

Heads, Hearts, and Hands:

The Research on K-12 Service-Learning

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If you were going on a weight-loss diet, as so many of us have, you would ask a few hard questions about any program that a friend or physician suggested. First, you would want to know what the diet is ("Atkins? South Beach? What's that?"). Next, you would want to know if it works ("How much weight have people lost on that diet? Really?!"). Finally, you might ask, "What do I need to do to make it work best?" – Or perhaps, "How do I know it will work for me?" (e.g., "I don't like some of these foods. What should I do?" "But what if I'm traveling? Then what do I do?" or "I don't eat meat. What about me?") There are probably lots of other questions you might ask, but these are most likely the big three.

So it goes with service-learning. If you call an educator, parent, or policy-maker who does not know anything about service-learning, but cares about education, they will probably ask you the same three questions:

- What is it? (the "it" is service-learning);
- Does it work? Does it produce the outcomes we are seeking?
- What does it take to make it work best? (And/or, will it work for me?)

In this article, the research on service-learning that has been completed in the past few years will be summarized. The article will show how educators, researchers, and the general public have begun to define the "it," that is, the essence of service-learning. It will address how the research has begun to converge on the effects that service-learning appears to have on students in three domains: cognitive ("heads"), affective ("hearts"), and behavioral ("hands"), along with effects on schools and communities. Finally, the article will look at what the research has begun to discover on the aspects of quality programming. That is, what do we want to do within the experience of service-learning that helps us to maximize outcomes? More plainly, how to make it work best? The paper will culminate in a discussion about the conditions under which different "quality indicators" matter. (How can I make it work best for me?) As you will discover, none of these issues is easy, but the research community is beginning to make headway. In addition, researchers are recognizing how important it is for their work to be translated into advice for service-learning programs. This article will attempt to do that, too.

Definitions of Service-Learning

Over the past several years, the literature shows that there is still some misunderstanding among researchers, the general public, and even practi-

tioners of what service-learning *is* and *is not*. The biggest confusion appears to lie in the distinctions between service-learning and community service.

Confusion Between Community Service and Service-Learning. Pritchard (2002) provided both insight and data to help draw the distinctions between the concepts and to shed light on current practice in the United States. He analyzed three data sets: the 1999 U. S. Department of Education study that examined prevalence of community service and service-learning in public schools in the United States, the "Service-Learning Survey" that examined prevalence in private schools, and the 1999 National Household Education Survey that examined prevalence in both types of schools.

These surveys showed that at least some students in 68 percent of all public schools, and in 88 percent of all private schools, participated in either service or service-learning. Rates were lowest in elementary schools and highest in high schools. In terms of student participation, the National Household Education Survey showed that over half of the public school students in the sample were found to participate in service or service-learning and that the percentages of private school students that participated were even higher. Of those who said they provided service, about half said they participated in service-learning. The conclusion was that

about *one quarter of all students* participate in service-learning and about *three-quarters of all schools* participate in service-learning.

Pritchard (2002), however, goes on to show that these statistics may be a little misleading since they are based on different definitions of community service and service-learning. In the survey of public schools administrators, for example, Pritchard reported that when respondents were asked to use a definition of service-learning that included clearly identified learning objectives, student involvement in selecting or designing the service activity, a theoretical base, integration of service with academic curriculum, and student reflection, the *percentage reporting that their schools were engaged in service-learning fell to 32 percent*.

In the private school study, respondents were asked to say whether they were engaged in service or service-learning, but no definitions were given. In that study, only 9 percent described their programs as service-learning. Surprisingly, though, a large number who said that they were engaged in community service and not service-learning said that the community service included curricular integration (62 percent); connection to an academic class (26 percent); student reflection (61 percent); and students designing service projects (61 percent).

Same activities, same emphasis. Another indicator that the two concepts were being confused with each other was the way in which activities were described as either community service or service-learning. The activity lists were nearly identical



for the two terms. Whether their programs were called community service or service-learning, most students engaged in tutoring, providing companionship, working on environmental issues, and distributing food or other goods. In both types, educators focus on the relationship between the community and the student service provider.

Different objectives. The objectives identified for the activity, however, differed somewhat, but only among administrators. Community service activities were more often associated with civic engagement and caring/altruism while service-learning was more often connected to learning critical thinking skills, problem-solving, and other cognitive or academic outcomes.

Other researchers have found similar results when examining the varieties of objectives associated with service-learning. Ammon (2002), for example, studied service-learning implementation among teachers in California. While all of the

teachers called their approach “service-learning,” there were sizable variations in learning objectives, activities, program components, and teacher roles. In her study, more teachers mentioned application of disciplinary knowledge and awareness of social or civic issues as being part of the defining characteristics of service-learning. These teachers tended to be less focused on social/personal development and career development skills. However, there were 29 different categories of objectives that were identified. Probing these results, she found that the design and implementation of service-learning activities appeared to be influenced by:

- The clarity and specificity of teachers’ goals;
- The degree to which the goals were discussed with students;
- The roles established for teachers and students; and
- The connection with activities and content in specific curricular areas.

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Conclusion. These analyses by Pritchard and Ammon shed some light on the variations in definitions apparent among different stakeholder groups. A quick scan of the research literature affirms this result: practitioners, policy-makers, and researchers simply do not define service-learning in consistent ways. *So the answer to the question, “What is service-learning?” appears to vary depending upon whom you ask.*

Effects of Service-Learning on Participating Students

In 2000, a summary of the research literature (Billig, 2000) showed that the evidence of the positive effect of service-learning on participating students was beginning to build in four areas:

- **Academic or cognitive domains** – that is, what students were learning in terms of content or higher-order thinking skills as a result of their participation;
- **Civic domains** – that is, connection to society and community;
- **Personal/social domains** – that is, personal and interpersonal development in areas such as youth empowerment, respect for diversity, self-confidence, and avoidance of risk behaviors; and
- **Career exploration skills** – such as knowledge of career pathways and workplace literacy.

The results summarized in that article have found a good deal of support in more recent studies that have been conducted. New studies in each of these domains will be summarized next.

