

## WHAT CAN \$3,702 BUY? HOW UTAH COMPARES IN EDUCATION SPENDING AND SERVICES

Many Utahns are familiar with the fact that Utah ranks last in per pupil spending. But what do other states buy with their additional per pupil expenditures? How does Utah's lower spending level impact schools and learning?

In "School Testing Results, 2006 & 2007: How Utah Compares to Other States," Utah Foundation compared Utah's performance on standardized tests to five "peer" states (states with similar demographic characteristics with respect to poverty, race, and parent education level). Figure 1 shows the per pupil current expenditures for the 2005-2006 school year for the U.S., Utah, and Utah's five "peer" states.

Figure 2 shows how Utah spending compares to the national average with respect to current expenditures, and the major subcategories for instructional expenditures and support services expenditures. Overall, Utah spends about \$3,700 less per pupil than the national average, spending \$2,100 less per pupil on instruction and about \$1,600 less on support services. The last column of Figure 2 shows what proportion of the overall difference in per pupil spending can be attributed to specific spending categories. Nearly 57% of the difference between Utah per pupil spending and U.S. per pupil spending is a result of differences in instructional expenditures. Support services expenditures account for nearly the rest of the spending gap (about 42%).

### DOES MONEY MATTER?

During the past 35 years, most states besides Utah have significantly increased education funding in response to school finance litigation over equity (equal funding per student) and adequacy (funding of minimum educational outcomes). However, experts do not agree on what constitutes an "adequate" education or how much it costs and per pupil estimates vary greatly.

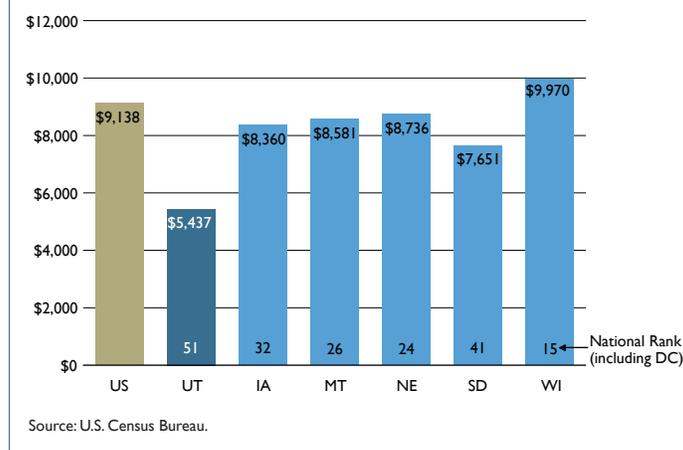
Instead of simply focusing on increasing or equalizing funding for education, some reformers focus on ways that schools could be spending their money more effectively. Researchers with the School Finance Redesign Project state that "there is reason to fear that without changes in the way funds are spent, Americans could end up with a more expensive, but not necessarily more effective or equitable, system of public education." However, all researchers acknowledge that additional funding could make a difference. John Yinger, a professor of Public Administration and Economics at Syracuse University and

director of the Education Finance and Accountability Program, argues that the existing research "shows clearly that. . . holding school district characteristics constant, a higher level of student performance requires higher spending per pupil."

Utah Foundation's report "School Testing Results, 2006 & 2007" found that Utah is scoring well below what would be expected for a state with its demographic profile. Utah Foundation identified significantly lower spending levels as a possible contributing factor. Below, using Census and Department

of Education data, we analyze the differences between Utah, its demographic peers, and the nation for the individual spending categories. We also examine the educational services that fall within these categories, and the potential impact of these services on educational outcomes and experiences.

**Figure 1: Per Pupil Current Expenditures, U.S., Utah, and Peer States, 2005-2006**



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**Figure 2: Per Pupil Current Expenditures, U.S. and Utah, 2005-2006**

	US	Utah	Difference between US and Utah	Percent of Overall Difference
<b>Total</b>	<b>\$9,138</b>	<b>\$5,437</b>	<b>\$3,702</b>	<b>100.0%</b>
<b>Instruction</b>	<b>\$5,543</b>	<b>\$3,443</b>	<b>\$2,100</b>	<b>56.7%</b>
Teacher/ instructional aide compensation	5,019	3,200	1,819	49.2%
Salaries and wages	3,811	2,271	1,540	41.6%
Employee benefits	1,208	929	279	7.5%
<b>Support services</b>	<b>\$3,225</b>	<b>\$1,655</b>	<b>\$1,570</b>	<b>42.4%</b>
Pupil support	482	190	292	7.9%
Staff support	448	253	195	5.3%
General administration	174	61	113	3.1%
School administration	507	329	178	4.8%
Operation and maintenance of plant	902	516	386	10.4%
Pupil transportation	399	190	209	5.7%
Other and nonspecified support services	312	116	196	5.3%

Source: Census.

