MERIT® software

In-depth Interactive Learning Tools
— Because You Want Results

24 Week Evaluation of Merit Reading/Language Arts Software at Calhoun Middle School

OVERVIEW AND SUMMARY

The following is a summary of a research study performed at a middle school during the 2006-2007 school year. The study examined an extensive use of Merit reading and language arts software to supplement regular instruction.

RESEARCH STUDY GENESIS

Beginning in 2003, Merit Software, a leading provider of educational software, commissioned consultants at the Marshall University Graduate College in South Charleston, West Virginia to conduct several research studies on the impact of its educational software in West Virginia schools.

The first four studies examined the impact of Merit reading, writing and math software on students in grades 3 through 8. These studies had some shortcomings including the lack of random assignment of pupils and a short time frame of implementation. The longest evaluation lasted 9 weeks, less than a typical school year semester.

The researchers, however, were able to make valuable observations about Merit. The studies clearly showed that using Merit improved student achievement and raised standardized test scores. In addition, these studies indicated that a more lengthy use of the software might show statistically significant gains for lower quartile students.

Helping lower level students raise their test scores to mastery levels is a subject of great interest to U.S. policy makers. The Department of Education aggregates ranges of test scores into performance levels when examining schools' annual academic progress.

The purpose of the present study was to document results obtained with a more rigorous design. This study offered the opportunity for an analysis with random assignment of students and pairings based on previous levels of achievement. It also provided the opportunity for researchers to evaluate the use of Merit for an extended time period.

RESEARCH DESIGN

The design is a two-group, quasi-experimental, post-test-only design, with random assignment to control and treatment groupings. Student groupings were fairly equivalent with regard to previous achievement levels. This study was the second Merit evaluation conducted at Calhoun Middle School. Teachers who had control groups in the previous study were assigned to the treatment groups in the current study, and vice versa.

SCHOOL CONTEXT

Calhoun Middle School is part of a combined middle/high school, with a combined student population of 704 students. The student-teacher ratio is 15.7 to 1. Calhoun Middle School is located in the rural community of Mount Zion in Calhoun County. Median household income in 1999 dollars was $21,578, with 19.1 percent of the families below the poverty level. The student body is more than 99 percent Caucasian, and nearly 65 percent participate in the free/reduced lunch program (SES).

SUBJECTS/PARTICIPANTS

Subjects were all 151 middle school students in grades 6 and 7 with four language arts teachers participating. Of these subjects, 99 percent were Caucasian, and 102 participated in the free/reduced lunch program. Thirteen received special education services, and overall gender distribution was 70 for males and 81 for females.

Prior to the beginning of the school year, subjects were randomly assigned to either Merit (the experimental condition) or to a control group. Forty-four 6th graders and twenty-two 7th graders were assigned to the Merit group. The control group had forty-two 6th graders and forty-three 7th graders. In all, 151 subjects participated; however, there was one case of missing test data, for a 6th grader in the control group.

STUDENT ACHIEVEMENT MEASURES

Data from the WESTEST was used to analyze the impact of Merit in this study. The WESTEST is a year-end assessment given to students in West Virginia in four content areas: Reading/Language Arts, Mathematics, Science and Social Studies. Each question on the WESTEST is aligned to the state's curriculum content standards. Student performance throughout the state is compared to academic standards.

Scores are reported as scaled scores, and the score ranges are aligned with a statewide "cut score rubric," which is used to place student performance in one of five performance levels: "Novice, Partial Mastery, Mastery, Above Mastery and Distinguished." The ranges for scaled scores vary widely. The range for Reading/Language Arts at the 6th grade is from 505 to 810 and, for the 7th grade, from 515 to 820.

Further, scaled scores are reported on a "vertical scale," and the range naturally increases as grade levels progress. *Consequently, quantitative comparisons between grade levels are not appropriate; i.e., the scaled scores for 7th graders will naturally have a greater, overall range (and mean) of values than will those of the 6th.* Standard deviation values for scaled scores are likewise large, with, for example, a statewide average of between 35 and 40 for Reading/Language Arts at the 6th and 7th grade levels.

PROGRAM DESCRIPTION

Subjects in the Merit condition received, in addition to their regular in-class block instruction, supplemental content instruction in Reading/Language Arts via Merit for two, 45-minute periods each week for 24 weeks. They accessed the software in a computer lab outside their regular classroom, and only these subjects had access to the program.

Control students participated only in regular in-class instruction and received a variety of supplemental software activities such as McGraw Hill's Writing Roadmap and Compass Learning's Odyssey curriculum.