Cognitive/academic impact (“heads”)

Because service-learning generally occurs within the school environment, there is great interest in identifying the academic or cognitive outcomes of participation. The emphasis on this aspect of service-learning has grown in the current educational context that strongly stresses school accountability and standards-based education. The No Child Left Behind Act of 2001 has been shown to have a strong impact on schools and instructional decision making through its accountability provisions (Hess, 2003), especially in terms of the relative emphasis of content area instruction (with a heavier emphasis on reading/language arts and mathematics) and on the need to devote less time to subjects that are not considered to be part of the core curriculum. However, many schools and school districts (see, e.g., Berman, 2000; Education Commission of the States, 2001) have embraced service-learning as a key part of their educational reform efforts, either as a strategy for cognitive development, for revitalizing the civic mission of schools, or for helping to develop character and other traits.

There are still only a limited number of studies that have been conducted to show the academic impact of service-learning, though there are more that are underway. The few studies that have been performed have promising results.

Michigan Learn and Serve Study: A study of Michigan Learn and Serve sites conducted by RMC Research (Billig & Klute, 2003; Klute & Billig, 2002) examined the impact of participation on students’ school engagement and on performance on the state assessment, the Michigan

Educational Assessment Program (MEAP). Survey responses on school engagement scales, and test scores of students who were engaged in service-learning, were compared with a group of students from similar sites who did not participate in service-learning. The study had 1,988 student respondents, 1,437 of which participated in service-learning. Teachers who facilitated service-learning activities also responded to a survey to determine the service-learning content and quality.

Results from this Michigan study showed that service-learning students in Grades 7–12 were more engaged cognitively in English language arts than comparison students. No differences were found in other areas of affective or cognitive engagement, and service-learning students were behaviorally less engaged than comparison students (e.g., paying attention in class and turning homework in on time). For younger students, Grades 2–5, there were statistically significant differences in all aspects of cognitive engagement, with service-learning students more engaged than their nonparticipating peers. This meant that service-learning students were more likely to pay attention to schoolwork, concentrate hard on learning, and try as hard as they could in class.

The study also showed that service-learning was positively associated with test scores on the MEAP for students in the fifth grade. Compared to nonparticipating students, statistical tests show that service-learning students scored significantly higher on the writing test, the total social studies score, and three of the social studies strand scores: historical perspective, geographic perspective, and inquiry/decision-making. The differences in test

scores between the two groups also approached positive statistical significance on the earth science test. No significant differences were found among students at the other grade levels tested.

Philadelphia Need in Deed Study: In another study by RMC Research, 6th-grade students who participated in Need in Deed, a service-learning programmatic approach that was implemented in Philadelphia, were found to have statistically significantly higher test scores on the Terra Nova, a standardized test, in the areas of language arts and science. The same effects were not found, however, for 4th- and 8th-grade participants. Qualitative data revealed that some of the differences might be explained by the content of the service-learning activities and the quality of the service-learning experiences.

California Comparison Study: A study by Furco (2002) compared high school students who participated in service-learning with students who performed community service, those who engaged in service-based internships, and those who performed no service at all. The study addressed several domains, one of which was academic. For this study, academic outcomes were defined in terms of mastery of course content, thinking and problem-solving skills, and attitudes toward learning. Data analysis showed that students engaged in any type of service had significantly higher scores on surveys that measured attitude toward school, though some of the differences may be explained by gender and school site (where students generally were more negative). The service-learning group scored

higher in all of the academic measures, though significant differences were only found between the service-learning condition and the “no-service” condition, and not between service-learning and community service or service-based internships. Ammon, Furco, Chi, and Middaugh (2001) found that the factors that seemed to be related to higher academic impacts were clarity

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of academic goals, clear connections between goals and activities, reasonable scope, and support through focused reflection activities.

New England CO-SEED Sites: RMC Research (Klute, 2002) studied four sites in three New England states to determine the impact of participation in CO-SEED, an environmental

stewardship service-learning program, on state achievement scores. The analysis showed that New Hampshire students in the sixth grade had significantly higher achievement scores on the state assessments in the areas of language arts, mathematics, science, and social studies than their past averages. No differences were found for 3rd-grade students. Vermont 6th-grade participants also scored slightly higher and 2nd-grade students scored much higher in reading and word analysis. No other differences were found. The author suggested that the differences in outcome might have been related to the degree of quality implementation at the sites. There was also a general lack of agreement with a survey item that asked whether participation in projects related to the environment would help increase scores on standardized achievement tests.

Alternative Schools Studies: Two studies were performed with alternative school students as the primary respondents of the study. Laird and Black (2002a) compared the academic outcomes of students in an alternative school in Michigan that implemented the Literacy Corps, a service-learning tutoring program, with students who were on the waiting list for the alternative school. Literacy Corps participants had statistically significant positive differences from non-participants in overall grade-point average, English grades, and math grades, and slightly higher scores on the MEAP in science. Kraft and Wheeler (2003) interviewed students and tracked achievement of students in a Kansas alternative school. Qualitative data showed a strong difference over time in attitude toward school and learning, and positive increases on a six-trait

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writing assessment, changes in scores on a set of reading level indicators, and grade-point averages. No comparison groups or baseline measures were used, however.

Study of “At-Risk” Students: Hecht (2002) conducted a study of Delaware students who were educationally “at risk” because they were retained or administratively assigned to seventh or eighth grade. These students read to pre-schoolers at a local community center as part of their English language arts class. In interviews, observations, and document reviews, Hecht demonstrated that students who engaged in service-learning found unexpected enjoyment and fun in their participation. All students described the program in positive terms, showing that service-learning appeared to increase their engagement in school.

Waianae, Hawaii, Study: Billig and Meyer (2002) and Billig, Meyer, and Hofschire (2003) conducted research on the Hawaiian Studies Program in Waianae, Hawaii. Students in this program engaged in a variety of service-learning rotations that focused on connecting them with the community and their cultural heritage. Compared to their peers at the same schools, service-learning participants were statistically significantly more likely to think school was stimulating. At the “trend level,” they were also more likely to say that school was interesting and fun. In focus groups, these students most often said that their participation resulted in learning practical knowledge and skills, and learning about the Hawaiian culture.

Flint, Michigan, Study: A study by Smartworks Incorporated (n.d.) surveyed service-learning students in Flint, Michigan, in Grades 3, 5, 8, and 10 about their learning. More than two-thirds reported that their participation helped them understand what they were learning in school and improved their academic achievement.