## INSTRUCTION

Utah spends about \$3,400 per pupil on instructional expenditures, which is between about \$1,100 and \$2,600 less than the five states that represent Utah’s demographic peers.

### Teacher/Instructional Aide Compensation

Utah spends \$1,819 less per pupil than the U.S. on compensation for instructional employees. Compensation for instructional employees accounts for nearly half of the entire U.S.-Utah spending gap. Utah’s per pupil expenditures on compensation are much lower than the national average because Utah has comparatively larger class sizes (or a higher pupil/teacher ratio) and because Utah has comparatively lower salary levels.

Utah has the highest number of students per teacher in the nation. Utah’s pupil/teacher ratio is 22.1 while the national ratio is 15.7. Utah’s five peer states all have a pupil/teacher ratio below the national average, ranging from 13.4 to 14.6. Utah’s elementary pupil/teacher ratio is 31.2, more than double the elementary ratio of the five peer states. At the kindergarten level, Utah’s pupil/teacher ratio is 41.5, more than double the national ratio of 17.3.

Utah would need to hire an additional 9,481 teachers in order to bring its pupil/teacher ratio down to the national average. Based on Utah’s median overall compensation for a teacher in 2005-2006, this would cost \$1,043 more per pupil and accounts for 28% of the overall U.S.-Utah spending gap. In order to increase teacher salary to the U.S. average for all 32,474 teachers, Utah would need to spend an additional \$677 more per pupil. However, since Utah teachers are less experienced and have fewer course credits than U.S. teachers, Utah could provide teacher pay scales similar to the average national pay scale without paying this full difference.

There is some consensus that class size reduction in the early grades leads to higher student achievement and that the effects are larger for disadvantaged and minority students.<sup>1</sup> One major drawback to reducing class sizes is that it is very expensive, requiring significant increases in instructional and capital expenditures

Higher teacher compensation has been associated with lower teacher attrition rates and could entice more people into the teaching profession. Educational researchers generally favor alternative salary schedules that incorporate student achievement or demonstrable teaching skills into the determination of salary, and allow different salary levels based on teacher shortages for specific subjects or in schools with disadvantaged student populations.<sup>2</sup>

## SUPPORT SERVICES

Support services include student services, staff services, administration, operation and maintenance as well as transportation. Utah spends \$1,655 per pupil or about half of the U.S. average on support services per pupil. Utah’s peer states spend roughly \$1,000 to \$2,000 more per pupil than Utah does.

### Pupil Support

The category of pupil support includes a variety of health services, as well as social work, counseling and student accounting. The U.S. on average spends \$482 per pupil for these services, while Utah spends \$190 per pupil. This represents about 8% of the total difference in current expenditures between the U.S. and Utah. This spending gap is reflected in the number of staff employed to perform these pupil support services. For example, Utah has much higher student-to-staff ratios for both counselors and nurses. At the elementary level, Utah has over 3,000 students per guidance counselor, or over four times the national average of 778. Researchers have found that school counselors can positively impact student achievement.<sup>3</sup> According to the National Association of School Nurses, for 2006-2007, Utah had 5,539 students per school nurse compared to between 963 and 1,589 students per school nurse in Utah’s five peer states, and approximately 1,200 students per school nurse nationally. When schools lack qualified nurses, more medical errors occur, potentially endangering student health.<sup>4</sup>

