



**Review of:
Closing the Gap: A Case
Study of School Reforms**

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Appalachia Educational Laboratory (AEL)
at

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Review of:

Closing the Gap: A Case Study of School Reforms

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Abstract

The study reports the retrospective data analysis of a Southeastern high school's efforts to improve the achievement of all students, with an emphasis on closing the minority/nonminority achievement gap. The school, which had roughly equal numbers of African American, Native American, and Caucasian students enrolled over the past five years, engaged in a series of initiatives to increase academic performance by implementing new academic software, a schoolwide focus on achievement, and enhanced enforcement of discipline. The key questions under investigation were (1) whether the students of the ethnic minorities improved academically over time and (2) whether the minority/nonminority achievement gap was closing over time. By retrospectively examining the percentage of students passing End-of-Course tests over a five-year period, the researchers found that the percentage of minority students passing increased over 20% in the five-year period. In addition, the researcher report evidence that the gap in the passing percentage between minority and Caucasian students decreased over the same time period.

Reviewer Comments

Relevance

Does the evidence provided by the researchers or the developers address a question that is relevant?

The study addresses a relevant educational question regarding the improvement of minority student achievement and the reduction of the achievement gap between nonminority and minority students. The intent of the study was to examine student achievement data following what the school describes as the systematic implementation of a series of educational initiatives (including educational software produced by the American Education Corporation) focused on improving student learning. Specifically, the researches were analyzing the data to determine if there was evidence that (1) the

minority students improved academically over time and (2) the minority/nonminority achievement gap was closing over time.

Do the developers provide evidence that the research they claim supports their product or program links to and flows from relevant theory and theory-based research?

A specific theoretical base is not referenced or established in the research report.

Do the research procedures, analysis, and findings support the researcher'/developers' claims?

The data analyzed does not lend itself to the isolation and attribution of student learning outcomes to particular innovations that were implemented. The chi-squared data analysis was applicable to the retrospective study of the generalized effects of the initiatives implemented using publicly available pass rates for the state-developed and state-administered Algebra End-of-Course test.

Rigor

If the researchers or developers claim a causal relationship between the intervention (product, service, program) and an outcome measure such as student achievement, did they include a control or comparison group in the study, in addition to the experimental group?

The study was not based on the collection of original data; an experimental or quasi-experimental design was not used. There was no untreated comparison or control group against which to compare the progress of the students. Rather, retrospective data analysis procedures were used to “mine” existing data to determine if there was any evidence of improved student achievement following what the school describes as a systematic implementation of a variety of initiatives designed to improve student achievement and reduce the achievement gap between nonminority and minority students.

Were the study participants (usually students or teachers or schools) randomly selected and/or randomly assigned to experimental versus control/comparison groups?

The students were not randomly selected and/or assigned to the experimental conditions. Rather, the participants were students who were enrolled in successive years and experienced the student achievement improvement initiatives as they were implemented by the school staff. The researchers did not report that a comparison or control group was identified and used in the data analysis.

Is sufficient information provided to determine whether the research design, instruments, and procedures are appropriate for answering the research questions posed by the researchers/developers?

The numbers of students passing/failing the state's Algebra End-of-Course test were provided for each group of students for each year from 2000-01 through 2004-05. In addition, the data are publicly available; pass/fail rates on the state's Algebra End-of-Course test are available at <http://www.ncpublicschools.org/>.

Were the research instruments and procedures applied with consistency, accuracy, and for the purpose intended by the developers of the instruments and procedures?

The researchers assumed that the administration of the end-of-course assessments were correctly conducted by school officials using the state-mandated test administration procedures. The processing and scoring of the assessments was conducted by the state and/or its designee, and the researchers had to assume that these procedures were appropriately implemented and completed.

Systematic Approach

Was the research conducted using carefully planned, logical steps?

Yes, the steps in collecting and analyzing the data are simple, straightforward, and logical. Once the data were retrieved from the state Web site, the frequency data were organized for analysis using normal chi-square testing procedures with appropriate accommodations for interpreting the significance of the outcomes.

Objectivity

Did someone other than the publisher or developer conduct the research attesting to the products or programs effectiveness?

The two researchers are associated with the publisher of the educational software that was one of the systemic student achievement improvement initiatives implemented by the school. Under such circumstance, others might question the objectivity of the researchers. Therefore, an independent, third-party review of the research report was requested by the researchers.

Replicability

With the information provided, could the same researchers likely repeat the study and obtain the same or highly similar results?

There is sufficient information provided that the researchers could conduct a replication of the study PROVIDED that a comparable school site could be identified AND that a similar Algebra End-of-Course test was used to assess student achievement.

With the information provided, could other researchers likely replicate the study's methodology and obtain the same or highly similar results?

There is sufficient information provided that other researchers could complete a replication of the study both in terms of obtaining the necessary data and conducting the analyses.

Data Analyses and Interpretation

Does the research evidence provided include data or data summaries?

The researchers provide a summary of the number of minority and nonminority students passing the Algebra End-of-Course Test for each of the past five years. Various graphic representations of the data are provided.

Are significance levels and effect sizes reported?

Using a Bonferroni correction to control for Type I error rate, appropriately modified levels of significance are provided for the various chi-squares reported, and effect sizes have been computed and stated.

Are the conclusions drawn by the researchers/developers clearly supported by the data?

The conclusions offered by the researchers are appropriate within the limitations of the study. The researchers appropriately note that “a fully-randomized efficacy study is needed.”

Such a study, complete with appropriate randomization, control groups, assessment of fidelity of implementation of the intervention strategies, etc., is needed to replicate and extend the findings reported. A more rigorous study using experimental methodology could identify the contributions made by various components of the systematic initiative to student achievement.