

IMPROVING INSTRUCTION

Train to get the most out of data from standardized tests

BY CARLA THOMAS McCLURE

A descriptive study from the University of Northern Iowa demonstrates that various approaches to analyzing standardized test data yield insights that can lead to improved learning. To maximize the potential benefits of such analysis, however, teachers may need help gaining basic hands-on data analysis skills not commonly taught in university-based research courses.

Why examine the use of standardized achievement data to improve instruction?

Researcher John E. Henning points out that 50 years ago “standardized achievement test scores were primarily used for (a) informing teachers and parents about students’ achievement relative to their peers, (b) helping place students in appropriate programs, and (c) justifying the allocation of supplemental resources.” The developers of standardized tests did not originally intend that test results would be analyzed for the purpose of informing curriculum and instruction. In fact, James Popham, a former president of the American Educational Research Association, argues that “classroom assessments are the best source of data for informing instruction.”

In practice, however, analysis of standardized test data has increased in recent years as schools have come under increasing pressure to improve student achievement. Upon reviewing the literature, Henning identified three school-based approaches to data analysis: (1) analysis of trends to see how an intervention has influenced achievement over time; (2) disaggregation of data to separate and compare student data by ethnici-



ty, gender, socioeconomic status, or performance; and (3) examination of the relationship between test scores and other indicators of student performance, such as grades or attendance. Henning’s study documented the efforts of 24 educators to use standardized test data to improve learning.

How was the University of Northern Iowa study done?

Henning examined data analysis reports written by 24 veteran elementary and middle school teachers participating in a graduate program for teacher leaders. The teacher leaders had worked in teams, by building, to analyze Iowa Test of Basic Skills scores. The teams examined building-wide scores, compared student subgroups, and analyzed a particular subject area. For each analysis, the team wrote a brief report that described the data source, purpose for ana-

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lyzing the data, procedures used, recommendations, and questions for further research. Each team was also required to include visual displays of their data. Henning examined the 24 reports and categorized them by type.

What were the findings of the study?

Henning observed that six of the 24 reports included data from a single school year; the others used two to four years of data. “The limited number of years in these trend lines may indicate that student achievement data is not yet accessible enough for teachers, an explanation informally confirmed by the teacher leaders,” he writes.

Henning also found that “the insights provided by school achievement data are often revealed through visual display of data” and noted that a basic understanding of statistical concepts was essential to teachers’ drawing conclusions consistent with the data.

His findings indicate that “school data can

be analyzed in a wide variety of ways,” although he notes that several possible approaches were not seen in his study.

What are the implications for district leaders?

Schools that are attempting to use standardized test data to improve learning can improve the likelihood of making principled data-based decisions by (1) improving the storage and organization of school data, (2) providing professional development in the application of statistical concepts and the use of visual displays to understand data, and (3) enriching the culture for school data analysis through the sharing of professional literature.

Reference

Henning, J.E. (2006, Summer). Teacher leaders at work: Analyzing standardized achievement data to improve instruction. *Education*, 126(4), 729-737. ♦

Professional development in statistical concepts is key to using standardized test data to improve learning.

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