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Service-Learning and Civic Outcomes: From Suggestive Research to Program Models

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Abstract

Service-learning has been identified as an intervention that may address low levels of youth civic engagement. Service-learning is compared to two other interventions that have been associated with civic outcomes: community service and civic education curricula. Studies of these three types of interventions are systematically reviewed and compared, taking into account rigor of designs and methods. Across a range of civic indicators, no clear pattern was found regarding the impact of each intervention. This review highlights the need for increased rigor and sensitivity of measurement in future research on civic development among school-age students.

Service-Learning and Civic Outcomes: From Suggestive Research to Program Models

Low levels of civic engagement among youth have been identified as problematic. Youth in the United States exhibit low levels of knowledge about politics and government, and are less likely than adults to be involved in various political activities (Center for Information and Research on Civic Learning and Engagement (CIRCLE), 2003; Olander, 2003). Although voting among youth ages 18 to 24 increased by 4.6 million between the 2000 and 2004 Presidential elections, it declined significantly between 1972 and 2000, and remains lower than any other voting age cohort (CIRCLE, 2005; Gibson, 2001; Levine & Lopez, 2002). More promising trends are evident in terms of social action. For example, youth between 15 and 25 years old in the United States have been found to volunteer at higher rates than older age cohorts (Keeter, Andolina, Jenkins, & Zukin, 2002). However, major concerns about low levels of youth civic engagement exist among both scholars and public officials.

The lack of youth engagement in political and community-based activities raises significant social justice concerns about whose voices, interests, and needs are heard by those in power. In particular, political as well as social forms of civic engagement are lower among low-income and minority youth (CIRCLE, 2003; Flanagan & Faison, 2001; Torney-Purta, 2001). Youth are resources whose active community participation can help address social issues and improve the well-being of their communities (Finn & Checkoway, 1998). Moreover, active civic participation during one's youth has been linked to continued engagement as an adult (Youniss, McLellan, & Yates, 1997). Thus, increasing civic outcomes among youth is essential for the individual youth, their communities, and for socially-just government policies and services.

In light of compelling concerns about the state of youth civic engagement today, it is increasingly important that we identify and replicate intervention models that positively impact

youth civic outcomes, particularly in the political sphere. Service-learning has gained a reputation in the practice community for “successfully” influencing civic attitudes, knowledge, and skills of K-12 students. Multiple studies have supported this assertion (Billig, 2000); however, because the rigor of the designs and methods of some studies can be considered low, definitive claims of its success as an intervention are tenuous. Moreover, it is unknown whether service-learning is more effective at increasing particular civic outcomes among school-age children and youth than other interventions. In fact, studies of community service programs and civic education curricula also claim positive civic outcomes for K-12 students.

Is service-learning “uniquely poised to teach. . . civic virtues,” as the National Commission on Service-Learning (2002) suggests (p. 39)? We conduct a systematic analysis of research on the civic outcomes of service-learning and compare these findings with those from studies of other interventions. Given concerns among service-learning scholars about the low levels of rigorous designs and methods in service-learning studies, only the most rigorous studies were selected for this analysis. Presented are inclusionary criteria for the studies reviewed here, as well as the methods used to review each study. Studies are then reviewed to determine whether particular interventions are more effective at, and provide clear evidence for, increasing specific civic outcomes among K-12 grade school-age students, and to identify strengths and weaknesses of the designs and methods used in current civic development research.

Types of Civic Interventions: Forms and Outcomes

A wide variety of civic outcomes have been measured in service-learning research. Across studies of K-12 service-learning, Billig (2000) identified multiple outcomes related to civic responsibility, including commitment to service, sense of civic responsibility, understanding of how government works, desire to become politically active, and engagement in

community organizations. Although positive civic outcomes have been identified for service-learning in some studies, the results overall appear to be mixed (Billig & Furco, 2002b; Galston, 2001). This may be due in part to a range in the quality of service-learning programs, as well as to whether civic engagement is an intentional goal of the service-learning programs that have been studied (Billig, 2004).

Mixed outcomes and the lack of definitive assessments that can be made about possible associations between service-learning and civic outcomes also may be attributable to insufficient rigor of methods. In recent years, leading service-learning scholars have called for increased rigor in service-learning research (Billig, 2003, 2004; Billig & Eyler, 2003; Billig & Furco, 2002a, 2002b; Bringle, 2003; Eyler, 2002; Furco, 2003). While service-learning has grown in implementation – at least 28% of public schools offer service-learning (Scales & Roehlkepartain, 2004) – research that is rigorous and replicable is still rare (Billig, 2003).

Multiple concerns have been identified about the current body of research on service-learning for K-12 students. In terms of study design, experimental designs with randomization of groups are extremely rare. Rarely do studies build upon each other; instead, they are “a mass of disconnected investigations” (Furco, 2003, p.15). Without designs that compare service-learning to a control or comparison group, nor studies that build upon each other, current service-learning research provides limited ability to generalize findings. Thus, a major need identified by service-learning scholars is more robust study designs (Billig, 2003).

Service-learning research rarely tests theory or competing hypotheses (Billig, 2003; Billig & Eyler, 2003; Bringle, 2003; Eyler, 2002). Theory-based research leads to findings with broader implications beyond a given study sample, and creates the possibility of research replication, while research that does not test theory “is decidedly inferior research” (Bringle,

2003, p.8). Additionally, service-learning research findings tend to be limited to short-term outcomes. Few studies provide insight into long-term impacts (Eyler, 2002; Furco, 2003), although longitudinal studies have been identified as essential for moving the field forward (Billig & Furco, 2002b).

Service-learning as a construct with requisite independent variables is not well-defined. Although researchers generally agree on a broad definition of service-learning, components of service-learning such as intensity, duration, and degree of reflection vary widely among studied programs and may not even be specified when study findings are reported (Billig, 2003; Billig & Furco, 2002a; Eyler, 2002). Scholars have called for clear specification of the service learning construct and measurement of variations in program design (Billig & Furco, 2002; Eyler, 2002). Leading service-learning scholars also have identified a need for multi-site studies; increased use of reliable and valid psychometric measures; and triangulation of data, rather than reliance on self-report measures (Billig & Eyler, 2003; Billig & Furco, 2002b; Eyler, 2002; Furco, 2003).