Other Studies of Impact of Participation on Grade-Point Averages and Perceived Learning

Several other studies showed the impact of participation on grade-point averages and general ratings of young people’s learning. Surveys of Learn and Serve participants in Wisconsin (Kirkham, 2001) found that 97.9 percent of teachers who offer service-learning said that students learned more than what they would have learned through regular instruction. Nearly half (46.4 percent) reported that students’ grades improved and 35.8 percent reported that absenteeism decreased. High school students who participated generally affirmed these findings. On a survey, 77 percent said that they acquired new skills, knowledge, and interests; 67 percent reported that they gained a broader understanding of people and places; and 62 percent said they had a better understanding of the community and how it works. In their evaluation of KIDS Consortium, Ritchie and Walters (2003) showed that both middle and high school students had statistically significant increases in their motivation to learn, putting forth the necessary effort to reach a goal, and understanding of everyday life. Melchior and Bailis (2002) found that Learn and Serve participants had strong impacts on school engagement and math scores. Scales, Blyth, Berkas, and Kielsmeier (2000) found that service-learning students talked more with their parents about

school than did control students, but reported no other differences on achievement variables between the service-learning and control groups unless dimensions such as the amount of reflection were taken into account.

Studies of Student Problem-Solving: Three studies were conducted that examined the impact of service-learning on students’ problem-solving abilities and cognitive complexities. The studies, conducted by RMC Research in Philadelphia, Denver, and Waianae, Hawaii, examined the degree to which students changed in the way they understood and tried to solve community problems as posed in scenarios on essay prompts. Repeated “measures analysis” was performed and in each case, strong positive results were found among the students. After engaging in service-learning, students were much more apt to view social or community problems as systemic rather than personal, become more action oriented in their solutions, pose more solutions, and advance more realistic solutions. In the Hawaiian study, students also were more likely to become more empathic and take a deeper, more analytic approach to the problems. In the Philadelphia study, the younger children had stronger results than older students.

Conclusion (Heads Up): While there are still too few studies on the academic impact of participation in service-learning, the trend revealed by these studies is generally positive. Students who participated in service-learning were found to have scored higher than non-participating students in several studies, particularly in social studies, writing, and English/language arts. They were found to be more cognitively engaged and to be more

motivated to learn. Studies show great promise for service-learning as an avenue for increasing achievement among alternative school students and other students considered “at risk” of school failure. Studies on school engagement generally show that service-learning students are more cognitively engaged in school, but not necessarily more engaged behaviorally. Studies of students’ problem-solving abilities show strong increases in cognitive complexity and other related aspects of problem-solving. Service-learning, then, does appear to have a positive impact on students’ “heads,” helping them to engage cognitively in school and score higher in certain content areas on state tests. Some of these outcomes are mediated by the quality of the program, to be discussed later in this article.

Civic/citizenship impact (“hands”)

Recent evidence suggests that there is a growing problem of civic disengagement among youths in the United States, particularly those currently in high schools. Young people in high school report having little interest in civic and political affairs and little knowledge of, or trust in, the political system (Levine & Lopez, 2002; National Commission on Service-Learning, 2002; Torney-Purta, 2002). Results from a recent poll indicate that many young people do not feel they can make a difference, solve problems in their communities, or have a meaningful impact on politics or government (Lake Snell Perry & Associates & The Tarrance Group, Inc, 2002). Young people do not vote in percentages equal to those in earlier generations (Levine & Lopez, 2002) and they are not connected to political life in the same ways as those in the past (Flanagan,

2004; Kahne & Westheimer, 2002; Levine & Lopez, 2002). Policy-makers and educational leaders alike have noted the woeful lack of interest in civic activities among youth and express concern about the future of democracy (for example; Education Commission of the States, 2002; National Commission on Service-Learning, 2002).

The 1998 National Assessment of Educational Progress (NAEP) confirms that young people are not knowledgeable about many of the social and political institutions that govern American life. This national assessment measured:

- Student knowledge of government and society;
- Intellectual and participatory skills — including the ability to identify and describe, explain and analyze; and evaluate, take, and defend a position; and
- Civic dispositions, such as willingness to become an independent member of society; assuming personal, political, and economic responsibilities of citizenship, respecting individual worth and human dignity; participating in civic affairs in an informed, thoughtful, and effective manner; and promoting the healthy functioning of American constitutional democracy.

Results showed that 65 percent of 12th-grade students scored at the basic level, 26 percent at the proficient level, and four percent at the advanced level. Those who scored the lowest were from schools with high poverty.



Interestingly, this decline in civic engagement has been paralleled by an increase in volunteerism by young people. Studies estimate that over half of young people participate in voluntary service (Skinner & Chapman, 1999). As Putnam (2000) optimistically remarked, “A wide range of evidence . . . suggests that young Americans in the 1990s displayed a commitment to volunteerism without parallel among their immediate predecessors. This development is the most promising sign of any that I have discovered that America might be on the cusp of a new period of civic renewal, especially if this youthful volunteerism persists into adulthood and begins to expand beyond individual caregiving to broader engagement with social and political issues” (p. 13).

The 2003 publication of the “Civic Mission of Schools” (Carnegie Corporation of New York & CIRCLE, 2002) along with the “National Commission on Service-Learning Report,”

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(2002) stimulated or at least re-energized the national debate on the need for schools to play a stronger role in preparing young people for rights and responsibilities associated with U.S. democracy. The “Civic Mission of Schools” summarized the discussions and recommendations of a group of scholars and educators who examined the declining engagement of young people in civic engagement activities such as voting and working on issue and election campaigns. Authors pointed out that strong democracies need competent and responsible citizens. Four goals for civic education were specified:

- Assist students to become informed and thoughtful about American democracy through an understanding of history and democratic principles, including awareness and understanding of public and community issues, primarily through the development of skills that help young people obtain and analyze information, develop critical thinking skills, and enter into dialogue with those who hold different perspectives;
- Increase students’ participation in communities either through membership or through service, as a way of addressing cultural, political, social and/or religious interests and beliefs;
- Show students how to “act politically” by facilitating the acquisition of skills and knowledge related to group problem-solving, public speaking, petitioning, voting, and serving other public purposes; and
- Help students to acquire virtues such as concern for the rights and welfare of others, efficacy, tolerance, respect, and social responsibility.

