

TESTIMONY IN SUPPORT OF HB2326

By
Dr. Walt Chappell

As a former science teacher and member of the Kansas State Board of Education, I have seen firsthand and read research which documents the major shortage of STEM teachers in Kansas schools. Currently, there are over 1,000 science and math teachers in Kansas classrooms who are not certified to teach these important subjects.

The current salary scale for teachers in most school districts is based on the number of years teaching plus the additional number of college credits earned. There is no flexibility. The contract and salary is locked in for all teachers in the district.

This "one-size-fits-all" in the current statutes does not recognize the professional qualifications of individual teachers. HB2326 will allow school districts the flexibility they need to hire the best qualified teachers to fill high demand STEM and Special Education positions.

Schools in rural and low-income urban areas of our state particularly need this bill passed. Their hands are tied by current contracts which do not allow them to recruit and pay STEM teachers a competitive salary as compared to what they can earn in the private sector.

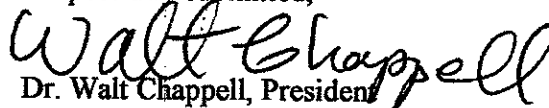
When I meet with local school board members, this lack of hiring and salary flexibility is one of their greatest concerns. Passing HB2326 this session, will help bring qualified STEM and Special Education teachers back into Kansas classrooms and pay them a competitive salary.

The Hutchinson News published the attached article about "a recent report conducted by Steven Case and Steven Obenhaus, director and master teacher, respectively, at the University of Kansas' Center for Science Education, put numbers to the math and science teacher population in Kansas.

The report looked at the state's 2,691 math teachers and 2,435 science teachers. The researchers estimated that while 12 percent to 13 percent of Kansas' math and science teachers are currently eligible to retire, in five years the percentage will increase to up to 24 percent; in 15 years it increases to nearly 60 percent."

Many STEM teachers are unwilling to stay in the teaching profession and are retiring early. They are tired of the micromanagement and unrealistic, bureaucratic demands of the Common Core takeover of their classrooms. So, passing HB2326 will also give local districts more flexibility to offer individual contracts to allow their STEM teachers to get back to teaching the whole curriculum while paying them a competitive salary.

Respectfully submitted,



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Dividing the ranks

Study: Retirements to slash already struggling school fields

By Edie Ross - The Hutchinson News - eross@hutchnews.com - January 12, 2012

Last June, the Kinsley-Offerle School District accepted the resignation of one of the three math/science combination teachers that serve the district.

Superintendent Bob Davies knew finding a replacement was "almost impossible" given that the resignation came after June 1. It is hard enough, he said, to find replacements for teachers in the math and science fields when he had plenty of notice.

"If you get a resignation in July you spend more time at church praying than you do looking for a replacement because your best bet is having someone fall into your lap," he said.

In this case, Davies' prayers were answered at the last moment.

"We had three applicants, two of which weren't certified," he said. "Luckily, we had one show up at zero hour - it was someone who had been out of education for a while but they were certified and were a good fit."

Davies' experience with replacing retiring or resigning math and science teachers is not unique to his district.

Given the "unprecedented wave" of looming retirements - both of teachers who are just now eligible and of those who were eligible several years ago but delayed retirement because of the recession - the National Commission on Teaching and America's Future says there is no way current teacher recruiting strategies can meet the need the retirements will create.

Additionally, the nation is in the midst of what some describe as a "chronic" shortage of qualified math and science teachers. Research indicates that rural and urban districts have the most difficult time drawing employees from what is already a small pool of applicants.

All together, the data paints a disconcerting picture of the future of K-12 math and science education, especially in places like southwest Kansas.

By the numbers

A recent report conducted by Steven Case and Steven Obenhaus, director and master teacher, respectively, at the University of Kansas' Center for Science Education, put numbers to the math and science teacher population in Kansas.

The report looked at the state's 2,691 math teachers and 2,435 science teachers and analyzed how close they were to reaching the "85 points" needed to retire. In Kansas, when a teacher's age plus his or her years of service equal 85, the teacher is eligible to retire.

Researchers found the median age for math teachers was 42 with just over 13 years of experience, and the median age for science teachers was 43 with just over 14 years of experience.

From there, the researchers estimated that while 12 percent to 13 percent of Kansas' math and science teachers are currently eligible to retire, in five years the percentage will increase to up to 24 percent; in 15 years it increases to nearly 60 percent.

The report also categorized districts as being in "high," "moderate" or "minimal" risk categories for math and science teacher turnover due to retirement.

For example, Hutchinson USD 308 currently is at "minimal" risk of losing science and math teachers to retirement - meaning that less than 20 percent of its math/science instructors are eligible for retirement.