Such concerns about the level of rigor in service-learning research in general also have been applied specifically to research measuring civic outcomes. In presenting a proposed research agenda for K-12 service-learning, Billig and Furco (2002a) call for strengthening the quality of service-learning research as it pertains to civic outcomes. Billig and Furco also propose several research questions to strengthen the base of research evidence related to developing civic engagement; among these is to assess how service-learning compares to other models that aim to develop the civic capacities and actions of students.

Consistent with this proposed line of research, two additional intervention models for civic development have been identified in this paper to enable comparison with service-learning. Civic engagement outcomes have been measured by studies of community service programs and

civic education curricula. The three interventions vary widely from each other in design, incorporating varying degrees of classroom instruction, explicit civic content, and facilitated discussions or reflection about program activities. Some degree of community service is often incorporated into each of these types of interventions.

Community service programs tend to center around volunteering. Community service participation among students is widespread, with community service activities offered to students by 64% of public schools in the United States (Skinner & Chapman, 1999). Like service-learning, community service programs vary widely in practice in terms of type of service, scope of student responsibility, duration, intensity, and their voluntary or mandatory nature. Reviews of the effects of community service on civic outcomes have tended to include service-learning studies (e.g., Perry & Katula, 2001; Walker, 2002); accordingly, it has been difficult to differentiate the effects of community service from service-learning.

Formal civic education in K-12 schools has long been a priority of American public education. Thirteen states identify the promotion of good citizenship as a primary purpose of the state's educational system (CIRCLE, 2003). In public schools, civic education curricula have often been the method used to develop citizenship among students. A number of formal courses or supplementary curricular units have been developed in recent years that focus on skills for political knowledge and involvement. Such units may incorporate community service or service-learning components. These interventions tend to be more standardized than other civic development interventions, with established curricula that can be used at multiple sites.

Methods

Studies included in this review were chosen based on five criteria, including measures of rigor. First, studies were limited to those that integrated either a control or comparison group as

a “no treatment” condition. Second, quantitative measures had to be utilized to assess change in civic outcomes. Additionally, only studies published since 1995 were included, in order to focus on the most recent research in the field. All reviewed studies were limited to the United States. Finally, studies were limited to those published in peer-reviewed journals or reported by nationally-recognized research institutes, and accessible to the general public, either over the internet or through university library systems. Several of the more rigorous studies of youth civic engagement have been reported in evaluation reports by research centers, in dissertations, or in papers presented at conferences, limiting accessibility to the general public. As a result, some studies that met the other four criteria were not included in this review based on their lack of accessibility (e.g., Bailis & Melchior, 1998; Melchior & Orr, 1995).

To locate studies that met the inclusion criteria, an extensive search was conducted. First, seven electronic databases (Education Resources Information Center (ERIC), PsycINFO, Social Science Abstracts, Social Science Citation Index, Article First, Sociological Abstracts, and Public Affairs Information Service (PAIS) International) were searched using combinations of the following keywords: civic, youth, adolescent, youth development, political socialization, community service, service-learning, extracurricular, volunteer, and civic education. Second, reference lists on four major websites in the field related to service-learning, civic engagement, and youth development were searched.¹ In addition, reference lists from review articles (Michelsen, Zaff, & Hair, 2002; Perry & Katula, 2001; Walker, 2002; Zaff & Michelsen, 2001) related to civic education, civic engagement, community service, and service-learning were manually searched.

¹ The searched bibliographies were found on the following organizations’ websites: the National Service-Learning Clearinghouse, the Center for Information and Research on Civic Learning and Engagement, Learning in Deed, and the Harvard Family Research Project Out-of-School Time Program.

Based on these criteria and search procedures, 18 studies were selected for inclusion in this review. These studies fall into three categories of interventions, based on program design: 1) service-learning programs (Billig, Root, & Jesse, 2005; Covitt, 2002; Furco, 2002; Leming, 2001; Melchior, 1999; RMC Research Corporation, 2002; Scales, Blyth, Berkas, & Kielsmeier, 2000; Stafford, Boyd, & Lindner, 2003; Switzer, Simmons, Dew, Regalski, & Wang, 1995; Yamauchi, Billig, Meyer, & Hofschire, in press); 2) community service programs (Furco, 2002; Metz, McLellan, & Youniss, 2003; Metz & Youniss, 2003; Metz & Youniss, 2005; Waldstein & Reiher, 2001); and 3) civic education curricula (Kahne, Chi, & Middaugh, 2005; McDevitt & Chaffee, 2000; McDevitt, Kiouisis, Wu, Losch, & Ripley, 2003; Hartry & Porter, 2004).

Previous reviews of models for youth civic engagement have focused on fewer categories of interventions, or have not systematically assessed the rigor of the research designs and methods (e.g., Billig, 2000; Harvard Family Research Project, 2003; Perry & Katula, 2001; Walker, 2002; Zaff & Michelsen, 2001). This paper evaluates the effectiveness of service-learning on civic outcomes among students by comparing significant impacts across multiple types of interventions and by assessing the rigor of each study's design and methods.

The rigor of the design and methods used in each study was evaluated following an adaptation of the Methodological Quality Rating Scale (MQRS) model established by Miller, et al., (1995). The MQRS was developed for use in the alcohol treatment outcome literature. It evaluates studies along 12 different criteria and provides a useful model for systematically comparing methodological strengths and weaknesses across studies. Because the alcohol treatment field is older, more methodologically advanced, and receives more funding and policy support than the service-learning and youth civic engagement field, the scale was modified to allow for meaningful comparisons across the studies examined here. For example, the scale was

modified to allow for comparisons of whether key methodological data such as reliability and validity were reported and whether components of the intervention such as duration and intensity were specified. The 12 criteria in the adapted MQRS, shown in Table 1, are consistent with the elements of rigor called for by service-learning scholars and described in the review of literature above². Each study could receive a maximum of two points for each criterion based on information provided in the write-up of the study³, with a possible range along a continuum from 0 to 24.

[Insert Table 1 about here]

These ratings were divided along the mean (12.06) into two groups: “more rigorous” methodology and “less rigorous” methodology. Group assignment was then combined with findings of statistical significance and nonsignificance to create a categorical outcome attainment score (-2, -1, 1, 2), based on an adaptation of Rhee and Auslander’s (2002) Outcome Attainment Index (OAI). Thus, the claim of effect for a study with “more rigorous” methodology is indicated by either a “-2” if findings were not statistically significant or a “2” if findings were statistically significant. Likewise, a study with “less rigorous” methodology could receive either a “-1” if findings were not statistically significant or a “1” if findings were statistically significant. The adapted OAI is shown in Table 2.