Schools are considered to be the appropriate social institution to accomplish these goals both because they are the only institutions that have the capacity and mandate to reach virtually every young person, and because they are a key contributor to the development of social norms. The school environment can relatively easily be shaped to accomplish these citizenship goals, particularly since schools already address the cognitive and social foundations for activities that research shows are related to reaching these goals. The “Civic Mission of Schools” positions service-learning as a “promising practice.”

The National Commission on Service-Learning Report, “Learning In Deed,” also calls for schools to take a strong role in helping students develop civic knowledge and skills. This report casts its recommendation in the form of reclaiming the public purpose of education, and shows that service-learning is an approach that is uniquely poised to help young people acquire civic virtues, especially when service-learning is designed to encourage public dialogue and community connections.

Typically, the area of civics and citizenship contains calls for the acquisition of knowledge (most often reflected in standards and measured by the National Assessment of Educational Progress), skills, and dispositions or virtues. Service-learning research in the area of civic engagement and citizenship is growing exponentially, especially in response to these calls for increased civic education. Some of the more recent studies are summarized next.

Colorado Learn and Serve Program: A study of the impact of the Colorado Learn and Serve program (Kim & Billig, 2003; Klute, Sandel, & Billig, 2002) examined 35 classrooms and 761 students, about half of whom participated in service-learning and half of whom did not. Results for these students showed a statistically significant difference in connection to community, connection to school, and civic responsibility for those participating in service-learning relative to their non-participating peers.

California Service-Learning Programs: Ammon et al. (2001) in their study of CalServe Service-Learning Partnerships conducted a pre-/post-survey at 38 sites with schools engaged in service-learning. This study found an increase in civic engagement in some, but not all sites. The differences in impact were attributed to differences in programmatic goals; disparity in the ways in which attitudes changed; the ways in which previous service experiences were linked to civic engagement; and the differences in student thinking about good citizenship. Furco’s (2002) study of California’s high school programs also found a statistically significant difference in favor of service and service-learning on students’ awareness of societal issues and willingness to take active roles in the community.

Philadelphia Freedom Schools Junior Leader Study: Freedom Schools have a rich history of helping African-American students and others to connect to their cultural heritage and to empower young people to develop leadership skills and help their communities, both through direct action and capacity-building. An evaluation of the Freedom

Schools Junior Leader program in Philadelphia (Billig, 2002a) showed how powerful this approach can be. High school students were selected through an application process, were provided with intensive professional development, provided tutoring to elementary school students in the summer, and engaged in a year-long service-learning project on issues directly affecting the community. The evaluation showed that over time, participants increased in statistically significant ways on measures of connectedness with community, connectedness to American society, taking action and making changes in their communities, developing a realistic perspective about higher education requirements, and acquisition of a variety of leadership skills, including the ability to plan projects.

Waianae, Hawaii, Study: In the same study cited previously, researchers (Billig, Meyer, & Hofschire, 2003; Yamauchi, Billig, Meyer, & Hofschire, in press;) showed that service-learning participants had statistically significant positive outcomes on their feelings of contribution to the school and to the community; had feelings of being a valued part of the community by adults and other students; had pride in school; understood issues that affect the well being of the community, and took actions to make changes in the community. Service-learning students were also significantly more likely to want to help others and, at the “trend level,” were found more likely to be involved in activities that will make people’s lives better.

Rural Community Study: Henness (2001) conducted a study of service-learning in 11 Midwest rural communities. He found that student social capital development (e.g., their relationship with adult civic leaders and community organizations) was much higher in students who participated in service-learning than those who did not. There were no

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differences in human capital development in terms of civic knowledge, skills, and values.

Relative Efficacy of Service-Learning: Several studies have been conducted to examine the effects of service-learning on civic engagement relative to other school-based interventions. Melchior and Bailis (2002) compared results

from their evaluations of Serve America, Learn and Serve, and Active Citizenship Today (ACT). Student participants in each of these programs were in middle and high schools across the United States. In each of these programs, students engaged in service-learning, though there was less service-learning in ACT than in the other programs. However, the Learn and Serve program participants were in schools that had “fully implemented” service-learning, while the Serve America and ACT participants were randomly selected. Results indicated that both the Serve America and Learn and Serve programs had a statistically significant positive impact on students’ civic attitudes and behaviors, particularly in the areas of personal and social responsibility for the welfare of others; personal and social responsibility for community involvement, service leadership, acceptance of diversity, and communication skills. Impacts were greatest among high school students. The greatest impacts were in those areas that were directly affected by service-learning rather than on broad social responsibility areas. These researchers also found that quality matters, and that sustaining participation over time was associated with more lasting impacts. ACT also had a number of positive impacts, particularly in the area of communication skills development.

Kahne, Chi, and Middaugh (2002) evaluated the Constitutional Rights Foundation’s City Works program, administering a pre-/post-survey to students who participated in the program and those in control groups. They also conducted classroom observations and focus groups. These researchers found statistically significant greater

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commitments to become a participatory citizen, to justice-oriented values, and an interest in service generally among City Works students compared to non-participants. At the “trend level,” they also found that City Works participants had greater personal responsibility, knowledge of social networks, leadership skills, and civic efficacy. When the researchers deconstructed the components of City Works to see which type of intervention had the greatest impacts, however, simulations and exposure to role models were found to have a greater impact than service-learning. Service-learning had a positive impact, but the impact was in fewer areas — specifically, the development of personal responsibilities, social networks, and increased commitment to service. The authors conclude that the opportunities to work on issues that matter to students and learn about aspects of society that need changing were the key to producing broad civic engagement impacts.

Environmentally Responsible Behaviors: Covitt (2002) compared middle school students engaged in service-learning on environmental projects with non-participating peers to determine whether service-learning participation was related to motive fulfillment, “pro-social” behaviors, and civic outcomes related to environmental responsibility. The two different types of service-learning that were implemented in these programs did not produce positive differences on any of the measures. The author suggests that there are factors associated with pre-packaged service-learning programs that may inhibit motive fulfillment and achievement of desired outcomes, and differences in the quality of implementation most likely affected the results. Billig, Klute, and Sandel (2001)

in a study of CO-SEED, an environmental stewardship program described previously, found more agreement than disagreement from students that they felt a greater connection to local communities. Colorado elementary school students in another environmental project, Earthwalk, were found to significantly increase their desire to make a difference in the community (Billig & Salazar, 2003). Finally, students who participated in a Denver Zoo service-learning program also significantly increased their ratings on survey items related to young people’s abilities to make a difference and indicated that all young people should contribute. Differences were also found on measures of the need to take responsibility for the environment (Meyer, 2003).