Davies' district, USD 347, has fewer teachers with a higher average age and was classified as having a "moderate" risk of losing science teachers. That means 21 percent to 40 percent of its science teachers are currently eligible for retirement. USD 347 is currently in minimal risk of math teacher retirements.

Statewide, the report found 29 Kansas school districts are at a high risk of retirement for science teachers, and the same is true for math teachers.

Looking to the future, it found that half or more of science teachers in 89 districts and half or more of math teachers in 122 districts will be eligible to retire in 10 years time. Considering the few graduates who have the qualifications and desire to teach math and science and the difficulty western Kansas communities have in attracting those candidates, these retirements are disconcerting, Obenhaus said.

"A lot of our colleagues are nearing the end of their teaching careers and who will take their place is the big question," he said.

Broader implications

The implications of shortages among math and science teachers reach far beyond the classroom and into the Kansas - and American - economy.

"Kansas, in order to remain competitive not just in the Midwest and nationally, but also internationally, needs to have a highly qualified workforce," Obenhaus said. "Especially one that is skilled in the science, technology, engineering and mathematics areas, which we commonly call STEM. We're not going to get a highly-qualified STEM workforce unless we have highly-qualified STEM teachers."

Research conducted in 2006 indicated that, even then, the U.S. was lagging other nations in preparation for important STEM fields.

In 2006, the National Science Foundation released a paper titled "America's Pressing Challenge," which addressed the state of U.S. pre-college education in math, science and technology.

At that time the NSF reported that, on international assessments measuring how well 15-year-olds applied math and science knowledge, U.S. students ranked at or near the bottom of the 29 nations participating in the assessment.

Another international assessment showed similar results. On the Trends in International Mathematics and Science Study, American 17-year-olds scored below the international average, the NSF reported.

The pre-college trend was repeated at the collegiate level, which showed a decline in the number of U.S. students completing degrees in natural science and engineering relative to other countries, dropping from third on the rate of baccalaureate attainment in these fields to 14th between 1975 and 1999 among 19 total nations, the NSF reported.

Just as Obenhaus said that Kansas' ability to compete economically depended on a skilled STEM workforce, the NSF concluded that "if the United States is to maintain its economic leadership and compete in the new global economy, the nation must better prepare today's K-12 students..."

Complications

Case's and Obenhaus' research also indicated that schools in rural areas have the most difficulty filling vacant math and science teacher positions. For example, while 27.1 percent of districts in towns - defined as a community located 10 to 35 miles from an urban area - reported having a very difficult to impossible time filling mathematics positions, 32.5 percent of districts in rural areas reported the same.

Similarly, in filling life sciences positions, 23 percent of districts in towns had a very difficult or impossible time filling positions versus 34.2 percent of districts in rural areas.

Davies calls it the "Wal-Mart factor."

"For some, if you don't have one, they won't consider you," he said. "For people looking for jobs, it becomes about the community as well as the school. We can offer golfing and hunting. If you like that, we have it.

"But we don't have a Wal-Mart. The closest one is 35 minutes away."

Keith Higgins, superintendent in the Wichita County School District, which employs six total math and science teachers, agreed. Higgins added that his best bet is to find a western Kansas resident who went away to school and has come back.

"We replaced one math teacher last year and I think we had six applications for the positions versus 40 or so for three elementary school positions we had open," he said. "The lady we hired is originally from Dodge City and knew what it was like out here."

Both Davies and Higgins talked about "home growing" their future teaching staff, but there are difficulties with that, too.

"We get kids who do well in these classes in high school and pursue these fields in college, but convincing them to come back and be a teacher is hard," Davies said. "Sometimes you see how their future could be brighter somewhere else, even though this is rewarding."

Further complicating recruiting efforts is the lure of the private sector, which affects all districts.

"We are 70 miles away from Fort Hays State University, so it's our best shot at recruiting new teachers," Davies said. "Two years ago they produced two physics teachers and both were hired by Sprint in Kansas City. That happens all the time."

"We find that they don't make it to education because they can get a \$90,000 job somewhere else. Having your summers off really doesn't look that good when you have the shot of making that kind of money."

Obenhaus and Case say Kansas needs policies at the state level that will encourage college education graduates to go back to rural areas to teach. While pay certainly plays a big part in boosting recruiting efforts, it isn't the only factor. The whole community, Obenhaus said, should try to draw new teachers into town.

Higgins is seeing his community do just that as Wichita County Economic Development Inc. is providing scholarship money to local high-schoolers who make a commitment to return to the area after college.

Obenhaus also suggested that districts offer teachers more professional development opportunities. The National Science Foundation agreed, saying that teachers who have the opportunity to learn about scientific breakthroughs can better teach students.

The NSF also advocated for the use of technology in classroom instruction to help teach students via simulations, specialized laboratories, data collection and analysis projects that are based outside the school and also to give students access to experts or other students.