[Insert Table 2 about here]

Outcome attainment scores were assigned for each study along six categories of outcomes. The lack of consistency among the 18 studies reviewed here in terms of specific

² It is hoped that the methodological rigor of service-learning studies and other civic development interventions will continue to strengthen. As research develops, future reviewers may wish to hold studies to higher standards, similar to those of the original MQRS. For example, the internal reliability coefficients of outcome measures used in the literature appear to vary widely; future analyses may find it worthwhile to evaluate studies based on the reliability of measures used.

³ It is possible that additional criteria were met in conducting the study beyond the information provided in the write-up; however, exclusion of such study elements from the broader researcher and practitioner audience provides a significant impediment to expansion and replication of research.

outcomes and the measures used for conceptually similar outcomes provided an impediment to comparing the effectiveness of each intervention type in impacting civic outcomes. Thus, we divided the outcomes into six conceptual categories. Civic engagement can be understood in terms of either social or political action (McBride, 2003), although conceptual distinctions are rarely made between service and political activities in the community service literature (Walker, 2002). Civic engagement can be measured in terms of attitudes towards engaging, intended or actual engagement behavior, and the skills and knowledge necessary for engagement. Thus, the various civic outcomes were divided into the following six specific categories: social knowledge and skills (8 different measures were used), social attitudes (25), social behavior (15), political knowledge and skills (7), political attitudes (10), and political behavior (21). These six outcome categories, as well as the many corresponding outcomes within these categories measured by the reviewed studies, are shown in Table 3.

[Insert Table 3 about here]

In several of the reviewed studies, multiple individual outcomes with different findings of statistical significance were measured within one of the six outcome categories. When this was the case, determination of statistical significance or nonsignificance for the category was based on the majority of findings within the category (i.e., if a study found significance for three different outcomes within the category of “political attitudes” and nonsignificance for two different outcomes, the study was rated as having statistical significance for that category). However, if findings within a particular outcome category were evenly split between statistical significance and nonsignificance, a conservative decision was made to assign the outcome a score reflecting statistical nonsignificance. Dashed lines are used in Figures 1-2 to indicate such split scores.

In evaluating findings of significance for each study, only main effects were taken into account. Although several studies measured the effects of moderating variables such as quality, the selected moderating variables and their measurement varied greatly, limiting comparison across studies. Thus, determinations of statistical significance and outcome attainment scores for each outcome category were based only on the main effect of the intervention. It should be noted that this is an important limitation to this analysis; studies such as Billig, et al. (2005) found greater significant impacts when the effects of moderating variables were measured.

Results

Each of the 12 items on the MQRS was worth up to 2 points, with a total of 24 possible points. Based on the information provided in the public write-up of each study, scores for the 18 studies reviewed here ranged from 7 to 16, with a mean score of 12.06. Studies with MQRS scores above this mean were considered to have more rigorous designs and methods; studies with MQRS scores below this mean had less rigorous designs and methods.

Social civic outcomes

No consistent theme emerged across studies regarding the impact of civic development interventions on social knowledge and skills. This category of outcomes measures skills such as ethical capacity and leadership. While multiple service-learning studies measure social knowledge and skills, only one study each of community service programs and of civic education curricula measured this outcome. Among studies of service-learning, most found no significance, including two with more rigorous designs and methods (Billig, et al., 2005; Leming, 2001, without an ethical reasoning component). Only three service-learning studies of social knowledge and skills had clearly statistically significant findings, as indicated in Figure 1

(Furco, 2002; Leming, 2001, for the ethical reasoning condition; Melchior, 1999, for high school students at the short-term and follow-up dates).

[Insert Figure 1 about here]

The social attitudes category includes a wide variety of civic outcomes related to how youth view themselves as part of a community and the importance they attribute to community service. Seven of the 10 service-learning studies measured social attitudes, but only two had significant findings, as shown in Figure 1 (RMC Research Corporation, 2002; Stafford, et al., 2003). Most service-learning interventions showed no statistically significant difference in social attitudes between participants and non-participants. Moreover, all service-learning studies with more rigorous designs and methods found no impact from service-learning on social attitudes. Although fewer studies have been conducted of the impact on social attitudes of community service (Metz, et al., 2003; Waldstein & Reiher, 2001) and curricula (Hartry & Porter, 2004), each of these studies had statistically significant findings.

Social behavioral outcomes measure current or intended behavior by youth in community affairs. This is a common category of outcomes measured by both community service and service-learning studies. All five studies of community service programs and six of the 10 studies on service-learning measured social behavior outcomes. Overall, findings were mixed for all three interventions, suggesting that none of these interventions has yet proven itself to be an effective model for impacting civic behavior in the social arena. Three of the service-learning studies, including two with more rigorous designs and methods, had statistically significant findings, as indicated in Figure 1 (Leming, 2001, for the ethical reasoning condition; Melchior, 1999, for high school students at the follow-up; Switzer, 1995).

Political outcomes

Few intervention studies measured political knowledge and skills. This outcome category measures knowledge of politics, elections, and issues relating to government. Only curricular interventions had statistically significant findings. In particular, as Figure 2 shows, two different more rigorous studies of the Kids Voting curriculum had significant findings (McDevitt & Chaffee, 2000; McDevitt, et al., 2003). The only service-learning study measuring this outcome found no statistical significance, using more rigorous designs and methods.

[Insert Figure 2 about here]

Political attitudes, including such outcomes as feelings of civic obligation and opinion about politics, were measured primarily by the curricular intervention studies. As indicated in Figure 2, the three curricular studies measuring this outcome showed mixed results. One study with more rigor found statistical significance (McDevitt, et al., 2003), while the other found no statistically significant impact (Kahne, et al., 2005). Few other studies and no service-learning study measured political attitudes.

Current political behavior as well as future intentions to participate in political activities were also measured primarily by curricular interventions. As Figure 2 shows, four curricular studies measured this outcome, all with statistically significant findings (Hartry & Porter, 2004; Kahne, et al., 2005; McDevitt & Chaffee, 2000; McDevitt, et al., 2003). Three of the four studies were more rigorous. There was no clear evidence of a statistically significant impact on political behavior from either community service or service-learning.

[Discussion]

The comparative analysis suggests that service-learning may be less successful at impacting student civic outcomes than anticipated, particularly if moderating variables, such as the “Essential Elements” of service-learning (e.g., Billig, et al., 2005) are not present. However,

it cannot be concluded at this point that service-learning interventions do not increase civic outcomes. In order to determine whether service-learning has a comparative advantage over other civic development interventions for school-age children and youth, more attention is needed to specification and sensitivity of measurement of both the independent variable and the dependent variable, as well as improved rigor of designs and methods.

