	Ethic of Service (Behaviors)	1, 852	13.372	.001***	0.32
	Overall Impacts	1, 963	25.653	.001***	0.41
Reflection during service	Personal Development	1, 965	25.368	.001***	0.34
	Leadership	1, 965	39.901	.001***	0.43
	Civic Development (Attitudes)	1, 965	32.577	.001***	0.38
	Civic Development (Skills)	1, 965	29.823	.001***	0.37
	Ethic of Service (Attitudes)	1, 965	3.891	.049*	0.13
	Ethic of Service (Behaviors)	1, 852	25.056	.001***	0.36
	Overall Impacts	1, 965	47.313	.001***	0.46
Reflection after service	Personal Development	1, 964	24.092	.001***	0.32
	Leadership	1, 964	21.081	.001***	0.31
	Civic Development (Attitudes)	1, 964	19.727	.001***	0.28

Moderator	Outcome Moderated	*df*	*F*	*p*	Cohen's *d*
	Civic Development (Skills)	1, 964	22.713	.001***	0.32
	Ethic of Service (Attitudes)	1, 964	14.231	.001***	0.25
	Ethic of Service (Behaviors)	1, 853	29.439	.001***	0.39
	Overall Impacts	1, 964	31.031	.001***	0.36

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 19 demonstrates that depth of reflection activities had a fairly strong influence on perceived outcomes, especially on overall outcomes and ethic of service, as shown in behaviors and likelihood of future volunteering. Reflection with more depth included prompts that asked students to reflect on the ways in which service helped them develop personally and affected their views on local, national, or global issues. Effect sizes for high-depth reflection activities were in the moderate to high range.

Table 19. Influence of High-Depth Reflection Activities on Perceived Outcomes

Moderator	Outcome Moderated	*df*	*F*	*p*	Cohen's *d*
High Depth of Reflection	Personal Development	1, 967	69.868	.001***	0.54
	Leadership	1, 967	80.167	.001***	0.57
	Civic Development (Attitudes)	1, 967	71.612	.001***	0.55
	Civic Development (Skills)	1, 967	65.963	.001***	0.53
	Ethic of Service (Attitudes)	1, 967	46.176	.001***	0.30
	Ethic of Service (Behaviors)	1, 856	77.089	.001***	0.60
	Overall Impacts	1, 967	24.268	.001***	0.68

*** $p < .001$.

Discussion

This study of the CAS experiences of IB students described the types of service performed, the perceived influence of participation on likely social-emotional and civic outcomes, and the influence of program design characteristics identified in the research literature on the outcomes identified by the students. As noted earlier, caution should be exercised in interpreting the results since the study only included self-administered surveys.

Content of Service

This study showed that IB high school students most frequently participated in education-related service and fundraising to fulfill their service requirement. Their preference of working in education was similar to the top choices in the United States in the 2011 Learn and Serve study. Fundraising was not mentioned in that study, though, perhaps because fundraising was connected to the issue for which funds were being raised in the Learn and Serve report; thus, it is possible that there are no differences in service content between the past and present. This issue should be investigated in future studies. The literature suggests that students in countries other than the United States tend to focus their efforts on environmental issues. The data from this study show that students from South America were much more likely than their North American peers to provide service in that area. This likely reflects the differing

emphasis on the environment related to the cultures in which the students reside. Again, further investigation is warranted, however, before this hypothesis can be confirmed.

Quality of Program Design

This study revealed that much of the service-learning offered by IB schools is of mixed quality as defined by the K-12 Service-Learning Standards for Quality Practice (NYLC, 2008). According to student surveys, IB tends to provide students with meaningful experiences, voice in selecting service activities, and reflection experiences. However, there is too little linkage to curriculum, and the reflection activities tend to be less frequent than recommended and have less depth than needed to produce higher outcomes..

