Commentary

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DISTRICT OVERVIEW

Rolla, Missouri, is a city of 16,367 located in mid-Missouri. The Chamber of Commerce coined the phrase that Rolla is in the middle of everywhere, but it has been argued that it is in the middle of nowhere.

Rolla is the home of the University of Missouri–Rolla, one of the best schools of engineering in the world. The primary and secondary public school district covers 234 square miles and currently serves 4,056 students. Of the 4,056 students, 1,540 or nearly 38 percent qualify for free or reduced lunches. This year, once again, Rolla's public schools achieved the status of "accredited with distinction in performance." Last year 28 graduating students qualified for Bright Flight scholarships, and three students were National Merit Scholarship recipients. The Rolla School District (No. 31) has 330 certificated and 246 support staff employees.

DISTRICT FINANCES

Balances in school district fund 1 (general operating fund) and fund 2 (special revenue fund, better known as the teacher's fund) total 30.91 percent of anticipated expenditures. Although these balances might seem excessive, it will be beneficial to have them as the new formula developed and approved last year in Missouri is implemented. The formula represents the greatest change in school finance since 1993, but it is inherently flawed with respect to both equity and adequacy.

The simulations reported to this district by the state Senate appropriations staff indicate that the increases projected for the Rolla School District will begin at $110,373 in fiscal year (FY) 2007 and increase to $473,831 in FY 2013. This represents an increase of 1 percent in FY 2007. Consider that it takes more than $500,000 annually to service the existing salary schedule—that is, to accommodate increases in the salaries of teachers and staff as they earn advanced degrees and accumulate experience. These increases are built into the salary schedules for the district in much the same way as they are in nearly all school districts in Missouri. Yet, under this formula, the school district is not projected to receive enough new money from the State of Missouri to service the salary schedule, without any consideration of raises in base pay, in any one of the seven years that the new formula will be implemented. Furthermore, this does not take into account any other inflationary increases the district will inevitably incur.

To get an accurate view of how the new formula will affect the Rolla School District in future years, simulations were developed based on the following revenue assumptions:

1. Estimated an annual increase of $5,000,000 for new construction in the district.
2. Used Missouri revenue assumptions provided by the State Senate appropriations staff.
3. Considered federal revenues to be neutral to the budget in total.

The following assumptions were made with respect to expenditures:

1. Allowed movement on the salary schedule representing a 1.6 percent annual increase.

Federal Reserve Bank of St. Louis *Regional Economic Development*, 2006, *2*(1), pp. 70-74.

2. Raised the base salary for FY 2007 by 3 percent, FY 2008 by 2 percent, and FY 2009 by 1 percent. No increases in pay were assumed for the last four years of the comparison.
3. Included a projected annual retirement benefit increase of 1/2 percent for certificated staff and 1/4 percent for classified staff.
4. Estimated that health insurance would increase by 5 percent annually.
5. Added a 3 percent increase for all other items as an estimate of inflation.

With these revenue and expenditure assumptions, the balances will drop from a positive 31.2 percent in FY 2006 to a negative 17.1 percent in FY 2012. Obviously, many changes will have to be made in the budget prior to FY 2012.

EQUITY

For a variety of reasons, the formula does not represent equity. The first reason is parochial in nature, but Rolla doesn't benefit as much as other districts with the new formula. Second, although it is possible that the gap between the "have" districts and the "have not" districts may narrow somewhat, the gap will still be wide enough to constitute inequity. Over the seven-year period, the district currently at the bottom, spending $4,771, will increase per-pupil expenditure to $6,117—plus any adjustments built into the formula. It is assumed that the district currently spending $13,339 per pupil, based almost entirely on current taxes, will increase spending based on increases in assessed value during the same period of time. Even if this does not happen as predicted, the variance between $6,117 and $13,339 would fund a reduction in the pupil/teacher ratio for the districts funded at the $6,117 level, provide better support services, and/or purchase a great deal of technology with which to teach children. Districts that spend more per pupil can provide more opportunity to learn through more time spent with individual students and more teaching resources.