Support for outcomes

Only one study among all three interventions had both rigor and statistical significance in terms of impacts on social knowledge and skills. This is a service-learning study (Leming, 2001, with an ethical reasoning component); however findings for the effect of service-learning on social knowledge and skills are mixed. As is the case for all social outcomes, more studies of service-learning find statistical nonsignificance than significance. None of the intervention types show strong evidence of effectiveness in increasing social knowledge and skills.

Based on the frequency with which social attitudes are measured by studies of service-learning, service-learning appears to be commonly used as a means to increase youth social attitudes. However, it is possible that service-learning may not be the most effective method to increase social attitudes. Little support was found for service-learning along these outcomes; in fact, the four studies of service-learning with more rigor found no statistical difference between service-learning participants and nonparticipants in terms of social attitudes.

Evidence for the effect of service-learning on social behavior is mixed as well. Two studies with more rigor had statistically significant findings, but the majority of service-learning studies showed nonsignificance along this outcome. This may mean that service-learning is not particularly effective at impacting student behavior; however, across all six outcomes, more service-learning studies with more rigor had significant findings for this outcome. Accordingly,

in terms of civic outcomes, service-learning may be most successful at impacting student involvement within communities beyond the program experience. No conclusions for impacts on social behavior emerge from the other civic development interventions. The support for community service and civic education curricula is mixed.

Only one service-learning study measured any outcomes in the political sphere, with statistically nonsignificant findings for both political behavior and political knowledge and skills (Billig, et al., 2005). Curricular interventions appear to be most concerned with political outcomes, although two community service studies measured political outcomes as well. Among the curricular interventions, studies of the Kids Voting curriculum (McDevitt & Chaffee, 2000; McDevitt, et al., 2003) showed support for all three political outcomes. Each curricular study measuring political behavior or political skills and knowledge suggests a statistically significant impact on these outcomes. Two community service studies examined political behavior, yet no convincing statistically significant relationship was identified. Overall, curricular interventions appear to be the strongest intervention for political aspects of civic engagement; however, it is difficult to draw definitive conclusions about the comparative effectiveness of this intervention because few of the other types of studies even measure political impacts.

Although there is evidence that curricular interventions may be more effective at increasing political outcomes, few clear patterns of support exist within the social outcome categories. Certain types of interventions are more commonly studied in connection with certain outcomes, thus limiting our ability to compare the effectiveness of interventions. In particular, political outcomes tend to be measured by curricular interventions, while social outcomes tend to be measured by community service and service-learning interventions. Among civic outcomes, service-learning appears to be studied most in conjunction with social attitudes. Perhaps these

delineations are attributable to conceptual differences in the purposes associated with the use of these different interventions (e.g., that service-learning is not intended to impact political outcomes, while civic education curricula are). Further work in the field of civic engagement should explore whether such delineations are appropriate. For example, previous studies have suggested that service-learning can increase political engagement (Billig, 2000; Morgan & Streb, 2001); yet, only one service-learning study reviewed here measured any political outcomes. Given the current scholarly and public concern over the lack of political engagement among youth, why are the most rigorous service-learning studies not measuring political effects?

Intervention specification

It is worth noting again that only main effects were evaluated in this analysis. Taking into account moderating variables such as program quality may have resulted in different findings of significance. For example, Morgan & Streb (2001) found more positive outcomes for service-learning when student voice was incorporated into the analysis. Duration, type of activity, and degree of reflection in service-learning programs also have been associated with positive outcomes (Eyler & Giles, 1997; Melchior & Bailis, 2002; Moore & Sandholz, 1999). It was not possible in this review to take such variables into account because the degree to which interventions were specified varied widely.

Few studies analyzed moderating variables, much less the same set of moderating variables. Eight studies provide little information about components of the intervention such as duration, type of activity and the extent of reflection. Only four studies conducted any sort of statistical analysis based on variations in the independent variable. Given research suggesting empirical associations between structural factors and intervention outcomes, more attention should be paid to specification and analysis of these factors.

Moreover, many of the community service and service-learning interventions involve students participating in an array of service activities. While some studies indicate the actual domains of service activity in which students participated, this is not the case for all studies. For the most part, differing forms of activities appear to be treated as comparable. In this review, the studies that identify various domains of service activities are grouped together with other studies of the same intervention because there are too few studies of each type of activity to allow meaningful comparison. However, variations in service type are indicated in Figures 1-2 when they have been specifically identified and measured by study author(s). If as Metz, et al. (2003) hypothesize, the type or orientation of the service activity influences student outcomes, then specification of the domains of service activity is essential for determining whether some forms of service are more effective in bringing about positive outcomes than others.

Specification and measurement of outcomes

As Table 3 illustrates, there is little consistency or precision across studies in terms of the measures used to study youth outcomes. For example, outcomes categorized within the social attitude subgroup are measured by 25 different scales, indices, and single-item measures. Although there is great overlap in many of the measures, each is distinct. Moreover, few of the measures are explicitly linked to or derived from standardized measures.

The inconsistency across measures used by different studies makes comparison across interventions difficult. In order to strengthen consistency and precision of measures, clear operational distinctions need to be made between the different concepts measured in these studies. For example, an examination of the different measures presented in Table 3 suggests that there are several distinct operational concepts within each outcome category. Within the social attitude category, we suggest that four main concepts emerge: social responsibility,

altruism, community membership, and efficacy. Within the social skills and knowledge category, there are three main concepts: community understanding, ethical skills, and leadership. Likewise, the social and political behavior categories can be further divided in terms of current behavior and intent to participate in the future. We also suggest four main concepts within the political attitude category: attitudes towards institutions of government, interest in politics, efficacy, and interest in politics. Research in this field would be strengthened by identifying these concepts and designing corresponding measures for use across studies.

Conceptual ambiguity about civic engagement (Walker, 2002) may be to blame for the wide variety of outcome measures in the civic development literature. However, more clearly defined and consistent measures would promote knowledge of how effective each of these interventions is in achieving desired outcomes. If studies consistently find statistical insignificance for a particular measure, it could be determined more easily whether this is due to poor validity of the outcome measure, or to current intervention models not appropriately targeting that outcome. Thus, consistency across dependent variable measures could result in strengthened models for civic development programs.