Perceived Outcomes

Overall, IB students expressed a wide variety of perceived outcomes related to their participation in service or service-learning. Compared to the outcomes experienced by other high school students, IB student surveys showed an equivalent or higher level of outcomes overall, but not in all areas measured. For example, compared to studies of high school students from Philadelphia (Billig, Jesse & Brodersen, 2008), IB students typically experienced lower outcomes in the areas of personal development and acquisition of leadership skills. However, the samples were not equivalent: The sample for the national study focused on students from high-poverty schools with many low-performing students. IB students may have had higher personal development and leadership skills at the outset and thus identified a lesser impact in these areas. In addition, outcomes in the Philadelphia study were measured pre/post. Because there were no baseline data collected for this study, it is not possible to determine whether baseline was higher for IB students, though other studies suggest that IB students have a high self-concept (Cooker, Bailey, Stevenson, & Joseph, 2016).

IB students also reported fewer outcomes in civic engagement and civic skills than other studies have found (e.g., Billig, Jesse, & Brodersen, 2008). There are several possible reasons for this. First, as previously mentioned, the samples were different, and this was not a pre/post study. The methodology itself may have influenced the extent to which outcomes can be compared. Second, the CAS program is not intentional about linking service to social issues and does not consistently include prompts to help students make these connections during reflection activities. Third, many of the service activities in which students engage are not "civic" in the sense that the majority of activities involve education (tutoring/mentoring), fundraising, and other activities that do not have a specific civic orientation. In addition, service did not often involve any direct contact with those being served, such as when students engaged in fundraising but never interacted with those for whom the funds were being raised. Finally, the lesser civic outcomes may also have been affected by the lack of implementation of the final two components of the service-learning "arc," where demonstration/celebration of the influence of participation in service on self and others takes place, and the lack of quality practices in many of the experiences that students had.

IB students were also less likely to develop an ethic of service than high school students in other studies (e.g., Billig, Jesse & Brodersen, 2008; Billig, Northup & Jaramillo, 2012; Fredericks, 2012). Again, the methodology used may explain this finding. Other possibilities are that the IB students felt they were "required" to perform service—mandatory service has been found to have weak links to promotion of an ethic of service (Sparks, 2013); the service was not meaningful to many of the participants; and other quality practices associated with high outcomes were not present. As shown in the data, higher outcomes were realized when the quality practices were in place.

The Influence of Program Quality

This study affirmed that quality of program design matters, suggesting that the more meaningful the service, the higher the outcome of participation. Similarly, stronger linkage to curriculum, more student voice and choice in activities, and higher quality reflection activities were related to higher

outcomes in nearly all of the outcome areas measured. The effect sizes for these moderators were in the moderate to large range and were higher than in most other studies, where the effect sizes have tended to be in the moderate to low range (e.g., Billig, Jesse, & Brodersen, 2008; Billig, Northup & Jaramillo, 2012). This may be because of the particular sample of students in the study, the types of reflection activities facilitated by CAS coordinators, the choices students had in selecting the service they could provide, to name a few factors. Much more research is needed to understand the context in which program design characteristics influence outcomes.

Conclusions

This study showed that students in IB Diploma Programmes perceived that they became more civic-minded, as defined by the IB theory of action. They reported that they developed some personal and leadership skills, had more positive civic attitudes, developed some civic skills, and were somewhat more likely to develop an ethic of service. The strength of all outcomes was improved if students perceived their activities as meaningful, linked to curriculum, included student voice and choice, and incorporated elements of in-depth reflection that included, for example, discussion of impact on self and community, and shared discussion with peers.

The study, however, is more suggestive than definitive due to strong methodological limitations surrounding the use of self-reported survey data. Even so, while this study is limited by its methodology and in its generalizability to high school students in IB programs, it does provide some evidence to support the more general findings around the outcomes of service-learning on high school students and the moderating effects of several of the K-12 standards for service-learning quality. This research also begins to compare the effects of service-learning participation in various regions of the world. Much more study is needed to test hypotheses suggested by this research and to extend the learning from the study.

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