

Impacts of Service-Learning on Participating K-12 Students

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The studies summarized below build on the research outlined in Billig's May 2000 article in *Phi Delta Kappan* and subsequent research updates from RMC Research in 2001 and 2005.

Academic Impacts

A number of studies have been conducted showing promising results of the academic impact of service-learning.

- ***Alternative School Studies***

- In Michigan, Laird and Black (2002) showed that students who participated in Literacy Corps, a service-learning option in one alternative school, scored higher than their nonparticipating peers on the Michigan state assessment.
- In Kansas, Kraft and Wheeler (2003) found that alternative school students who participated in service-learning showed strong gains over time on measures of attitude toward school, on writing scores on a six-trait writing assessment, and in grade-point averages.
- In an evaluation of Texas Title IV service-learning programs, Brown, Kim, & Pinhas (2005) showed that ratings of school engagement and civic dispositions for participating students at Disciplinary Alternative Education Programs increased significantly over time.

- ***California Service-Learning Programs*** (Ammon, Furco, Chi & Middaugh, 2001)

Researchers found that academic impacts were related to clarity of academic goals and activities, scope, and support through focused reflection.

Comparison Study (Furco, 2002)

High school students who engaged in service-learning were compared with peers who either performed community service or performed no service at all.

- Students who engaged in any type of service had higher scores on attitude toward school surveys, though gender and school site may have confounded the results.
- The service-learning group scored higher on all academic measures though the only statistically significant differences were between the service-learning and the no service group.

California Service-Learning District Partnerships: Statewide Summary Report of Local Evaluations (Furco & Granicher, 2007)

The majority of service-learning projects in the district partnerships were aligned with California Academic Content Standards, generally in the areas of English Language Arts or History/Social Sciences.

- Local evaluation teams reported that 82.9 percent of participating case study students (n = 2744) met or exceeded proficiency on teacher-selected California Academic Content Standards.

- ***Civic Engagement and High School Academic Progress: An Analysis Using NELS Data*** (Dávila & Mora, 2007)
 A review of data from the National Educational Longitudinal Study of 1988 (NELS) suggested that participation in civic engagement activities including voluntary community service, service-learning, and student government during high school years enhanced academic achievement.

 - Civic engagement activities raised the odds of graduation and improved high school students' progress in reading, math, science and history.
 - Students who participated in service-learning activities in high school were 22 percentage points more likely to graduate from college than those who did not participate.
 - Students who participated in service-learning scored 6.7 percent higher in reading achievement and 5.9 percent higher in science achievement than those who did not participate in service-learning.

- ***Evaluation of School-Based Service Learning in Indiana*** (Morgan, n.d.)
 Results from a study of Indiana's Learn and Serve grantees show service-learning to be an effective pedagogical approach by educators that empowers and revitalizes the teachers who use it. It showed positive effects on student grades, attitudes towards school and education, and civic education.

 - Overall GPAs were seen to improve from about a B average to a B+.
 - Students' political knowledge increased (from 70% of asked questions answered correctly before service to 85% after completing service).
 - Improved attendance was noted, and students arrived to class better prepared, were more likely to discuss school out of class, and developed more confidence in public speaking.

- ***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 of students reported that their participation helped them understand what they were learning in school and improved their academic achievement.

- ***Michigan Learn and Serve Study*** (Billig & Klute, 2003; Klute & Billig, 2002)

 - Service-learning students in Grades 7-12 reported more cognitive engagement in English/language arts (e.g., paying more attention to schoolwork, putting forth effort) than nonparticipants.
 - For students in Grades 2-5, students who participated in service-learning reported greater levels of behavioral, affective, and cognitive engagement in school than their nonparticipating peers, showing statistically significant differences in the effort they expended, paying attention, completing homework on time, and sharing what they learned with others.
 - Service-learning students in the 5th grade demonstrated significantly higher test scores on the state assessment than their nonparticipating peers in the areas of writing, total social studies, and three social studies strands: historical perspective, geographic perspective, and inquiry/decision making.
 - The two aspects of service-learning that were most closely associated with positive results were linkage with curriculum and direct contact with those being served.

(Meyer, Hofschire, & Billig, 2004)

- On the MEAP, 5th-grade service-learning students outperformed their non-participating counterparts on the overall science and social studies scores.
- For older students, significant differences were found for three of the nine student engagement variables.
- Aspects of program quality, such as teacher ratings of service-learning quality, student ratings of their service-learning experiences, and indicators of service-learning quality moderated the impact of service-learning.

- ***New England CO-SEED Sites*** (Klute, 2002)

RMC Research evaluated a service-learning program focused on the environment in several New England schools.