Rigor of design and methods

Consistent with concerns expressed by such service-learning scholars as Shelley Billig, Janet Eyler, and Andrew Furco about the level of rigor in service-learning research, this review found multiple weaknesses in both the service-learning research and civic development intervention research in general. Social scientific research faces challenges in conducting studies with randomized experimental research designs, and service-learning, in particular, is constrained by the lack of funding to support rigorous -- and thus expensive -- studies (Billig & Furco, 2002b). However, without rigorous designs and methods, we are left unable to make

definitive claims about comparative impacts of civic development interventions. The use of post-test only designs (five studies) and self selection into study conditions (five studies either allowed subjects to self-select or did not clarify the selection process) are still too common. Only one study conducted statistical analyses of attrition, while nine did not discuss nor report attrition or response rates. Although all studies that incorporated pre-tests into their design controlled for baseline pre-test differences between groups, more attention needs to be paid across civic development research to isolating the effectiveness of the intervention so that causation can be better approximated.

Another major limitation among these studies is the lack of follow-up measurements. While Hartry and Porter (2004) plan to use the data from their pilot study to develop a longitudinal study and Billig, et al. (2005) plan a second year of data collection, only one study reviewed here (Melchior, 1999) included follow-up measures. Without follow-up, we do not know if any of these interventions have long-term effects on students.

Scholars have called for triangulation of data, use of reliable and valid measures, and multi-site studies (Billig & Eyler, 2003; Billig & Furco, 2002a; Eyler, 2002; Furco, 2003). Notably, eight of the reviewed studies used triangulation, supplementing participant self-report questionnaires with methods such as observation and focus groups. Reliability coefficients were provided for outcome measures in 15 studies, although more attention should be paid to the coefficient value -- few measures exhibited commonly accepted levels of reliability. More than half of the studies (11) were conducted at multiple sites, strengthening generalizability.

More attention to design, methods, and substantive elements of reporting is essential in order to strengthen civic development research and interventions. Attention to these issues will increase the possibility for replication. Replication is a major component of the scientific

method, essential for improving both civic development scholarship and practice. Replication can also be strengthened by increased reporting of study findings in peer-reviewed journals. Only 10 of the reviewed studies were published or are currently in press in peer-reviewed journals. Service-learning studies, in particular, appear to be published regularly in the form of research center evaluation reports or in book chapters. Submitting such studies to the peer review process and reporting findings in journals is likely to enhance the quality of reporting and the audience for study findings, although it is acknowledged that there are few journals dedicated to service, which limits publication outlets (McBride & Sherraden, 2004).

Conclusion

This systematic assessment of the rigor of designs and methods of these studies suggests directions for future service-learning research that can inform strengthened program models. The knowledge base is growing, the field is indeed moving beyond descriptive research, but what more can be done? With the caveats and substantial limitations of this analysis, comparative study of the effects of civic development interventions does not conclude that service-learning is the most effective intervention for increasing youth outcomes across all civic categories. However, this comparative analysis facilitates identification of the strengths and weaknesses of the current research base. Improved operationalization and measurement of independent and dependent variables, more rigorous designs and methods, and greater attention to civic engagement as an intentional outcome of service-learning may well show service-learning to be the most effective civic intervention and result in the identification of effective models for replication.

References

- Bailis L. & Melchior, A. (1998). Evaluation of the active citizenship today (ACT) program: Final report. Prepared for the Close Up Foundation and the Constitutional Rights Foundation. Waltham, MA: Center for Human Resources, Brandeis University.
- Billig, S. H. (2000). Research on K-12 school-based service-learning: the evidence builds. *Phi Delta Kappan*, 81(9), 658-664.
- Billig, S.H. (2003). Introduction. In S.H. Billig & A.S. Waterman (Eds.), *Studying Service-Learning: Innovations in Education Research Methodology*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Billig, S. H. (2004). Heads, Hearts, and Hands: The Research on K-12 Service-Learning. In Growing to Greatness: The State of Service-Learning Project 2004 (pp. 12-25). St. Paul, MN: National Youth Leadership Council.
- Billig, S.H. & Eyler, J. (2003). The state of service-learning and service-learning research. In S. Billig & J. Eyler (Eds.), *Deconstructing Service-Learning: Research Exploring Context, Participation, and Impacts*. Greenwich, CT: Information Age Publishing.
- Billig, S.H. & Furco, A. (2002a). Research agenda for K-12 service-learning: A proposal to the field. In A. Furco & S. Billig (Eds.), *Service-Learning: The Essence of the Pedagogy*. Greenwich, CT: Information Age Publishing.
- Billig, S.H. & Furco, A. (2002b). Supporting a strategic service-learning research plan. In S. Billig & A. Furco (Eds.), *Serving-Learning Through a Multidisciplinary Lens*. Greenwich, CT: Information Age Publishing.

- Billig, S.H., Root, S., & Jesse, D. (2005). *The impact of participation in service-learning on high school students' civic engagement*. (Working Paper 33). College Park, MD: Center for Information and Research on Civic Learning and Engagement.
- Bringle, R. (2003). Enhancing theory-based research on service-learning. In S. Billig & J. Eyler (Eds.), *Deconstructing Service-Learning: Research Exploring Context, Participation, and Impacts*. Greenwich, CT: Information Age Publishing.
- Center for Information and Research on Civic Learning and Engagement (CIRCLE). (2003). *The Civic Mission of Schools*. College Park, MD: Center for Information and Research on Civic Learning and Engagement and The Carnegie Corporation.
- Center for Information and Research on Civic Learning and Engagement (CIRCLE). (2005, May 26). *Census data shows youth voter turnout surged more than any other age group*. College Park, MD: Center for Information and Research on Civic Learning and Engagement.
- Covitt, B.A. (2002). *Motivating environmentally responsible behaviors through service-learning*. Washington, D.C.: Corporation for National Service.
- Eyler, J. (2002). Stretching to meet the challenge: Improving the quality of research to improve the quality of service-learning. In S. Billig & A. Furco (Eds), *Service-Learning Through a Multidisciplinary Lens*. Greenwich, CT: Information Age Publishing.
- Eyler, J. & Giles, D. (1997). The importance of program quality in service-learning. In A. S. Waterman (Ed.), *Service-Learning: Applications from the Research* (pp.57-76). Mahwah, NJ: Lawrence Erlbaum Associates.
- Finn, J.L. & Checkoway, B. (1998). Young people as competent community builders: A challenge to social work. *Social Work*, 43, 4, 335-346.