Use of Merit began in October 2006 and concluded in April 2007. Treatment students began the year by using Merit reading, vocabulary and grammar software. Afterwards, students used Merit's Punch process writing tutorials.

With Merit reading, grammar and vocabulary software, pre-tests place students at a suitable entry point and they advance at their own pace. Further, at every stage, immediate, relevant and individualized feedback is provided that shapes further learning responses. Finally, instruction is focused at the sentence and paragraph level, fostering close analysis and discrimination among response options.

The software permits struggling students to go back to the point of difficulty that may have originated long before middle school and sort out confusions in grammar, syntax, vocabulary, and larger comprehension issues of inference and synthesis.

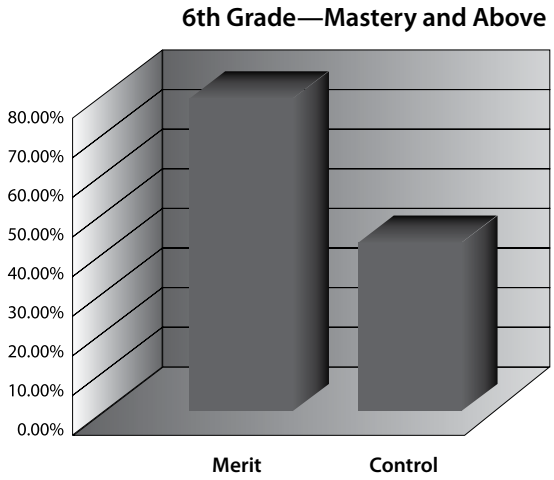
QUESTIONS USED TO GUIDE THE STUDY

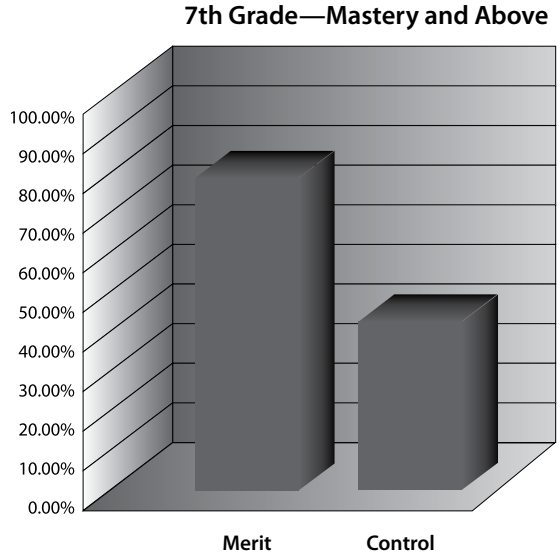
For this most recent study, researchers considered the following:

- What are the effects on reading and language arts standardized achievement test scores for 6th and 7th graders who are given regular in-class instruction and Merit supplemental computer-based instruction extensively and consistently over a 24-week school period?
- Will differences occur in the proportion of treatment and control group students who place in the levels of a performance rubric that is keyed to WESTEST scaled score ranges?

RESULTS OF THE STUDY

- Using Merit reading and language arts software as a supplement to in-class instruction produced significant educational gains for treatment group students.
- Year-end test scores for Reading/Language Arts averaged 30 points higher than test scores for students in the control group.
- An effect size of .94 was calculated for 6th graders' test scores, and .70 for 7th graders.
- Test scores were also significantly higher, by 18 to 22 points, for Merit students who participated in SES and Merit female students.
- 37 percent more Merit 6th graders and 19 percent more Merit 7th graders achieved Mastery level, or higher, on the state's performance rubric.





SUMMATION

The data shows that using Merit reading and language arts software over a substantial portion of the school year in conjunction with in-class instruction yields statistically significant and positive results.

Policy makers should take note of the evidence showing the large percentage of students who reached mastery levels of academic performance. To help failing schools, school boards often begin large reform efforts and spend substantial amounts of money for the sake of change. These results offer challenged schools another option.

ABOUT MERIT SOFTWARE

Located in New York, Merit Software (www.meritsoftware.com) is a leading publisher of educational software. Since 1983, Merit Software has put an emphasis on providing the core competencies for students in grades 3-12 and up. Merit Software is a favorite of educators, students and parents nationwide, and is currently being used in thousands of educational facilities. Designed with an emphasis on ease of use plus maximum instructional content, Merit Software offers a comprehensive suite of products targeted for educational excellence.