

1-2003

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Recommended Citation

RMC Research Corporation, "The Impact of Service-Learning on MEAP: A Large Scale Study of Michigan Learn and Serve Grantees" (2003). *Project Summaries*. 36.

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***The Impact of Service-Learning on MEAP:
A Large Scale Study of Michigan Learn
and Serve Grantees***

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January 2003

Executive Summary

Service-learning is a teaching strategy that involves students in service projects that are connected to the curriculum. Service-learning has its roots in the ideas of philosophers, such as Piaget and Dewey, who argued that students learn more when they are actively involved in their own learning and when learning has a distinct purpose (Anderson, Kinsley, Negroni, & Price, 1991; Conrad & Hedin, 1991; Kinsley, 1997). A body of evidence is building in support of the positive academic outcomes of service-learning (see Billig, 2000 for a review). However, the conclusions that can be drawn from many of these research studies are limited by methodological problems inherent in the current body of research.

The Michigan Community Service Commission (MCSC) contracted with RMC Research to conduct a study that would address the shortcomings in the existing service-learning literature. The study was designed to contribute to the field of service-learning by examining, in detail, the role of various program characteristics in moderating the effects of service-learning on academic outcomes in schools that have received Learn and Serve Michigan funding. Particular attention was paid to student engagement as the mediating variable to explain how service-learning impacts achievement.

The study was designed to address five research questions.

1. What is the association between participation in service-learning and student engagement in school?
2. Do aspects of program quality moderate the association between participation in service-learning and student engagement in school? Which program characteristics are most important for predicting student engagement in school?
3. What is the association between participation in service-learning and academic achievement, as measured by the Michigan Educational Assessment Program (MEAP) for students in Learn and Serve Michigan schools? Is the impact of service-learning specific to the academic area addressed by the service-learning project? For example, does participation in a science-related project only have an impact on science test scores? If not, under what circumstances does service-learning participation generalize to other academic areas?
4. To what extent is the association between participation in service-learning and academic achievement, as measured by the MEAP, mediated by student engagement in school?
5. Do aspects of program quality moderate the association between participation in service-learning and academic outcomes? Which program characteristics are most important for predicting academic outcomes?

This report represents an interim report based on one year of data collection. Data will again be collected in spring 2003, effectively doubling the total sample size for the study. Because this report includes only half of the total expected sample size for the study, it is not yet possible to address all five of the research questions outlined above. When analyzing MEAP scores, data must be analyzed separately by grade in school. This greatly reduces the sample size for each

analysis, making it impossible to conduct more fine-grained analyses. As such, this interim report only focused on the first three research questions outlined previously.

Methods

The contact person for each Michigan Learn and Serve grant assisted in the recruitment of classrooms for the study. Because the project involved the collection of MEAP test scores, contact people were asked to concentrate on recruiting teachers from grades in which the MEAP was administered. A total of 70 teachers participated in the study. These teachers involved 1988 students in the study.

In April and May 2002, teachers who volunteered to participate in the study were sent a set of surveys to administer to their students. There were two versions of the surveys, one for older students (Grades 7-12) and one for younger students (Grades 3-6). Student surveys were primarily aimed at collecting information about student engagement in school. Information from student surveys was used to create nine student engagement scales for older students (academic engagement, math engagement, English engagement, social studies engagement, science engagement, behavioral engagement, affective engagement, cognitive engagement, and valuing school) and three student engagement scales for younger students (behavioral engagement, affective engagement, and cognitive engagement).

Teachers in the service-learning group were also sent a survey that collected detailed information about the nature of their service-learning activities. Information from teacher surveys was used to construct 15 program quality variables: an overall quality variable, 11 variables corresponding to the 11 Essential Elements of Service-Learning, the duration of service-learning, whether or not service-learning was linked to the Michigan Curriculum Frameworks, and whether service-learning was required or voluntary.

In the late summer and fall of 2002, MEAP scores were collected for students who completed surveys in the previous spring. Overall MEAP scores for the different subject areas were collected, as well as the scores for the individual strands within each subject area. MEAP scores were received for 79 percent of the classrooms in time for this report.