- Flanagan, C.A. & Faison, N. (2001). Youth civic development: Implications of research for social policy and programs. *Social Policy Report*. Ann Arbor, MI: Society for Research in Child Development.
- Furco, A. (2002). Is service learning really better than community service? A study of high school service program outcomes. In Furco & Billig, eds., *Service-Learning: The Essence of the Pedagogy*, p. 23-50. Greenwich, CT: Information Age Publishers.
- Furco, A. (2003). Issues of definition and program diversity in the study of service-learning. In S.H. Billig & A.S. Waterman (Eds.), *Studying Service-Learning: Innovations in Education Research Methodology*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Galston, W.A. (2001). Political knowledge, political engagement, and civic engagement. *Annual Review of Political Science*, 4, 217-231.
- Gibson, C. (2001, November). *From inspiration to participation: A review of perspectives on youth civic engagement*. Berkeley, CA: The Grantmaker Forum on Community and National Service.
- Hartry, A. & Porter, K. (2004, July). *We the People* curriculum: Results of pilot test. A report to the Center for Civic Education. Calabassas, CA: Center for Civic Education. Retrieved October 7, 2005 from www.civiced.org/research/pdfs/pilot2.pdf.
- Harvard Family Research Project. (2003). *Out-of-School Time Evaluation Snapshot. A Review of Out-of-School Time Program Quasi-Experimental and Experimental Evaluation Results*. Boston, MA: Harvard Graduate School of Education.
- Kahne, J., Chi, B., & Middaugh, E.. (2005). *Building social capital for civic and political engagement: The potential of high school government courses*. Manuscript submitted for publication.

- Keeter, S., Andolina, M., Jenkins, K., Zukin, C. (2002). *Schooling and civic engagement in the U.S.* Paper presented at the 2002 Annual Meeting of the American Political Science Association, August 29-September 1, 2002. Boston, MA.
- Leming, J. (2001). Integrating a structured ethical reflection curriculum into high school community service experiences: Impact on students' sociomoral development. *Adolescence*, 36(141), 33-45.
- Levine, P. & Lopez, M. H. (2002, September). *Youth voter turnout has declined, by any measure*, fact sheet. College Park, MD: The Center for Information and Research on Civic Learning and Engagement.
- McBride, A.M. (2003). Asset ownership among low-income and low-wealth individuals: Opportunity, asset ownership, and civic engagement (Doctoral dissertation, Washington University, 2003). *Dissertation Abstracts International*, 64, 3483.
- McBride, A.M. & Sherraden, M. (2004). Toward a global research agenda on civic service: Editors' introduction to this special issue. *Nonprofit and Voluntary Sector Quarterly*, 33, 3S-7S.
- McDevitt, M., & Chaffee, S. (2000). Closing gaps in political communication and knowledge: Effects of a school intervention. *Communication Research*, 27(3), 259-292.
- McDevitt, M., Kiouisis, S., Wu, X., Losch, M. & Ripley, T. (2003). *The civic bonding of school and family: How Kids Voting students enliven the domestic sphere* [Working Paper 07]. College Park Maryland: Center for Information and Research on Civic Learning and Engagement.
- Melchior, A. (1999). Summary report: National evaluation of Learn and Serve American school and community based programs. Brandeis University: Center for Human Resources.

- Melchior, A. and 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.), *Service-Learning: The essence of the pedagogy* (pp. 201-222). Greenwich, CT: Information Age Publishing.
- Melchior A. & Orr, L. (1995). Final report: Impacts of Serve-America. Prepared for the Corporation for National Service. Cambridge, MA: Abt Associates.
- Metz, E., McLellan, J., & Youniss, J. (2003). Types of voluntary service and adolescents' civic development. *Journal of Adolescent Research*, 18(2), 188-203.
- Metz, E. & Youniss, J. (2003). A demonstration that school-based required service does not deter - but heightens - volunteerism. *PS Political Science & Politics*, 36, 281-286.
- Metz, E. & Youniss, J. (2005). Longitudinal gains in civic development through school-based required service. *Political Psychology*, 26, 3, 413-437.
- Michelsen, E., Zaff, J.F., & Hair, E.C. (2002, May). *Civic engagement programs and youth development: A synthesis*. Washington, D.C.: Child Trends.
- Miller, W.R., Brown, J.M., Simpson, T.L., Handmaker, N.S., Bien, T.H., Luckie, L.H., et al. (1995). What works? A methodological analysis of the alcohol treatment outcome literature. In R.K. Hester & W.R. Miller (Eds.), *Handbook of Alcoholism Treatment Approaches: Effective Alternatives* (2nd ed., pp. 12-44). Needham Heights, MA: Allyn & Bacon.
- Moore, K. P. & Sandholtz, J. H. (1999). Designing successful service learning projects for urban schools. *Urban Education*, 34(4),480-498.
- Morgan, W. & M. Streb (2001). "Building citizenship: How student voice in service-learning develops civic values." *Social Science Quarterly* 82, 154-169.

- National Commission on Service Learning (2002). *Learning in Deed: The Power of Service-Learning for American Schools*. Newtown, MA: W.K. Kellogg Foundation.
- Olander, M. (2003). *How young people express their political views*. (Fact Sheet). College Park, MD: The Center for Information and Research on Civic Learning and Engagement.
- Perry, J. & Katula, M. (2001). Does service affect citizenship? *Administration & Society*, 33(3), 330-365.
- Rhee & Auslander, W. (2002).
- RMC Research Corporation (2002, November). *Evaluation Report Colorado Department of Education Service Learning*. Denver, CO.
- Scales, P., Blyth, D., Berkas, T., & Kielsmeier, J. (2000). The effects of service-learning on middle school students' social responsibility and academic success. *Journal of Early Adolescence*, 20(3), 332-358.
- Scales, P.C. & Roehlkepartain, E.C. (2004). *Community Service and Service-Learning in U.S. Public Schools, 2004: Findings from a National Survey*. St. Paul, MN: National Youth Leadership Council.
- Skinner, R. & Chapman, C. (1999, September). *Service-Learning and Community Service in K-12 Public Schools* (Statistics in Brief). Washington, D.C.: National Center for Education Statistics.
- Stafford, J., Boyd, B., & Lindner, J. (2003). The effects of service learning on leadership life skills of 4-H members. *Journal of Agricultural Education*, 44, 10-21.
- Switzer, G.E., Simmons, R.G., Dew, M.A., Regalski, J.M., & Wang, C. (1995). The effect of a school-based helper program on adolescent self-image, attitudes, and behavior. *Journal of Early Adolescence*, 15, 429-455.