### Staff Support

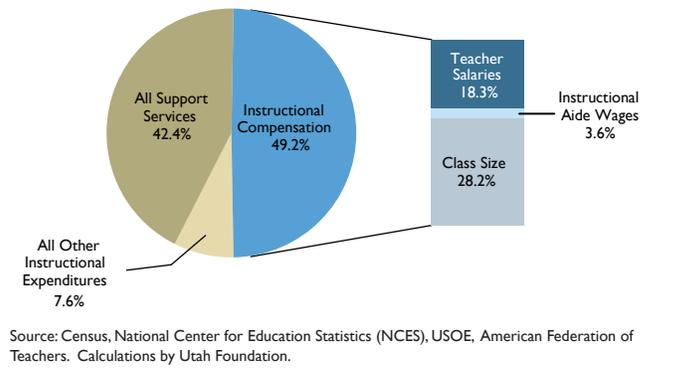
The category of staff support includes expenditures for curriculum development, teacher, and instruction services such as library and computer assistance. Utah spends about \$250 per student on staff support versus \$450 at the national level. This difference accounts for 5% of the U.S.-Utah spending gap.

As an example in this category, Utah’s librarians are responsible for twice as many students as the average U.S. librarian. Utah has nearly 1,900 students per librarian, compared to a national average of about 900. Utah’s peer states have about 400 to 900 students per librarian. Since 1990, over 60 studies in 19 states have shown clear evidence of a positive relationship between school libraries with qualified school librarians and student achievement.<sup>5</sup>

### General Administration

Utah spends \$61 per student on general or district-level administration, or 35% of the national average (\$174 per student). Utah’s lower

**Figure 3: Components of the Per Pupil US-Utah Spending Gap, 2005-2006**

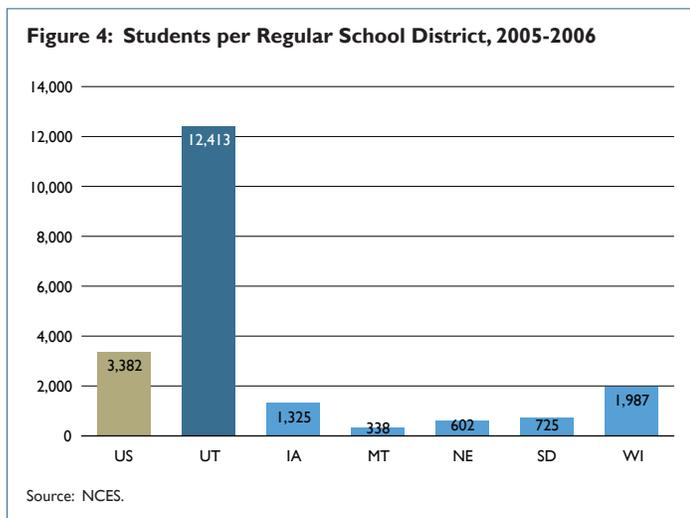


spending level is a result of relatively large districts and relatively few general administrative staff members. For the 2005–2006 school year, Utah had about 12,400 students per regular school district (this does not include charter schools) (see Figure 4). Nationally there are about 3,400 students per regular school district. Utah has about 1,300 students per local education agency administrator (generally district administrators), or about double the national average.

Many researchers have challenged the common assumption that larger districts are more cost-effective. In 2005, the Manhattan Institute published a national study suggesting that smaller districts, perhaps because they create competition by increasing parental choice, result in higher graduation rates. Economist Caroline Hoxby has also observed higher student achievement in combination with lower costs in areas with more “inter-district choice.” According to a 2005 Deloitte Research study, very small districts improve educational outcomes but also have higher per-pupil costs, while very large districts (over 6,000) have economies of scale for purchasing but higher administrative costs, increased bureaucracy and decreased student learning.

### School Administration

Utah spends about \$330 per pupil for school administration, or about 65% of the national average (\$510). This difference in funding reflects Utah’s relatively large schools and relatively few administrative staff. Utah averages about 530 students per public elementary school compared to about 480 students per U.S. public elementary school, and between 171 and 355 students per elementary school in Utah’s peer states. Utah averages 917 students per public secondary school, about 12% larger than the national average (819 students per public secondary school). Utah’s peer states have between 153 and 554 students per public secondary school.



A large body of research concludes that smaller school size is associated with improved academic outcomes for students, including higher test scores and higher graduation rates. However, without strong scientific evidence from a controlled experiment, it is difficult to determine conclusively whether reduced school size causes or merely correlates with positive outcomes. Theoretically, larger schools may have cost benefits because of fixed costs (principal’s salary), larger facilities, and more specialized teachers. However, a growing number of studies have concluded that smaller schools are more cost-effective, when one considers not the cost-per-student but the cost-per-graduate.