- Participating students showed that sixth grade service-learning participants in New Hampshire demonstrated statistically significant gains in achievement scores on state assessments relative to their own performance in the past.
- Vermont 6th-grade and 2nd-grade students scored higher in reading and word analysis though the data were not statistically significant. No differences were found for students in other grade levels.
- The author suggested that the differences in outcome may have been related to the degree of quality implementation at the sites.

- ***Philadelphia Need in Deed Initiative Study*** (Billig, 2003)

- Sixth-grade students who participated in the service-learning approach had statistically significantly higher scores on the Terra Nova, a standardized test, in the areas of science and language arts; however, the same effects were not found for other grade levels.
- Data analyses showed that the differences may be attributable to the content and quality of the service-learning experience.

- ***Reducing the Achievement Gap*** (Scales & Roehlkepartain, 2005)

This research report offers evidence that service-learning may have particular educational benefits for low-income students and schools.

- Involvement in service appears to contribute to lessening the achievement gap, with low-income students who serve doing better academically than students who do not serve.
- Principals in low-income schools are more likely than other principals to believe service-learning has a positive impact on students' school success.
- Urban schools, majority nonwhite schools, and poor schools that offer service-learning appear just as likely as other schools to provide high quality opportunities

- ***Review of State Level Studies***

Bradley (2005) reviewed 19 state-level studies conducted on service-learning programs. Data were analyzed by state agencies in four of the studies and by consultants in the remaining 15. Only one of the studies, from Ohio, contained longitudinal data, while the study done in Michigan was conducted over two consecutive years. All other studies spanned a single school year.

- Only five of the studies, in California, Colorado, Michigan, Ohio, and Tennessee, used quasi-experimental designs.

- Most studies showed positive outcomes in such areas as school climate, school engagement, academic performance, attendance, and behavior.
 - The author called for coordinated data collection strategies across states to build a more compelling case for service-learning.
- ***Role of Service-Learning in Enhancing Student Achievement*** (Furco, 2007)
A review of research indicates that high quality service-learning, because of its utilization of effective, experiential learning strategies, can enhance academic outcomes in such content areas as reading, writing, mathematics, and science. A variety of studies have shown evidence of a range of achievement-related benefits from service-learning, including improved attendance, higher grade point averages, enhanced preparation for the workforce, enhanced awareness and understanding of social issues, greater motivation for learning, and heightened engagement in prosocial behaviors.
- ***Studies of Achievement Gains on Grade Point Averages and Motivation to Learn***
 - Surveys of Learn and Serve participants in Wisconsin (Kirkham, 2001) found that 97.9% of teachers who offer service-learning said that students learned more than what they would have learned through regular instruction. Nearly half (46.4%) reported that students' grades improved and 35.8% reported that absenteeism decreased. High school students who participated generally affirmed these findings. On a survey, 77% said that they acquired new skills, knowledge, and interests; 67% reported that they gained a broader understanding of people and places; and 62% 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 involvement had strong impacts on school engagement and math scores.
 - Scales, Blyth, Berkas, and Kielsmeier (2000), however, found no effects of service-learning on a cluster of achievement related variables
- ***Studies of Student Problem Solving***
Three studies conducted by RMC Research in Philadelphia, Denver, and Waianae, Hawaii examined the impact of service-learning on students' problem-solving abilities and cognitive complexities.
 - 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, younger children had stronger results than older students.
- ***Study of At-Risk Students*** (Hecht, 2002)

This study evaluated the impact of service-learning among Delaware students who were educationally at risk because they were retained or administratively assigned to 7th or 8th grade.

- Qualitative findings 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 & Meyer, 2002; Billig, Meyer, & Hofschire, 2003)
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.

Conclusion: Students who participated in service-learning were found to have scored higher than nonparticipating students in several studies, particularly in social studies, writing, and English/language arts. They were found to be more cognitively engaged and 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 by helping them to engage cognitively in school and score higher in certain content areas on state tests. Many of these outcomes are mediated by the quality of the program.

Civic/Citizenship Impacts

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.