- Torney-Purta, J. (2001). What adolescents know about citizenship and democracy. *Educational Leadership, 59*, 4, 45-50.
- Waldstein, F.A. & Reiher, T.C. (2001). Service-learning and students' personal and civic development. *The Journal of Experiential Education, 24*, 1, 7-13.
- Walker, T. (2002). Service as a pathway to political participation: What research tells us. *Applied Developmental Science, 6*(4), 183-188.
- Yamauchi, L., Billig, S., Meyer, S., & Hofschire, L. (in press). Student outcomes associated with service-learning in a culturally relevant high school program. *Journal of Prevention and Intervention in the Community*.
- Youniss, J., McLellan, J.A., & Yates, M. (1997). What we know about engendering civic identity. *American Behavioral Scientist, 40*, 620-631.
- Zaff, J. & Michelsen, E. (2001, Dec.) *Background for community-level work on positive citizenship in adolescence: Reviewing the literature on contributing factors*. Washington, DC: Child Trends.

Table 1
*Methodological Quality Rating Scale*⁴

Criteria	Rating (Points) ⁵
1. Study Design	0=Post-test only design 1=Pre-test/post-test (with comparison group) 2=Pre-test/post-test (with equivalent control group)
2. Subject Selection	0=Subjects self-selected for intervention condition, or unclear selection process 2=Subjects assigned without self-selection
3. Theoretical Foundation	0=Theoretical basis for intervention or hypotheses unclear or not stated 1=Hypotheses to be tested clearly stated 2=Theoretical basis for intervention clearly stated
4. Standardization of Intervention	0=Guidelines for consistent administration of intervention not evident 1=Specific manual/guidelines/training exists; however, variation exists among program sites 2=Intervention is standardized
5. Specification of Independent Variable	0=Components of the intervention (e.g. duration, type of activity, extent of reflection) not clearly described 1=Multiple components of the intervention clearly described; analysis of specific components not conducted 2=Statistical analysis conducted of component(s) effects on outcomes
6. Follow-Up	0=No follow-up measurement 2=Follow-up measurement
7. Triangulation	0=No verification of participant self-report on outcome measures 2=Verification of participant self-report using additional measures
8. Dropouts/Attrition	0=Dropouts/response rate neither discussed nor accounted for 1=Intervention dropouts/response rate discussed and/or enumerated 2=Statistical analysis of attrition conducted
9. Measures	0=Reliability/validity of measures not reported 2=Reliability/validity of measures reported
10. Analyses	0=Differences between groups not analyzed 1=Analysis solely controls for demographic differences between groups 2=Analysis controls for baseline pre-test differences between groups
11. Multi-site	0=Single site, or comparison of sites with different interventions 2= Interventions at multiple sites
12. Reporting of Findings	0=Not reported in peer-reviewed journal 2=Reported in peer-reviewed journal

⁴ Adapted from Miller, et al. (1995).

⁵ Scores range from 0 (low) to 24 (high).

Table 2
*Outcome Attainment Index*⁶

2	=	Significant; more rigorous methodology (MQRS>12.06)
1	=	Significant; less rigorous methodology (MQRS<=12.06)
-1	=	Not significant; less rigorous methodology (MQRS<=12.06)
-2	=	Not significant; more rigorous methodology (MQRS>12.06)

⁶ Adapted from Rhee & Auslander, 2002.

Table 3
Grouping of Outcomes Across Studies

Social knowledge and skills	Social attitudes	Social behavior/intended behavior	Political skills and knowledge	Political attitudes	Political behavior/intended behavior
<p><u>Community Understanding</u></p> <ul style="list-style-type: none"> • Knowledge of social networks • Understand issues that affect the well-being of your community <p><u>Ethical Skills</u></p> <ul style="list-style-type: none"> • Ethical domain • Personal ethical agency <p><u>Leadership</u></p> <ul style="list-style-type: none"> • Civic skills • Have leadership skills • Personal leadership development subscale • Service leadership 	<p><u>Altruism</u></p> <ul style="list-style-type: none"> • Altruistic self-image • Concern for social issues scale • Like to help other people • Like to help others even if they are not willing to help themselves • Social welfare subscale (concern for others welfare) • Willing to take risks for the sake of doing what is right <p><u>Community Membership</u></p> <ul style="list-style-type: none"> • Belong to the community • Community attachment • Community engagement scale (feel proud of my community) • Connection to community • Have pride in your community • Viewed by community members as valued part of the community <p><u>Efficacy</u></p> <ul style="list-style-type: none"> • Civic efficacy 	<p><u>Current Behavior</u></p> <ul style="list-style-type: none"> • Commitment (to school and community) • Contribute to the community • Estimated hours of volunteer service in past 6 months • Involved in activities that will make peoples' lives better • Involvement in any volunteer activity in past 6 months • Personally responsible citizenship • Support for unconventional activism (confronting police, boycotting, buycotting) • Take action and make changes in your community <p><u>Future Intentions</u></p> <ul style="list-style-type: none"> • Civic participation domain • Commitment to help others in future • Future service (intent to perform future voluntary service) • Index of intentions to help Bay (to help 	<ul style="list-style-type: none"> • Civic knowledge (factual questions about government and civics) • Election knowledge • Integration of new information • Knowledge scale • Political knowledge • Salience of key state issue • Self assessment of civic knowledge 	<p><u>Attitudes Towards Institutions of Government</u></p> <ul style="list-style-type: none"> • Appreciation of democracy • Assessment of government impact • Evaluation of government • Social trust <p><u>Efficacy</u></p> <ul style="list-style-type: none"> • Political efficacy <p><u>Interest in Politics</u></p> <ul style="list-style-type: none"> • Holding opinions • Interest and understanding (of politics) • Partisanship • Strongly held views <p><u>Political Responsibility</u></p> <ul style="list-style-type: none"> • Citizens responsibilities (importance of voting, protesting, campaigning) 	<p><u>Current Behavior</u></p> <ul style="list-style-type: none"> • Attention to a key state election issue • Attention to election news • Attention to news (political news) • Attention to politics • Civic engagement activities (discussing politics, participating in rallies, following the news) • Frequency of election discussion with friends • Frequency of election discussion with parents • Frequency of reading newspaper (news) • Frequency of student-parent discussion (of campaign, election) • Participation in student government • Political participation • TV news viewing • Use of information • Willingness to express views (at a public meeting) • Willingness to listen to opposing views • Willingness to openly disagree with others about politics