Finally, the dollar value modifier (DVM) is of dubious worth from the outset if the goal is to attain equity; but as implemented, it is ludicrous. In ten minutes of reviewing the simulations, anyone could find numerous examples of injustices that would be humorous if they didn't ultimately affect some children in a negative way. The DVM ranges from a low of 1.0 to a high of 1.103. A DVM of 1 generates no additional revenue, but any number higher than 1 does generate additional revenue. The concept is undoubtedly founded on the premise that it costs more to operate a school in an area with a higher cost of living. Although not all subscribe to that concept, it is easy to understand why the City of St. Louis and St. Louis County would be grouped together and have the highest possible DVM. It is significantly less clear why the school district in Potosi, Missouri, would also qualify for the highest possible DVM and the district in Owensville, Missouri, would have the lowest possible DVM. It also makes very little sense that the Potosi, Missouri, and the Caledonia, Missouri, school districts would receive the highest DVM, whereas the school district in Maries County, Missouri, receives nothing in the formula with respect to DVM. The St. Louis City and the St. Louis County school districts are generally large urban and suburban school districts. By contrast the school districts in Potosi, Caledonia, and Maries County, Missouri, are all small rural school districts.

ADEQUACY

Adequacy is the larger issue and the one with which everyone should be concerned. The national average expenditure per student in 2005 was $8,618, and the Missouri average expenditure per student in 2005 was $7,451 (National Education Association [NEA] Rankings and Estimates Table 5). The expenditure per student in the Rolla School District for the same period of time was $6,740.25 (Department of Elementary and Secondary Education website). Missouri is well behind the national average, and the Rolla School District is well behind the state average.

Education Vital Signs (2006) includes Missouri in the north central group of states, and the expenditure per child for FY 2004 found Missouri last in those eight states, which are Illinois ($10,439), Indiana ($8,734), Iowa ($7,477), Kentucky ($7,719), Michigan ($8,909), Minnesota ($9,239), Missouri

($7,452), Nebraska ($7,617), Ohio ($9,573), and Wisconsin ($9,881).

In 2005, Missouri ranked 38th in expenditures per student (NEA Rankings and Estimates Table 5). In 2003, Missouri ranked 30th in personal income per capita (U.S. Census Bureau, data on personal income per capita); but, in 2004, Missouri ranked 45th in the state's taxes per capita (U.S. Census Bureau, data on states ranked by total taxes). The discrepancy between per capita income and per capita taxation is a primary cause for the relatively low expenditure per pupil in Missouri. The expenditure per pupil in Missouri does not compare favorably with national averages or with the group of north central states even though the per capita income of Missourians indicates the ability to spend more for education.

TIME AS IT RELATES TO ADEQUACY

Although there are many variables that affect performance, it is important to consider the variable of time and understand that time will equate to money. The average number of days attended by students nationally is 180 (Barrett, 1990). Missouri is tied with North Dakota for last place nationally, with a required 174-day school year. Schreens and Bosker ranked time as the number-one school-level factor as it relates to student achievement (Marzano, 2003, p. 17). Marzano found that time was the second most important school-level factor as it relates to student achievement (p. 18). In a speech at the International Leadership Conference in June 2005, Lezotte stated that educators should stop viewing time as a constant with learning optional and start considering time as the variable with learning as the constant. The research in the field is clear that time spent educating children affects levels of performance.

Authors Cooper and Ryan (2004) indicate that the United States is not doing well in international comparisons of academic performance as measured by the Third International Math and Science Study (TIMSS). The performance of U.S. fourth grade students is quite good, but that performance diminishes as the children progress through school. It may be that the cumulative effect of going to school fewer days than our international counterpoints has a negative impact that impedes educational growth over time. The following are some selected quotations (pp. 123-24) on the topic:

1. U.S. students don't start out behind, they fall behind.
2. By the time U.S. students finish high school, they are not equipped to meet the international expectations demanded by a global labor market.
3. Of the 21 nations that participated in the twelfth grade, the United States outperformed only two, Cyprus and South Africa.
4. Even the most advanced students, those taking advanced mathematics and physics, scored at the bottom when compared with their counterparts in other countries.