- ***Building Citizenship: How Student Voice in Service-Learning Develops Civic Values*** (Morgan & Streb, 2001)
Student voice in service-learning projects is positively correlated with improved self-concept, political engagement, and tolerance.
 - As the level of student empowerment, or voice, increased, so did students' political engagement, desire to be more socially active, and respect for those who are different from them.
 - Overall, the study demonstrated that service-learning projects with student leadership can help make students better citizens.
- ***California Service-Learning Programs*** (Ammon et al., 2001)
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.
California Service-Learning District Partnerships: Statewide Summary Report of Local Evaluations (Furco & Granicher, 2007)
In the area of civic responsibility, local evaluation teams reported, through 53 case studies, that 82.3 percent of participating students (n = 2,156) met or exceeded proficiency on teacher-selected civic-related standards or indicated growth on civic-focused pre- and post-surveys.
- ***California Survey of Civic Education*** (Kahne, 2005)
The California Campaign for the Civic Mission of Schools commissioned the development and use of a survey to examine the civic knowledge, skills, and commitments of graduating seniors throughout the state and assess the prevalence and impact of educational practices identified in *The Civic Mission of Schools* report. The survey was conducted of 2,366 students who had completed a U.S. government course. The 12 participating schools were geographically, demographically, and academically diverse. The survey found that:
 - Young people have a strong desire to help their communities as evidenced by their involvement as volunteers and their commitment to charity work.
 - Young people display considerably less commitment to other forms of civic and political engagement that relate to the policies and practices of schools and government. Less than half of high school students agreed that "Being actively involved in state and local issues is my responsibility."
 - In spite of taking a U.S. government course in their senior year, students' knowledge of structures and functions of government was minimal.

- There is much that schools can do by implementing school and classroom practices emphasized in *The Civic Mission of Schools* report and related strategies associated with greater civic capacities and commitments. One of the six approaches endorsed by the report is to “have students apply what they learn through community service linked to the curriculum and classroom instruction.”
 - Those intending to go to four-year colleges have significantly more access to opportunities to develop civic commitments and capacities than others.
- ***Carnegie Corporation Study of High School Civic Engagement*** (Billig, Root, & Jesse, 2005)
 - Service-learning students had higher scores of enjoyment of school overall than comparison group peers and were significantly more likely to report intending to vote than comparison students.
 - Duration of the service-learning experience, student decision making, teacher characteristics, experience using service-learning, and active teaching strategies were all associated with higher civic knowledge, skills, and dispositions.
 - ***Colorado Learn and Serve Program*** (Kim & Billig, 2003; Klute, Sandel, & Billig, 2002)
A study of the impact of the Colorado Learn and Serve program 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 nonparticipating peers.
 - ***Environmentally Responsible Behaviors***
 - Covitt (2002) compared middle school students engaged in service-learning on environmental projects with nonparticipating peers to determine whether service-learning participation was related to motive fulfillment, prosocial 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 in terms of feeling 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 (Meyer, 2003) 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.

- ***Impact of Service-Learning on Transitions to Adulthood*** (Martin, Neal, Kielsmeier, & Crossley, 2006)
 A nationally representative survey examined the ways in which service-learning involvement affected youths' development of attributes associated with adulthood.

 - Compared to their peers, young adults who participated in K-12 service-learning were more likely to discuss politics or community issues and vote in an election year, more politically and socially connected to their communities, both as leaders and role models, and more active members of society.
- ***Infusing Service-Learning in the Social Studies: Civic Outcomes of the 3rd – 12th Grade CiviConnections Program*** (Wade & Yarbrough, 2005)
 The study involved more than 3,000 3rd through 12th grade students who participated in a service-learning program designed to promote skills, values, and behaviors associated with active citizenship.

 - The integration of local historical inquiry with community service-learning led to significant self-reported increases in civic knowledge, attitudes, and intention to participate in community improvement.
- ***Longitudinal Study of School, Family, and Community Influences on Students' Commitment to Civic Participation*** (Kahne & Sporte, 2007)
 The study compares various influences on the development of civic commitments in the Chicago public schools, where 85% of students come from low-income backgrounds and 91% are students of color. The study is following 3,805 students from 47 Chicago high schools.
 Preliminary results, as reported by the Center for Information and Research on Civic Learning and Engagement (CIRCLE), indicate that:

 - Students' racial and ethnic backgrounds have very little impact on their civic commitments.
 - Civic engagement of families and neighborhoods does matter, but the impact of service-learning and other classroom-based civic learning opportunities is substantially larger.
 - There are positive effects from participating in after-school programs, but these are smaller than those attributed to civically oriented classroom activities such as service-learning and classroom discussions of current issues.
- ***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 includes civic and political involvement and community attachment; cognitive capacities, and ethics;
 - Philanthropic and civic behaviors, defined as nonpolitical 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 in both K–12 and higher education. Perry and Katula described the influence of specific antecedents, such as 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 concluded that the type of service that produces the most consistent positive results is service-learning.

- ***Philadelphia Freedom Schools Junior Leader Study*** (Billig, 2002a)
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.

