Week of Feb. 14-18, 2011

Data Games: Win Some, Lose Some

By UCLA IDEA

This week, IBM's supercomputer "Watson" won the "man vs. machine" edition of trivia game show Jeopardy! by beating two of the show's all-time human winners. Unfortunately, Watson's winnings won't make up for cancellation of IBM's hefty contract with the California Department of Education if the company doesn't meet deadlines to fix the state's data system. Maybe that's not so important to IBM, but it's not a trivial matter for California students.

We'll admit to being excited—even thrilled—by Watson's sheer computing power. However, that impressive display makes it even more frustrating to witness California's failure to get a fully functional education data system from its provider, IBM. That system should be able to answer fairly straightforward questions, such as:

- How many students who enter elementary school with limited English skills are still designated as English Language Learners when they arrive in middle school?
- Do 8th-grade students enrolled in Algebra 1 perform better, on average, if their teacher has a credential in math?
- Which California high schools graduate the highest proportion of young women who move on to major in computer science in California public universities?

The system should be able to follow students from kindergarten through high school graduation and beyond. It can't.

IBM has been beset with delays and technical complications in its contract with the state to create the California Longitudinal Pupil Achievement Data System, or CALPADS. The delays led Gov. Schwarzenegger last year to eliminate $6.8 million earmarked for the project. Of course, we don't know IBM's side. California's policy environment and historic disinterest in gathering good data might well contribute to delays. But, as we are fond of telling students, "No excuses."

A report out this week on states' capacity to collect data reveals that California compares poorly to other states. The Data Quality Campaign's sixth annual report reveals that half of the states are collecting the full 10 "essential elements" of data tracking. California was missing the ability to match student K-12 records with higher education.

Getting basic data is only an early step in a much longer process. Once CALPADS is in place, there are some difficult learning and political challenges. "States were looking at these 10 elements as a checklist and saying, 'OK, we can collect these 10 things; we're done," said Aimee Guidera, executive director of Data Quality Campaign. "We're saying, 'No, you're just beginning to be able to tap in and leverage the investments you've made.' "

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Tapping into the full potential of data systems will require California to move beyond a narrow focus on outcomes data. Improving educational practice demands that we know more about the opportunities present in different schools and neighborhoods that lead to desired outcomes. That additional data must come from new sources, including students and educators, about the conditions that shape teaching and learning in their classrooms.

Even when IBM overcomes its technical difficulties for California, our data system will still be no Watson. Yet, just this one prototype machine has a lot to teach our practical-minded policymakers and communities. "The significance of Watson goes beyond public perception... Watson isn't a single computer program, but a very large number of programs running simultaneously on different computers that communicate with each other."

Watson, in other words, isn't confined to preset programming of, for example, 10 conditions for this or that solution. To answer its questions, Watson seeks and communicates with new sources, penetrates the nuances of written and spoken language, and uses its power to arrive at trustworthy, best-bet answers.

Ultimately, the value of any super machine lies in whether humans can use it as a tool for problem solving and not confuse our basic tools with the solutions we seek. As IBM engineers complete California's longitudinal data system, California educators and community members need professional development and public engagement to access and reach beyond the technology and arrive at human decisions.

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