

REACHING FOR EDUCATIONAL EQUITY: AN EVALUATION OF UTAH'S RURAL SCHOOLS

HIGHLIGHTS

- In determining educational equity, rural schools have a range of advantages and disadvantages in comparison to non-rural schools. Measures are in place which ensure some equity in terms of students' basic education, but may not be sufficient to help rural students achieve educational excellence.
- More rural than non-rural principals feel that their school buildings restrict student educational opportunity (26% and 9% respectively).
- Of secondary non-rural teachers, 84.7% are "highly qualified," compared to 72.4% in rural schools. Conversely, 32.7% of non-rural school teachers are "experienced," compared to 38.7% of rural teachers.
- Non-rural schools have 25% larger class sizes than rural schools; rural schools have smaller classes out of geographical necessity, though it is economically detrimental to such schools.
- Rural students have fewer courses options than non-rural students, primarily foreign languages, Advanced Placement, electives, and in-school instructor delivered concurrent enrollment.
- Rural schools tend to perform better than non-rural schools on annual state exams. However, non-rural students had higher ACT test scores and higher college entrance rates.
- Rural students had higher graduation rates than non-rural students (79.3% to 75.9%), but that difference has been narrowing.

The mission of Utah Foundation is to promote a thriving economy, a well-prepared workforce, and a high quality of life for Utahns by performing thorough, well-supported research that helps policymakers, business and community leaders, and citizens better understand complex issues and providing practical, well-reasoned recommendations for policy change.

Daniel T. Harbeke, Chairman
 Jeffrey K. Larsen, Vice Chairman
 Bryson Garbett, Treasurer
 Stephen J. Hershey Kroes, President
 Morgan Lyon Cotti, Ph.D., Research Director
 10 West Broadway, Suite 307
 Salt Lake City, UT 84101
 (801) 355-1400 • www.utahfoundation.org

Utah's rural schools face significant educational challenges. They have greater difficulties than non-rural schools in hiring teachers, finding teachers with specialties, and finding teachers who teach multiple subjects. Rural schools also come up short in offering the wide array of courses that non-rural schools offer. Yet when we look at rural educational outcomes, we see paradoxes. In the core subjects that the state tests on an annual basis, rural students tend to perform better than non-rural students. Rural students also graduate at a higher rate, though in the past several years this difference has been diminishing. On the other hand, rural students have lower college entrance exam scores and are less likely to enter college.

Rural school principals and superintendents tend to believe that smaller school and classroom environments provide more personal student attention, thus bolstering graduation and core-subject learning. Some of the data that Utah Foundation analyzed in this evaluation justifies these opinions. While rural students are thriving in the basics and are not dropping out of school, they are not being offered the educational breadth or the depth of advanced courses that non-rural students are, which may be suppressing college enrollment rates.

The process of providing additional funds to rural schools and districts to compensate for their small scale seems to be providing a level of funding that is sufficient and equitable in meeting the basic education of rural students. However, rural principals and superintendents believe that these sources of funding are at risk. Further, they feel that financial constraints are preventing rural students from reaching excellence. By nature of their small size and the resulting financial constraints, rural schools have difficulty providing the course offerings and facilities that rural principals want – that non-rural principals have – which in turn may be holding students back from attaining higher levels of education.

EVALUATION BACKGROUND

In 2012, the Utah Rural Schools Association (URSA) contracted with Utah Foundation to update a rural schools evaluation performed for URSA by the Western Institute for Research and Evaluation (WIRE) in 1998. The Utah Foundation evaluation expanded upon the original evaluation to include surveys/questionnaires, a state demographic overview, a description of school finance, the concepts of effort and equity, and a review of educational inputs and outputs. The evaluation provides comparisons between rural, town, suburban, and city schools and districts utilizing survey responses as well as data from state and national informational sources. It also considers differences between schools which receive Necessarily Existent Small Schools (NESS) funding and those which do not. This evaluation is based upon the complete study which is available at utahfoundation.org.

There are many definitions of “rural” or “rurality” for schools and districts. Since 2006, the National Center for Education Statistics (NCES) has categorized schools as “rural,” “town,” “suburb,” or “city” (these categories are then further broken down into three subcategories each). This classification provides an “indication of [a] school’s location relative to a populous area.”¹ Utah Foundation utilized this classification for student- and school-level information. According to NCES, 24.1% of Utah’s schools were rural in 2011, and 84,602 or 15.4% of its 542,853 students were in rural schools.

In order to determine district-level rurality, this evaluation utilized the U.S. Office of Management and Budget Core-Based Statistical Area classification of counties. However, Utah Foundation determined

that while Juab and Summit counties are non-rural, three districts in the more-remote, less-populated areas of those counties were rural (Tintic and North and South Summit school districts). Based upon population by district designation, 31,989 or 5.9% of Utah students were in rural districts.