Results and Conclusions

Association Between Participation in Service-Learning and Student Engagement in School

To address the first research question, analyses were conducted separately for older (Grades 7 and higher) and younger (Grades 6 and lower) students. This was necessary because the surveys for these two groups of students were different. Students who participated in service-learning were compared to students in the comparison group on a variety of student engagement outcome measures.

For older students, significant differences between service-learning and comparison groups were found for two of the nine student engagement variables. Service-learning students had significantly higher scores on English engagement than their counterparts in the comparison

group. Results for behavioral engagement were in the opposite direction, with the comparison group reporting greater levels of behavioral engagement than the service-learning group.

For younger students, significant group differences were found for one of the three student engagement variables. Service-learning students reported being more cognitively engaged in school than their counterparts in the comparison group.

Taken together, these findings provide limited evidence for an association between participation in service-learning and student engagement.

Program Quality as a Moderator of the Relationship between Participation in Service-Learning and Student Engagement

Fifteen program quality variables were examined in relation to the student engagement outcome variables to address the second research question, "Do aspects of program quality moderate the association between participation in service-learning and student engagement in school? Which program characteristics are most important for predicting student engagement in school?" The 15 program quality variables included an overall quality measure, the 11 Essential Element measures, the duration of service-learning, whether or not service-learning was linked to the Michigan Curriculum Frameworks, and whether service-learning was required or voluntary.

Six of the 15 quality variables rarely or never moderated the association between participation in service-learning and the 11 student engagement outcomes that were examined (eight for older students and three for younger students). These variables were: Essential Element #2 (involved in challenging tasks), Essential Element #3 (use of assessment), Essential Element #4 (meaningful service tasks), Essential Element #7 (valuing diversity), Essential Element #10 (use of reflection), and duration of service-learning.

Three of the quality variables emerged as moderators more than once, but with the direction of the effect being opposite of what was expected. That is, for overall quality, Essential Element #1 (clear educational goals), and Essential Element #5 (use of evaluation), students who were exposed to lower quality service-learning seemed to have better outcomes in terms of engagement in school.

For two of the quality variables, there was evidence of moderation in the expected direction. These variables were Essential Element #8 (communication and interaction with the community) and whether or not service-learning was linked to the Michigan Curriculum Frameworks.

Finally, for three of the quality variables, the results were mixed. These variables were: Essential Element #6 (youth voice), Essential Element #9 (preparation for service work), and whether service-learning was required or voluntary.

In sum, quality of service-learning did seem to moderate the relationship between participation in service-learning and student engagement in school. However, some qualities of service-learning were more important than others and evidence was mixed for some qualities of service-learning.

Association Between Participation in Service-Learning and MEAP Scores

Analyses were conducted to test for group difference in MEAP test scores for Grades 5, 7, and 8. The only significant findings were for the Grade 5 MEAP scores. Fifth grade students who participated in service-learning outperformed comparison students on the writing MEAP, the total social studies MEAP, and three of the social studies strand scores. Service-learning students in Grades 7 and 8 did not differ from their counterparts in the comparison group on any of the MEAP scores.

Directions for Future Research

RMC Research will continue to collect data during the 2002-2003 school year. Data collected during this second year will be combined with the data described in this report, effectively doubling the sample size. The increased sample size will enable RMC Research to answer more sophisticated questions about service-learning than have been addressed in this report.

The increased sample size will enable RMC Research to examine the association between participation in service-learning and student engagement in more detail. In particular, the increased sample size will permit the analysis of whether students are more engaged in each subject area when the service-learning project in which they participated was associated with that area. It may be the case that students are only more engaged in math, for example, when their service-learning project is associated with math.

Information about the subject area with which service-learning was associated will also be used to examine the moderators of the relationship between participation in service-learning and student engagement. The subject area with which service-learning was associated can be added as an additional predictor in the models testing for the effects of service-learning quality, to attempt to uncover the conditions under which participation in service-learning has the greatest impact on student engagement.

Finally, the research questions that were not addressed in this report will be addressed when Year Two data are available. These questions include the second part of Research Question #3, which concerns whether the association between participation in service-learning and MEAP scores is specific to the area addressed by the service-learning project; Research Question #4, which concerns whether the association between participation in service-learning and MEAP is mediated by student engagement; and Research Question #5, which is focused on the role of aspects of program quality as moderators of the relationship between participation in service-learning and MEAP.