

Local firm crunches WASL numbers

Searches for best education practices to use as benchmark

By Pete M. Fretwell for TCAJoB

A former Bonneville Power Administration engineer and a former British mining company mathematician have developed scientific data they believe could make Washington schools better. But so far, they haven't been able to give it away.

Jim Lewis and Jay Maidment of J. Lewis and Associates in Richland have done scientific benchmarking for public utilities and transit systems since the company was founded in 1998. Now, they have applied their expertise in scientific benchmarking to the Washington Assessment of Student Learning (WASL) test.

The pair believe their research has identified schools which outperform what they should be expected to do, given their unique circumstances. To date, education leaders have shown little interest in using the data to find out why the schools surpass expectations.

"We've told them, 'At no cost, I'll tell you the best 10 percent and worst 10 percent, if you will go out and find out why they are the best'," Lewis said.

Instead of simply comparing test results from a private high school in an affluent suburb to a public high school in the inner city, scientific benchmarking uses complex mathematical formulas to analyze how well each school should be able to perform, given its student, parent and school district characteristics.

"You've got a Corvette and I've got a Geo Metro," Lewis explained. "You're getting 20 miles to the gallon, and I'm getting 35 miles to the gallon. On the surface, you'd say I am getting better performance than you."

Scientific benchmarking would look at the different characteristics of the two cars, using sophisticated mathematics to find the relationship between the physical characteristics of the cars and their cost and performance.

If the benchmarking showed that the Geo Metro ought to be getting 45 miles to the gallon and the Corvette should only be getting 12, it suddenly becomes clear.

"You're doing fantastic getting 20 miles to the gallon, and I am doing terrible getting 35 miles to the gallon with my Metro," Lewis said.

In education, identifying the "better than expected" districts can lead to educational excellence, Lewis said.

Scientific benchmarking methodically compares how effectively schools juggle factors known to affect education outcomes— such as a teacher’s education, a family’s socio-economic status and school district funding.

“Fantastic advances are possible at no cost,” Lewis said. “It’s not money, it’s best practices.”

After nearly three man-years of studying WASL data from 1,000 schools, Lewis and Maidment have identified Washington schools that surpassed their expected performance. Their research has pinpointed eight factors that drive WASL performance.

The “driver” they found to be most important was the socio-economic background of the student’s home. Districts with the highest percentage of students receiving free and reduced-price meals— an indicator of the amount of poverty in a school—had the lowest WASL scores.

When a school with a high rate of poverty outperforms the benchmark for schools of its socio-economic and other characteristics, it is doing something right that needs further study.

Other drivers identified by Lewis and Maidment included teacher education level, teacher experience, number of grades in the school, a student’s gender, the ethnic mix of the school, school district funding and student-teacher ratio.

“In 2005, Kamiakin High School was the absolute most effective high school in the entire state,” Lewis said. “It was 18 points higher than its benchmark for reading, writing, math and science.”

Taking into consideration the student and school characteristics, Kamiakin did a better job of preparing students for the WASL than any other school in the state, Lewis said.

The two researchers want state education officials to study schools like Kamiakin to find out why they outperform expectations. So far, the Superintendent of Public Instruction’s office has given them “the cold shoulder,” Lewis said.

The two researchers are willing to give the information to state officials at no cost if the state would agree to work on identifying best practices.

“We have penicillin here, but nobody’s willing to take it,” Lewis said. “I am actually kind of disappointed that nobody cares enough to even steal it.”

Meanwhile, the firm has arranged for Battelle to assess the accuracy of their mathematical models.

“We will totally open this up to anybody’s review,” Lewis said.

“The fastest, cheapest way to get significant improvement is to go to schools like Kamiakin and determine what those best practices are,” Lewis said. “Then, share them with the rest of the schools around the state.”

Lewis says math scores in Moses Lake’s elementary schools are 30 points higher than benchmark.

“They are doing something absolutely phenomenal with math education in the Moses Lake school district,” Lewis said. “Our benchmarking says, ‘Go look in Moses Lake for those best practices’.”

Benchmarking has produced huge efficiency gains in industry, Lewis noted. For the first 15 years of operation, the Energy Northwest nuclear plant at Hanford was online about 65 percent of the time and had a staff of more than 2,000 employees. For the past five years, following best practices, it has been online more than 90 percent of the time with about 1,000 employees.

“I believe that’s what’s possible in education,” Lewis said.