Meta-analysis: Perry and Katula (2001) conducted a “meta-analysis” to examine the extent to which service affects citizenship. These researchers found that three dimensions of citizenship were impacted by service:

- Individual’s motivations and skills that include civic and political involvement and community attachment; cognitive capacities, and ethics;
- Philanthropic and civic behaviors, defined as non-political behaviors that produce public benefits, such as volunteering and charity; and
- Political behaviors, including voting, campaign contributions, service on public boards or commissions, and running for public office.

The meta-analysis examined both service and service-learning, and both K–12 and higher education. Perry and Katula describe the influence of specific antecedents like parental education and church attendance, the attributes of service such

as quality, the attributes of the server — such as intellectual stimulation, socialization, and practice — and the degree of institutionalization of practices on service and service-learning impacts. They conclude that the type of service that produces the most consistent positive results is service-learning (p. 360).

Conclusion (Hands Up and Down): Most, but not all, of the studies of service-learning and its impact on various measures of civic engagement show that service-learning has positive results — particularly for the domains of civic skills and dispositions. The mixed results here have been analyzed by the researchers as being related to the quality and intention of service-learning programs. When service-learning is intentionally oriented to a civic outcome, it appears to produce that outcome most of the time, especially for high school students. However, for many programs, civic engagement is not an intentional goal, and in those cases, it appears that service-learning may not accomplish civic outcomes as well as some other deliberate interventions. As will be seen below, quality matters.

Social/personal impacts (“heart”)

Over the years, the social and personal impacts of service-learning have been most frequently documented. Typical outcome areas that were shown to be strongly related to service-learning included self-efficacy, respect for diversity, self-confidence, collaborative skills, avoidance of risk behaviors, and resilience (Billig, 2000). Over the past few years, the number of studies in this area has declined. Researchers in the social-emotional learning field, however, have embraced service-

learning as a key strategy for accomplishing the five core social-emotional competencies (self-awareness, social awareness, self-management, relationship skills, and responsible decision-making) that all young people should develop (Elias, 2003). Social emotional learning theorists believe that “social emotional learning provides the skills while service-learning provides the opportunities to apply the skills” (p. 1). Recent studies by researchers in the realm of social/personal impacts are presented next.

Ethics: Several studies of the impact of service-learning participation on ethics have recently been conducted. In these studies, ethics were generally defined as students’ willingness to stand up for what is right, the development of strong moral values and judgments, willingness to intervene for the sake of justice, and development of a strong sense of right and wrong, good and bad. Furco (2002) once again found that there were statistically significant differences between service and service-learning participants and non-participants on all measures of ethics, with far more positive ratings for those who participate in service or service-learning.

Leming (2001) examined whether service-learning reflection that contained an ethical reasoning component impacted student “agency” (feeling that one could make a difference), social relatedness, and political-moral awareness. Students with the ethical component included within their service-learning program were compared to those who engaged in community service with reflection but without the ethical component, and with those who did not participate in

service. Leming found that after one semester, high school students with the ethical component in their service-learning program scored much higher on the ethics measures (essays were scored

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according to an “ethical awareness” index) than students in either of the other conditions. In both service-learning conditions, students scored higher than non-participants on measures of

social responsibility and anticipated future participation in community affairs. There were no differences on measures of self-esteem.

Resilience: A study of the Lions Quest program by Laird and Black (2002b) examined students’ “risk” behaviors such as potential for dropping out of school, use of alcohol and other substances, and misconduct. They also conducted surveys that documented degrees of participation in service-learning and a checklist of personal gains. This study found that 9th-grade students who participated in service-learning classes had statistically significantly more positive scores on all measures of resilience, and that 12th-grade service-learning students maintained a low risk of dropping out compared to their nonparticipating peers, including those identified as being at high risk, initially. Those students who participated in environmental service-learning projects had higher scores on interpersonal attitude scales than those who participated in other forms of service. Those involved in human service projects started out with lower scores and gained more than others. This study also showed that those with more service hours showed higher scores on several areas, particularly measures of positive community values and interpersonal competencies. Ninth-grade students were also more likely to decrease their cigarette smoking if they engaged in service-learning.

Other Studies: The Hawaii study cited previously (Yamauchi et al., in press) also showed statistically significant impacts of service-learning on a constellation of measures related to resilience, leadership, and prevention of dropping out of

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school. Similar findings occurred in the “Freedom Schools Study” (Billig, 2002a) and the “Denver Zoo Study” (Meyer, 2003). In addition, the study of Waianae students and Freedom Schools Junior Leaders show strong positive results in terms of connection to cultural heritage. Qualitative data were also provided to support these findings.

In a pilot study of elementary schools, Johnson and Notah (1999) found that 156 primarily Hispanic students had positive, but statistically insignificant effects from participating in service-learning on students’ self-esteem and personal responsibility. Morgan and Streb (1999) showed that service-learning students showed greater empathy than comparison groups. Scales et al. (2000) showed positive impacts of service-learning on concern for others’ welfare and efficacy in helping others. Meyer and Billig (2003) in the evaluation of “Need in Deed” found that 4th-grade service-learning participants scored higher on measures of altruism and empathy than non-participants, though this result was not found for 6th-grade students. Finally, Kirby (2001) performed a meta-analysis of studies that addressed teenage pregnancy prevention. He concluded that of all of the programs studied, service-learning had the greatest positive impact.

Conclusion (Big Heart): These studies affirmed the strong evidence from earlier research summarized by Billig (2000) that service-learning produces an array of positive impacts in the area of pro-social behaviors, acceptance of diversity, connection to cultural heritage, development of ethics, and strengthening of protective factors related to resilience. Service-learning clearly helps students

to develop caring, altruism, and other social/emotional learning associated with “heart.”

Career Exploration: Several recent studies affirmed the research that has consistently shown the value of service-learning in helping young people explore career options. Yamauchi et al. (in press), for example, showed students in service-learning, relative to non-participating students, had a stronger set of job- and career-related skills and aspirations, including knowledge of how to plan activities, desire to pursue post-secondary education, and job interview skills. Furco (2002) found strong statistically significant differences on formulation of career plans and emphasis on finding a career that was personally satisfying and/or beneficial to others between the service-learning and service groups and the non-participants.