- ***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 commitments to become a participatory citizen, to justice-oriented values, and an interest in service generally among City Works students compared to nonparticipants.
 - 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 concluded 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.
- ***Report to the Surdna Board*** (Westheimer & Kahne, 2000)
 - Programs where students augment their sense of knowledge were also those where students' sense of agency and civic commitments grew the most.
 - Although results varied by site, pre- and post-test surveys indicated a range of positive effects and far fewer negative effects
 - Authors offer a challenge to educators to question what students are learning through their community service experience and whether or not the lessons learned have systemic impact and solutions on the problem or open doors for later life time involvement.
 - ***Rural Community Study*** (Heness, 2001)
 - 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 differences in human capital development in terms of civic knowledge, skills, and values.
 - ***Study of High School Service*** (Furco, 2002)

This study of California's high school programs 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.
 - ***Texas Center for Service-Learning: Evaluation of K-12 SCP and CHESP Programs*** (Meyer, 2006)

Service-learning participants in School Community Partnership (SCP) and Community-Higher Education-School Partnership (CHESP) programs showed increases in civic knowledge, skills, and dispositions that were significantly higher than those of comparison students.

 - Student ratings of service-learning engagement, quality, number of different activities, and duration were significantly and positively related to school engagement, school attachment, valuing school, community engagement, civic skills, and civic dispositions for students in grades 3-5 and 6-12.
 - ***Volunteering and Civic Engagement among Youth from Disadvantaged Circumstances*** (Spring, Dietz, & Grimm, 2007)

This is the third in a series of reports based on the 2005 Youth Volunteering and Civic Engagement Survey, a national survey of 3,178 American youth between the ages of 12 and 18. The report examined attitudes and behaviors of youth from disadvantaged circumstances toward volunteering and other forms of civic engagement.

- Youth from disadvantaged circumstances were less likely than those from non-disadvantaged circumstances to participate in volunteer activities, by 43 percent to 59 percent, respectively. However, when youth from disadvantaged circumstances did volunteer, they demonstrated the same level of commitment as non-disadvantaged youth.
 - Regardless of their economic circumstances, youth were most likely to volunteer because they were asked, and a teacher was the most likely person to make the request.
 - Youth from disadvantaged circumstances were significantly more likely to volunteer in order to gain work experience and fulfill their religious and spiritual beliefs compared to non-disadvantaged peers.
- ***Waianae, Hawaii, Study*** (Billig, Meyer, & Hofschire, 2003 and Yamauchi, Billig, Meyer, & Hofschire, 2006)
 Service-learning participants had statistically significantly more positive outcomes on their feelings of contribution to the school and to the community; feelings of being a valued part of the community by adults and other students; having pride in school; understanding issues that affect the well being of the community, and taking 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.

Conclusion: 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.

Social/Personal Impacts

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 (Fredericks, 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.

- ***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 and colleagues (2006), for example, showed students in service-learning relative to nonparticipating students had a stronger set of job and career related skills and aspirations, including knowledge of how to plan activities, desire to pursue postsecondary 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 nonparticipants.

- ***Effects of Service-Learning on Middle School Students’ Social Responsibility and Academic Success*** (Scales, Blyth, Berkas, & Kielsmeier, 2000)

The effects of service-learning on social responsibility and academic success were investigated among a large, racially and socioeconomically diverse sample of students in Grades 6 through 8 in three middle schools.

- Over the school year, service-learning students maintained their concern for others’ social welfare, whereas control students declined on those concerns.
- Service-learning students, especially girls, also declined significantly less than did controls in their frequency of talking with parents about school.
- Compared with other students, students with substantial hours of service-learning, a lot of reflection, and a high degree of motivation attributed to service-learning, significantly increased their belief in the efficacy of their helping behaviors, maintained their pursuit of better grades and their perception that school provided personal development opportunities, and decreased less in their commitment to classwork.

- ***Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy*** (Kirby, 2001)

This research review examined evaluation research on programs to prevent teen pregnancy that shows programs are making a real difference in encouraging teens to remain abstinent or use contraception when they have sex.

- Service-learning programs may have the strongest evidence of any intervention that they reduce actual teen pregnancy rates while the youth are participating in the program.

Among the programs with the best evidence of effectiveness are the Teen Outreach Program and Reach for Health service learning program.

- Although the research does not clearly indicate why service-learning is so successful, several possibilities seem plausible: participants develop relationships with program facilitators, they gain a sense of autonomy and feel more competent in their relationships with peers and adults, and they feel empowered by the knowledge that they can make a difference in the lives of others. All such factors, in turn, may help increase teenagers' motivation to avoid pregnancy.
- Participating in supervised activities—especially after school—may simply reduce the opportunities teens have to engage in risky behavior, including unprotected sex.