Researchers with the Center for Policy Research in New York write that “there is some evidence that moderately sized elementary schools (300-500 students) and high schools (600-900 students) may optimally balance economies of size with the potential negative effects of large schools.” Other experts caution against the concept of an “optimal” size or implementing small schools universally.

### Operation and Maintenance of Plant

Utah spends about \$520 per student on operation and maintenance of buildings and equipment, or 57% of the U.S. average (about \$900 per student). This difference in spending accounts for over 10% of the overall U.S.-Utah spending gap for current expenditures. One possible explanation for Utah’s lower operation and maintenance costs is that Utah’s buildings may be newer because of our rapidly growing student population.

### Pupil Transportation

Utah spends \$190 per student on pupil transportation, or less than half of the national average (about \$400 per pupil). Utah’s low transportation costs are surprising given the fact that larger districts usually result in higher than average transportation costs. Murrell Martin, Pupil Transportation Specialist at USOE, explains that Utah has lower transportation costs because Utah transports a smaller percentage of students than the U.S., and at a lower cost per student transported.

### SCHOOL OFFICIALS’ COMMENTS

We asked state school officials and superintendents of some of Utah’s large districts to comment on the spending gap for the different categories under current expenditures. Utah school officials expressed the opinion that low instructional expenditures, and the resulting large class sizes and lower teacher salaries, are detrimental to educational quality. School officials and superintendents generally believe that we are under serving Utah’s students by spending significantly less than other states on pupil support and staff support. Several officials mentioned school counselors as particularly critical. One school official asserted that teachers are “under supervised, under coached, and under supported.” On the other hand, these officials generally felt that Utah’s low spending on district and school administration, operation and maintenance of buildings, and pupil transportation reflects Utah’s cost advantages and is not generally harmful to education outcomes. School officials note that Utah spends more money initially to build efficient buildings that save money over time.

### CONCLUSION

Utah’s large class sizes and comparatively lower teacher pay account for about half of the U.S.-Utah per pupil spending gap. Research on reducing class size and increasing teacher pay shows mixed results in effectiveness, but studies do show that both reforms can be effective if they involve changes in the way schools work. These changes can include different teaching methods to take advantage of smaller classes and different incentives to focus teachers on student performance in exchange for higher pay.

Some of the differences in levels of educational services shown in this report likely affect Utah’s performance compared to our demographic peer states. In almost every category of spending, Utah’s five peer states were spending significantly more and providing much lower student-

to-staff ratios. Some of the differences in spending can be credited to Utah's cost advantages, but when Utah's peer states are providing pupil-teacher ratios 40% smaller, nearly twice the guidance counselors, twice the number of librarians, and district and school sizes that are a fraction of the size of Utah's, some of these factors are surely affecting learning outcomes.

**ENDNOTES**

- 1 Bruce J. Biddle and David C. Berliner, "What Research Says about Small Class Sizes and Their Effects," WestEd Regional Educational Laboratories, 2002, <[http://www.wested.org/online\\_pubs/small\\_classes.pdf](http://www.wested.org/online_pubs/small_classes.pdf)> (26 May 2008).
- 2 Michael J. Podgursky and Matthew G. Springer, "Teacher Performance Pay: A Review," Journal of Policy Analysis and Management, 2007, 26(4), p. 909-949.
- 3 Center for School Counseling Outcome Research, University of Massachusetts-Amherst, Research Briefs, <<http://www.umass.edu/schoolcounseling/briefs.htm>> (26 May 2008).
- 4 National Conference of State Legislatures, "State School Nurse To Student Ratio"; Bruce Horovitz and Kevin McCoy, "Nurse shortage puts school kids at risk," USA TODAY, 14 December 2005, <[http://www.usatoday.com/news/nation/2005-12-13-school-nurses\\_x.htm](http://www.usatoday.com/news/nation/2005-12-13-school-nurses_x.htm)> (26 May 2008).
- 5 "School Libraries Work," Research Foundation paper, Scholastic Library Publishing, 2008, <[http://www.ala.org/ala/aasl/aaslproftools/resourceguides/slw3\\_2008.pdf](http://www.ala.org/ala/aasl/aaslproftools/resourceguides/slw3_2008.pdf)> (26 May 2008).

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