Quality Matters

As indicated previously, many of the studies cited here found that quality of service-learning matters in terms of the relative impact of service-learning. One of the studies that addressed the impact of quality most directly was the study of academic achievement of Michigan students (Klute & Billig, 2002; Billig & Klute, 2003). As part of the analysis for this study, teachers were asked to rate their service-learning programs on a variety of indicators related to the “Essential Elements of Service-Learning” (NYLC, 1999) and other variables found to be associated with quality in the research literature. When the study controlled for quality, that is, when the data on high-quality service-learning schools were compared with the data on low-quality service-learning schools, it was found that low-quality schools had virtually no impact on

students and in some cases, produced lower scores than the comparison schools with no service-learning. The quality variables that had the greatest influence on outcomes were communication, interaction with community members, and linkage to standards. In both cases, when these variables were present, students were more engaged in school. Results were mixed for youth voice, preparation for service work, and whether service was mandatory or voluntary — meaning that sometimes these variables were associated with higher scores and sometimes they were not. Challenging tasks, use of assessment for improvement, meaningful service tasks, valuing diversity, use of reflection, and duration of service-learning were not associated with school engagement in this study.

The Philadelphia Need in Deed data (Meyer & Billig, 2002) also suggest that quality of services and fidelity to the model made a difference in the results. Focus groups revealed that in some of the cases where the impact was lowest, teachers did not implement all of the service-learning activities or did so without allowing enough student voice or time for reflection. The Colorado Learn and Serve evaluation (Klute et al., 2002), however, did not find significant differences based on quality in terms of school engagement or attachment to community.

Melchior and Bailis (2002) found that quality mattered in their study. In comparing outcomes of high quality Learn and Serve programs with Serve America and ACT programs, the high quality programs were found to have much larger impacts. Ammon (2002) also found that quality counts, but

in her study, quality was related to clarity of teacher goals, dialogue between the teacher and student about goals, and teachers' roles as facilitators in understanding during reflection processes. Covitt (2002) also found that quality of implementation affected results.

Conclusion. It appears as though quality matters, but more studies are needed to determine what aspects of quality make the most difference. Early results appear to indicate that linkage with standards, intention design, clarity of goals, and direct contact with the community are the strongest predictors of impact on students.

Other Pertinent Research

There have been a few studies that have examined the impact of service-learning on teachers and schools, sustainability and institutionalization, and costs of service-learning. Some of these studies are reviewed next.

Social Trust: Toole (2002) conducted a study on social trust, investigating the types of trust issues that arise among teachers implementing service-learning, the degree to which these trust issues influence service-learning implementation, and whether service-learning raises unique trust issues. He studied the initial Generator School Network (operated by the National Youth Leadership Council) and selected a sample of seven K-8 sites. Results indicated that social trust issues emerged throughout all dimensions of service-learning implementation and that the issues influenced implementation. High trust environments were associated with smoother processes. Service-learning provoked specific

trust conversations around justice and moral development, and issues about whether those involved were modeling the content of the service appropriately.

Implementation Issues and Impact on Teachers:

Billig (2002b), in a study of service-learning educational reform sites in New Hampshire,

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found that teachers involved in service-learning tended to have different needs at different stages of implementation. Implementation in these schools appeared to be easiest when there was a critical mass of teachers involved in support and implementation, and when philosophies around teaching and learning were more alike. Seitsinger and Felner (2000) found that middle school

teachers who used service-learning more regularly were those who were more knowledgeable about their state content standards, more experienced, and had better understandings of adolescent development.

Sustainability and Institutionalization: There were several studies of sustainability and institutionalization of service-learning. Koliba (2002) studied rural schools that were able to sustain service-learning for five years. He found that the five sustaining schools were more likely to have adopted school-wide norms for service-learning; a commitment to shared leadership; stable school leadership; active mission and vision statements; common definitions and terminology to discuss meaning; value and respect for students as community contributors; high levels of collegiality and trust among faculty and between faculty, staff, students, and community members, and a shared understanding that learning can take place in multiple settings. Sites also had high "leadership density," that is, a large number of advisory boards, committees, and governance structures. Billig (2002b) found that sustainability was related to strong leadership, shared cultural norms and expectations, incentives, visibility, availability of financial resources, and measurable impacts on student achievement. Billig and Klute (2001), in their retrospective study of W.K. Kellogg Foundation grantees, showed the value of the cultivation of long-term community partners, funding for a permanent staff position, tangible and positive results, connection to educational reform, and ongoing support from advisors and leaders.

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Cost/Benefit: Melchior (2000) took on the task of determining the costs of service-learning in a quasi-cost/benefit analysis. He noted that there are an almost infinite array of service-learning implementation strategies so costs will probably vary by scope, integration with curriculum and community, and type of program. Generally, though, he found that costs for service-learning tend to vary, with a range of \$14 per student to \$1,700 per student, and an average of \$52 per student. Higher costs are associated with having a permanent, full-time coordinator. The Pritchard research cited toward the beginning of this article showed that very few sites received additional funds outside of district funds for implementing service-learning.

Summary

Heads, Hearts, and Hands: So if you were a person considering service-learning and you asked the questions, “What is it? Does it work? Under what conditions does it work?” you would likely get multiple answers since the research and practice are still unclear. Most people agree on what service-learning is, but it is still confused with community service. The research evidence is building around the set of outcomes that service-learning produces. Service-learning has evidence of academic/cognitive, civic, social/personal, and career outcomes. The research suggests that quality matters.