	<ul style="list-style-type: none"> • Efficacy subscale <p><u>Social Responsibility</u></p> <ul style="list-style-type: none"> • Citizen obligations (importance of serving) • Civic dispositions • Civic responsibility • Community responsibility (importance of being publicly active) • Duty subscale (responsibility to help others) • Have a responsibility for the welfare of the community • Importance of service (environmental, community, to persons) • Personal and social responsibility <p><u>Multiple Domains</u></p> <ul style="list-style-type: none"> • Civic attitudes combined scale • Contributor to community subscale (mostly attitudinal items) • Social relatedness 	<p>environmental cause)</p> <ul style="list-style-type: none"> • Likelihood of future service (environmental, community, to persons) • Moral-political awareness (anticipated future participation in community affairs) • Would like to take action and make community changes 			<p><u>Future Intentions</u></p> <ul style="list-style-type: none"> • Future unconventional civic intentions (boycott, demonstrate, work for future political campaigns) • Future voting • Justice-oriented citizenship • Participatory citizenship • Support for conventional politics (voting and contributing money)
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Figure 1:
Civic Intervention Studies by Civic Outcome: Social Outcomes⁷⁸⁹

		Social Knowledge and Skills				Social Attitudes				Social Behavior			
		Not Statistically Significant		Statistically Significant		Not Statistically Significant		Statistically Significant		Not Statistically Significant		Statistically Significant	
		-2	-1	1	2	-2	-1	1	2	-2	-1	1	2
Service	Furco (2002)			■							■		
	Metz, et al. (2003) - with social cause orientation							■				■	
	Metz & Youniss (2003) - mandatory; students "less inclined" to service											■	
	Metz & Youniss (2003) - mandatory; students "more inclined" to service									■			
	Metz & Youniss (2005) - mandatory; students "less inclined" to service									■			
	Metz & Youniss (2005) - mandatory; students "more inclined" to service											■	
	Waldstein & Reiher (2001) - varied service experiences							■				■	
Service-learning	Billig, et al. (2005)	■				■							
	Covitt (2002) - standardized environmental SL										■		
	Covitt (2002) - nonstandardized environmental SL										■		
	Furco (2002)			■							■		
	Leming (2001) - without ethical reasoning component	■				■							■
	Leming (2001) - with ethical reasoning component				■	■				■			
	Melchior (1998) - middle school youth		■				■				■		
	Melchior (1998) - high school youth			■			■					■	
	Melchior (1998) - high school follow-up			■			■				■		
	Melchior (1998) - middle school follow-up		■				■				■		
	RMC Corporation (2002) - students grade 6 and above							■					
	RMC Corporation (2002) - students grade 5 and below							■					
	Scales, et al. (2000)					■							
	Stafford, et al. (2003) - with immediate reflection period		■					■					
	Switzer, et al. (1995) - mandatory					■							■
Yamauchi, et al. (2005) - with cultural curriculum		■				■				■			
Curricular	Hartry & Porter (2004) - We the People curriculum							■					
	Kahne, et al. (2005) - City Works curriculum	■								■			
	McDevitt & Chaffee (2000) - Kids Voting curriculum												
	McDevitt, et al. (2003) - Kids Voting curriculum												■

Figure 2:

⁷ -2=Not statistically significant; more rigorous methodology; -1=Not statistically significant; less rigorous methodology; 1=Statistically significant; less rigorous methodology; 2=Statistically significant; more rigorous methodology

⁸ In several studies, multiple intervention conditions were compared to a “no treatment” condition; in such cases, each separate condition is listed individually.

⁹ Results are shown for all studies measuring any effects in this outcome category. If no score is shown for a study or condition, the study did not assess any effects in this outcome category. Dashed lines are used to indicate findings that were evenly split between statistical significance and nonsignificance.

Civic Intervention Studies by Civic Outcome: Political Outcomes¹⁰¹¹¹²

		Political Knowledge and Skills				Political Attitudes				Political Behavior			
		Not Statistically Significant		Statistically Significant		Not Statistically Significant		Statistically Significant		Not Statistically Significant		Statistically Significant	
		-2	-1	1	2	-2	-1	1	2	-2	-1	1	2
Service	Furco (2002)												
	Metz, et al. (2003) - with social cause orientation										■		
	Metz & Youniss (2003) - mandatory; students "less inclined" to service												
	Metz & Youniss (2003) - mandatory; students "more inclined" to service												
	Metz & Youniss (2005) - mandatory; students "less inclined" to service						■					■	
	Metz & Youniss (2005) - mandatory; students "more inclined" to service							■				■	
	Waldstein & Reiher (2001) - varied service experiences												
Service-learning	Billig, et al. (2005)	■								■			
	Covitt (2002) - standardized environmental SL												
	Covitt (2002) - nonstandardized environmental SL												
	Furco (2002)												
	Leming (2001) - without ethical reasoning component												
	Leming (2001) - with ethical reasoning component												
	Melchior (1998) - middle school youth												
	Melchior (1998) - high school youth												
	Melchior (1998) - high school follow-up												
	Melchior (1998) - middle school follow-up												
	RMC Corporation (2002) - students grade 6 and above												
	RMC Corporation (2002) - students grade 5 and below												
	Scales, et al. (2000)												
	Stafford, et al. (2003) - with immediate reflection period												
Switzer, et al. (1995) - mandatory													
Yamauchi, et al. (2005) - with cultural curriculum													
Curricular	Hartry & Porter (2004) - We the People curriculum			■			■					■	
	Kahne, et al. (2005) - City Works curriculum					■							■
	McDevitt & Chaffee (2000) - Kids Voting curriculum				■								
	McDevitt, et al. (2003) - Kids Voting curriculum				■				■				

¹⁰ -2=Not statistically significant; more rigorous methodology; -1=Not statistically significant; less rigorous methodology; 1=Statistically significant; less rigorous methodology; 2=Statistically significant; more rigorous methodology

¹¹ In several studies, multiple intervention conditions were compared to a “no treatment” condition; in such cases, each separate condition is listed individually.

¹² Results are shown for all studies measuring any effects in this outcome category. If no score is shown for a study or condition, the study did not assess any effects in this outcome category. Dashed lines are used to indicate findings that were evenly split between statistical significance and nonsignificance.