The TIMSS study tested students in math and science at multiple grade levels. For comparative purposes, the results of the eighth grade math examination are included here—the countries that scored in the top five on the examination, along with the number of days their children attend school.

1. Singapore	255
2. South Korea	220
3. Chinese Taipei	Not available
4. Hong Kong, SAR	195
5. Japan	243

The number of days attended by students in Chinese Taipei was not available, but the remaining four countries average 228.25 days of student attendance annually. Again, the average in the United States is 180 school days and the requirement in Missouri is 174 school days. If time does in fact make a difference in student performance, the cumulative effect of attending school fewer days than our international counterparts would obviously have a negative impact on our ability to compete academically. Given that students in the United States perform well in the fourth grade and not nearly as well in the twelfth grade, it seems likely that the effect of attending school more days gives students in other nations an advantage academically.

The National Education Commission on Time and Learning states that "No matter how the assumptions underlying the figure are modified,

the result is always the same—students abroad are required to work on demanding subject matter at least twice as long as U.S. students" (Marzano, 2003). This raises the following questions:

1. Does time make a difference?
2. Should Missouri make an effort to reach the national average?
3. Do international educational achievement comparisons mean anything in an increasingly globalized economy that is increasingly knowledge based?
4. Should Missouri consider moving to international standards with respect to the issue of time?
5. What will time cost?
6. Is Missouri adequately funding education?
7. Where will our children work?

FUNDING SCHOOLS AND TAXATION

Compared with other states, Missouri is 42nd in state and local taxes as a percentage of personal income (Kessler, Stallmann, and Winter, 2006). If the plan in Missouri is to enhance the economy through low taxes, there is at least a chance for short-term success if Kansas and Illinois are considered to be competitors. If Missouri is really in competition with countries such as China and India, it will take a paradigm adjustment to regain a competitive advantage.

Maybe it is time to reconsider giving students a three-month break every year so that they can tend and harvest the crops. The three-month break in the summer traces back to a need for children to work on farms, but is now more closely aligned to the desire to have cheap labor for the tourism market. Tourism is an important element in the Missouri economy; but if tourism is enhanced by keeping Missouri at the bottom in national comparisons of the length of the school year, the cost may be far greater than the benefits.

Globalization, outsourcing, business closures, the national debt, an increase in personal debt, and the trade deficit are all warning signs. Setting the stage for education at the highest international standards is obviously part of the solution. Increasing the length of the school year could also be part of the solution, but it will not happen without additional funding.

It was too expensive to fix the levies in New Orleans, so we now get to replace the city. If it is too expensive to fix public education in the United States, there will be even larger consequences. This is the richest and the best country in the world. The children, the future of our nation, deserve to have these issues addressed. It is imperative to decide what is important and pay for it.

CONCLUSION

The premise of this paper is to emphasize the need to improve the school system dramatically. The economy cannot be sustained if our children do not compare well academically with those of other countries. The author proposes the following:

1. Look to research for answers.
2. Lengthen the school year significantly.
3. Demand reform designed to meet international standards.
4. Demand that all children, even those who learn quickly, are challenged every day they go to school. Closing the gaps for various subgroups is a worthy goal, but those who learn quickly are ignored at society's peril.
5. Establish a much more focused curriculum with emphasis on skill sets that children will need to successfully participate in the new economy.

None of the suggestions listed above will be inexpensive or painless. This is a prosperous nation, with good schools and many fine traditions. If, as is often quoted, the enemy of great is good, there needs to be motivation to improve education. Other nations that are not constrained with the inability to make needed adjustments are making great strides academically, and it is already apparent when comparing economic growth. Dramatically lengthening the school year in Missouri and the United States is one of the more obvious reforms needed. This would require additional funding and is the foundation of the author's belief that Missouri schools are inadequately funded.

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