The research base, while growing, is still in need of more studies, and of studies that meet the criteria for scientifically based evidence. There are still too many evaluations and too few experimental and quasi-experimental designs to show impact and the components of service-learning that make a differ-

ence. However, the research shows that K–12 school-based service-learning remains an enormously promising practice, especially if practice includes elements of high quality. The evidence that service-learning affects the heads, hearts, and hands of our students is compelling enough to encourage all schools to try it. **G2G**

References

- Ammon, M. S. (2002). Probing and promoting teachers' thinking about service-learning: Toward a theory of teacher development. In S. H. Billig & A. Furco, *Advances in service-learning research: Vol. 2. Service-learning through a multidisciplinary lens* (pp. 33–54). Greenwich, CT: Information Age Publishers.
- Ammon, M. S., Furco, A., Chi, B., & Middaugh, E. (2001). *Service-learning in California: A profile of the CalServe service-learning partnerships, 1997–2000*. Berkeley, CA: University of California, Service-Learning Research and Development Center. <http://www.servicelearning.org/article/archive/165>
- Berman, S. H. (2000). Service as systemic reform. *School Administrator*, 57(7), 20–24. http://www.aasa.org/publications/sa/2000_08/berman.htm
- Billig, S. H. (2000, May). Research on K–12 school-based service-learning: The evidence builds. *Phi Delta Kappan*, 81(9), 658–664. <http://www.puaf.umd.edu/CIRCLE/research/products/Billig.pdf>
- Billig, S. H. (2002a). *Philadelphia Freedom Schools Junior Leader evaluation*. Denver, CO: RMC Research Corporation. <http://www.servicelearning.org/article/view/109/1/122/>
- Billig, S. H. (2002b). Adoption, implementation, and sustainability of K–12 service-learning. A. Furco & S. H. Billig (Eds.), *Advances in service-learning research: Vol. 1. Service-learning: The essence of the pedagogy* (pp. 245–267). Greenwich, CT: Information Age Publishers. http://www.servicelearning.org/wg_php/library/?action=detailed&item=4277
- Billig, S. H., & Klute, M. M. (2001, February). *W. K. Kellogg Foundation retrospective of K–12 service-learning projects evaluation, 1990–2000*. Denver, CO: RMC Research Corporation. <http://www.wkkf.org/Pubs/PhilVol/Pub3762.pdf>
- Billig, S. H., & Klute, M. M. (2003, April). *The impact of service-learning on MEAP: A large-scale study of Michigan Learn and Serve grantees*. Presentation at National Service-Learning Conference, Minneapolis, MN.
- Billig, S. H., Klute, M. M., & Sandel K. (2001). *Antioch's Community-Based School Environmental Education (CO-SEED): Evaluation report*. Denver, CO: RMC Research Corporation.
- Billig, S. H., & Meyer, S. (2002). *Evaluation of the Hawaiian Studies Program at Waianae High School for CREDE*. Denver, CO: RMC Research Corporation.
- Billig, S. H., Meyer, S., & Hofschire, L. (2003). *Evaluation of Center for Research on Education, Diversity, and Excellence demonstration site, the Hawaiian Studies Program at Waianae High School*. Denver, CO: RMC Research Corporation.
- Billig, S. H., & Salazar, T. (2003). *Earth Walk environmental service-learning program interim evaluation*. Denver, CO: RMC Research Corporation.
- Carnegie Corporation of New York, and Center for Information and Research on Civic Learning and Engagement. New York: Carnegie Corporation, 2003. <http://www.civicmissionofschools.org/CivicMissionofSchools.pdf>
- Covitt, B. (2002). Motivating environmentally responsible behavior through service-learning. In S. H. Billig & A. Furco, *Advances in service-learning research: Vol. 2. Service-learning through a multidisciplinary lens* (pp. 177–197). <http://www.nationalserviceresources.org/filemanager/download/451/covittmot.pdf>
- Education Commission of the States. (2001). *Institutionalized service-learning in the 50 states*. Denver, CO: Author. <http://www.ecs.org/clearinghouse/23/77/2377.htm>
- Education Commission of the States. (2002). *Learning that lasts: How service-learning can become an integral part of schools, states, and communities*. Denver, CO: Education Commission of the States. <http://www.ecs.org/clearinghouse/40/54/4054.pdf>
- Elias, M. (2003). Making the case for social and emotional learning and service-learning. ECS Issue Brief. Denver, CO: Education Commission of the States. www.ecs.org/clearinghouse/44/04/4404.pdf
- Flanagan, C. A. (2004). Volunteerism, leadership, political socialization, and civic engagement. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology, 2nd ed.: Adolescent challenges, choices & positive youth development*. New York: Wiley & Sons.
- Furco, A. (2002). Is service-learning really better than community service? A study of high school service. In A. Furco & S. H. Billig (Eds.), *Advances in service-learning research: Vol. 1. Service-learning: The essence of the pedagogy* (pp. 23–50). Greenwich, CT: Information Age Publishers. http://www.servicelearning.org/wg_php/library/?action=detailed&item=4279
- Hecht, D. (2002). *The missing link: Exploring the context of learning in service-learning*. Presentation at 2nd International Service-Learning Research conference, Nashville, TN.
- Heness, S. A. (2001). *K–12 service-learning: A strategy for rural community renewal and revitalization*. Washington, DC: Corporation for National Service. (ERIC NO. ED461466.) <http://www.nationalserviceresources.org/filemanager/download/452/henessbiblio.pdf>
- Hess, F. (2004) “Refining or Retreating? High Stakes Accountability in the States” in P. Peterson & M. West, eds., *No Child Left Behind? The Politics and Practice of School Accountability*, Washington, DC: The Brookings Institution Press, p. 55–79.
- Johnson, A., & D. Notah. (1999). Service-learning: History, literature, and a pilot study of eighth graders. *The Elementary School Journal* 99(5), 453–467.

Kahne, J., Chi, B., & Middaugh, E. (2002, August). *City Works evaluation summary*. Los Angeles: Constitutional Rights Foundation.

Kahne, J., & Westheimer, J. (2002). *City Works evaluation summary*. Evaluation report for the Surdna Foundation, New York.

Kim, W., & Billig, S. H. (2003). *Colorado Learn and Serve evaluation*. Denver, CO: RMC Research Corporation.

Kirby, D. (2001). Effectiveness of prevention programs for adolescent pregnancy: a meta-analysis. *Journal of Marriage and the Family* 59, (pp. 551-67).

Kirkham, M. (2001). *Sustaining service-learning in Wisconsin: What principals, teachers, and students say about service-learning, 2000-2001*. Madison, WI: Wisconsin Department of Public Instruction. <http://www.dpi.state.wi.us/dpi/dltcl/bbfcsp/pdf/slsustain.pdf>

Klute, M. M. (2002, December). *Antioch's Community-Based School Environmental Education (CO-SEED): Quantitative evaluation report*. Denver, CO: RMC Research Corporation. http://coseed.schoolsgogreen.org/01-02_CO-SEED_Eval_Qual.pdf

Klute, M. M., & Billig, S. H. (2002). *The impact of service-learning on MEAP: A large-scale study of Michigan Learn and Serve grantees*. Denver, CO: RMC Research.