- ***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) found that there were statistically significant differences between service and service-learning participants and nonparticipants 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 they could make a difference), social relatedness, and political-moral awareness. Students with the ethical component 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 (essay prompts scored according to an ethical awareness index) than students in either of the other conditions.
 - In both service-learning conditions, students scored higher than nonparticipants on measures of social responsibility and anticipated future participation in community affairs.
 - There were no differences on measures of self-esteem.

- ***Other Studies.***

- The Hawaii study cited previously (Yamauchi et al., 2006) also showed statistically significant impacts of service-learning on a constellation of measures related to resilience, leadership, and prevention of school dropout.
- 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 showed strong positive results in terms of connection to cultural heritage. Qualitative data were also provided to support these findings.

- In a study by Johnson and Notah (1999), 156 primarily Hispanic students who participated in service-learning had positive, but statistically insignificant effects on their self-esteem and personal responsibility.
 - Morgan and Streb (1999) showed that service-learning students demonstrated greater empathy than comparison groups.
 - Scales and colleagues (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 nonparticipants, though this result was not found for 6th-grade students.
 - In the previously cited study on service-learning impacts on transitions to adulthood, (Martin, Neal, Kielsmeier, & Crossley, 2006), the authors found that when compared to young people who were involved in service-only experiences, students who took part in service-learning reported more positive effects on their ability to help others, work well with other people, respect others, and see the world from other perspectives. Service-learning participants noted increased skills in communication, a heightened sense of self-confidence, and more sensitivity to differences in age, race, and economic status.
- ***Positive Peer Solutions: One Answer for the Rejected Student***
(Rosenberg, McKeon, & Dinero, 1999)
Positive Peer Groups (PPG) is a leadership training program that helps alienated and disengaged students bond to school via participation in school-oriented service activities stressing work, discipline, and responsibility. Students form affiliations with peers involved in the same efforts. Results in Ohio schools are encouraging.
 - Students who experienced the program showed improved attitudes toward school, were proud of their own growth and maturity, and showed more initiative than control students.
 - Students became more cooperative and tolerant of individual differences, and they learned to work together as a team, depend upon each other and to be depended upon.
 - They showed increased social responsibility.
- ***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.
 - Ninth-grade students who participated in service-learning classes had statistically significantly more positive scores on all measures of resilience, and 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.

- 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.

A study of a three-year Corporation for National Service demonstration project in Wisconsin (Potts, 2000) looked at the success of fostering resiliency through service-learning in two geographical areas of the state. The project paired middle school students and university students in more than 100 service-learning projects.

- Middle school students reported lower rates of certain risk behaviors, higher levels of leadership and ability to resist danger, higher levels of positive peer influence, higher rates of homework and school engagement, higher interpersonal competence, and increased involvement in service to others.

- ***Service Learning: Who Benefits and Why*** (Stukas, Clary, & Snyder, 1999)

This extensive review of service-learning research literature documented benefits for students, institutions, and communities.

- Service learning can impact students' personal development in areas such as personal efficacy, self esteem, and confidence (e.g., Giles & Eyler, 1994a, 1998; Yates & Youniss, 1996).
- Service learning has been shown to improve students' moral reasoning (Conrad & Hedin, 1981, 1982), problem solving (e.g., Eyler, Root, & Giles, 1998), and empathetic understanding (Yogev & Ronen, 1982).
- Service-learning can influence students' understanding of attitudes toward diverse groups in society (Blyth et al., 1997; Yates & Youniss, 1996).
- Students who engage in service learning have frequently been demonstrated to show increases in personal and social responsibility (e.g., Conrad & Hedin, 1981, 1982; Hamilton & Fenzel, 1988; Markus et al., 1993; Sax & Astin, 1997) and altruistic motivation (Yogev & Ronen, 1982).

- ***Teaching Character Education to Students With Behavioral and Learning Disabilities Through Mentoring Relationships*** (Muscott & O'Brien, 1999)

SO (Service-Learning Opportunities) Prepared for Citizenship, an inclusive after school program, was designed to enhance the character development of elementary students by teaching specific character traits including: (a) responsibility and self-control; (b) cooperation and teamwork; and (c) respect and appreciation of diversity through language arts and other activities. The program relied on high school and college mentors to introduce the curriculum and perceptions of the program.

- Students with disabilities expressed responsibility for their actions; responded to the ideas of cooperation and teamwork and respect and appreciation of diversity; learned to make new friends; and found learning about character to be fun and rewarding.

Conclusion: 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 prosocial 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.

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