Klute, M. M., Sandel, K., & Billig, S. H. (2002). *Colorado Learn and Serve evaluation*. Denver, CO: RMC Research Corporation.

Koliba, C. (2002). *Vital Results: Linking Student and Community in Vermont Schools*. Joint publication of the John Dewey Project in Progressive Education at the University of Vermont and Vermont Community Works. S. Burlington, VT: Community Works Press.

Kraft, N., & Wheeler, J. (2003). Service-learning and resilience in disaffected youth: A research study. In S. H. Billig & J. Eyler (Eds.), *Advances in service-learning research: Vol. 3. Deconstructing service-learning: Research exploring context, participation, and impacts* (pp. 213-238). Greenwich, CT: Information Age Publishers. http://nekesc.org/JWNK/sl_disaffected.pdf

Laird, M., & Black, S. (2002a, October). *Service-learning evaluation project: Program effects for at risk students*. Presentation at 2nd International Service-Learning Research conference, Nashville, TN.

Laird, M., & Black, S. (2002b). Report for U.S. Department of Education Expert Panel on Safe, Disciplined, and Drug-Free Schools. Annapolis Junction, MD: Lions-Quest. http://www.lions-quest.org/content/whatsnew/SFG_EvaluationReport.pdf

Lake Snell Perry & Associates & the Tarrance Group, Inc. (2002, March). *Short-term impacts, long-term opportunities: The political and civic engagement of young adults in America*. Analysis and report for The Center for Information & Research on Civic Learning & Engagement (CIRCLE) and the Center for Information and Research in Civic Learning & Partnership for Trust in Government at the Council for Excellent in Government.

Leming, J. S. (2001, Spring). Integrating a structural ethical reflection curriculum into high school community service experiences: Impact on students' sociomoral development. *Adolescence*, 36 (pp. 141).

Levine, P., & Lopez, M. H. (2002, September). *Youth voter turnout has declined, by any measure*. Report from The Center for Information & Research on Civic Learning & Engagement (CIRCLE). College Park, MD: CIRCLE. http://www.civicyouth.org/research/products/Measuring_Youth_Voter_Turnout.pdf

Melchior, A. (2000, August). Costs and benefits of service-learning. *The School Administrator*, web edition. American Association of School Administrators. http://www.aasa.org/publications/sa/2000_08/melchior.htm

Service-learning has evidence of academic/cognitive, civic, social/personal, and career outcomes. The research suggests that quality matters.

Melchior, A., & Bailis, L. N. (2002). Impact of service-learning on civic attitudes and behaviors of middle and high school youth: Findings from three national evaluations. In A. Furco & S. H. Billig (Eds.), *Advances in service-learning research: Vol. 1. Service-learning: The essence of the pedagogy* (pp. 201-222). Greenwich, CT: Information Age Publishers. http://www.servicelarning.org/wg_php/library/?action=detailed&item=4277

Meyer, S. (2003). *Denver Zoo community leadership project evaluation*. Denver, CO: RMC Research Corporation.

Meyer, S., & Billig, S. H. (2003). *Evaluation of Need in Deed*. Denver, CO: RMC Research Corporation. <http://www.rmcdenver.com/servicelearning.htm>

Morgan, W., & Streb, M. (1999). *How quality service-learning develops civic values*. Bloomington, IN: Indiana University.

National Commission on Service-Learning. (2002). *Learning In Deed: The power of service-learning for American schools*. A report from the National Commission on Service-Learning, funded by the W.K. Kellogg Foundation in partnership with The John Glenn Institute for Public Service and Public Policy at The Ohio State University. <http://www.learningindeed.org/slcommission/learningindeed.pdf>

National Service-Learning Cooperative. (1999). *Essential elements of service-learning*. St. Paul, MN: National Youth Leadership Council.

Perry, J. L., & Katula, M. C. (2001, July). Does service affect citizenship? *Administration and Society*, 33(3), 330-365.

Pritchard, I. (2002). Community service and service-learning in America: The state of the art. In A. Furco & S. H. Billig (Eds.), *Advances in service-learning research: Vol. 1. Service-learning: The essence of the pedagogy* (pp. 3-21). Greenwich, CT: Information Age Publishers. http://www.servicelarning.org/wg_php/library/?action=detailed&item=4277

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster

Ritchie, C., & Walters, S. (2003, November). *Fostering high aspirations through KIDS service-learning*. Presentation at the 2nd annual International Conference on Service-Learning Research, Salt Lake City, UT.

Scales, P. C., Blyth, D. A., Berkas, T. H., & Kielsmeier, J. C. (2000, August). The effects of service-learning on middle school students' social responsibility and academic success. *Journal of Early Adolescence*, 20(3), 332-358.

Seitsinger, A. & Felner, R. (2000). By whom and how is service-learning implemented in middle level schools: A study of opportunity-to-learn conditions and practices. Paper presented at the American Educational Research Association Annual Meeting, New Orleans, LA.

Skinner & Chapman (1999). *Service-learning and community service in K-12 public schools*. Washington, DC: U.S. Department of Education, NCES Statistical Brief, NCES 1999-043. <http://nces.ed.gov/pubs99/1999043.pdf>

Smartworks, Inc. (n.d.). Flint Community Schools Service-Learning Initiative evaluation report, 2001-2002. Grand Blanc, MI: Author.

Toole, J. (2002). Civil society, social trust, and the implementation of service-learning. In A. Furco & S. H. Billig (Eds.), *Advances in service-learning research: Vol. 1. Service-learning: The essence of the pedagogy* (pp. 53-81). Greenwich, CT: Information Age Publishers. http://www.servicelarning.org/wg_php/library/?action=detailed&item=4277

Torney-Purta, J. (2002) The School's Role in Developing Civic Engagement: A Study of Adolescents in Twenty-Eight Countries. *Applied Developmental Science* 6(4): 203-212

Yamauchi, L., Billig, S. H., Meyer, S., & Hofschire, L. (in press). *Student outcomes associated with service-learning in a culturally relevant high school program*.