No rural Utah evaluation would be complete without a discussion of the Necessarily Existent Small Schools (NESS) designation. The primary funding source for public education is the districts’ general funds through the Minimum School Program (MSP) using a distribution formula based on the Weighted Pupil Unit (WPU). The WPU equalizes funding by the number of children in a district. The Basic School Program - which accounts for 67.2% of the MSP - has five categories of funding: Kindergarten, Grades 1-12, NESS, Professional Staff, and Administrative Costs. The state’s smaller, rural districts partially make up for the higher per-pupil costs related to smaller classes, schools and districts through the receipt of funding above the standard WPU from NESS funding and Administrative Costs. However, these funds make up a very small portion of all districts’ general funds (0.6% and 0.1%, respectively).

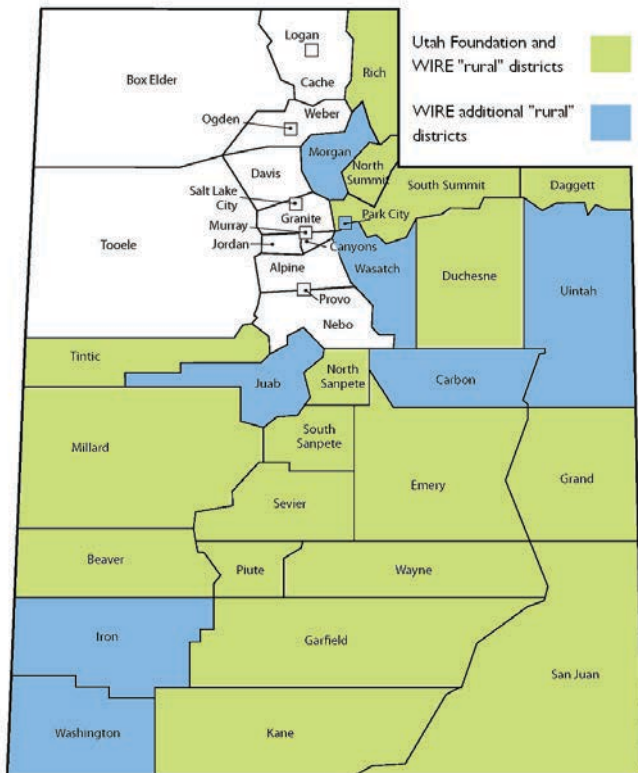
NESS funding has provided small schools with additional operating funds since 1974 as part of the updated MSP and WPU funding law.² This law permitted extra WPUs to be given to schools “which because of their isolation must be regarded as necessarily existent,” as determined by the state office after “consultation with local school districts.”³ It was the intent of the Legislature that those small schools which are not necessarily existent would not be funded. The rationale behind NESS funding is that all schools have a minimum set of costs that they simply cannot avoid.

In 2011 there were a total of 92 NESS schools, the smallest being the four-student Callao School (K-12) in Utah’s West Desert. The average NESS size was 159 students. Of the 92 schools receiving NESS funding in Utah, 90% are considered rural schools (by NCES locale designation) and 93% are located in rural districts.

In essence, NESS funding is provided to help achieve rural educational equity. The 1990 Utah School Finance Taskforce stated that “the concept of equity in public education is an enduring one, inherent in the original vision that led to the establishment of the American public school system.”⁴ There are generally three types of equity with respect to school funding: horizontal equity, vertical equity, and fiscal neutrality. The concept of horizontal equity measures how equal funding levels are for “equal” students (students with similar characteristics in similar schools and districts). Vertical equity examines whether “unequal” students are appropriately, fairly treated. Lastly, fiscal neutrality determines whether relationships exist between per pupil expenditures and property wealth of districts.^{5,6}

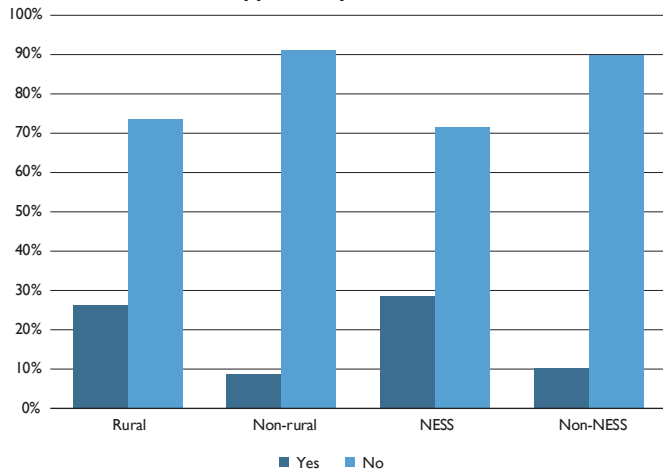
A key objective of this evaluation is to provide information about educational inputs and outputs in an effort to analyze educational equity in Utah. To this end Utah Foundation performed three surveys as part of its research: a high school senior survey, a principal survey and a superintendent survey. Of the 39,717 high school seniors in Utah, 1,434 participated, for a 3.6% participation rate. More non-rural students responded than rural students (43.4% compared to 56.6%, respectively), though a greater percentage of rural seniors responded than non-rural seniors (nearly 25% compared to around 2%, respectively).

Figure 1: Utah’s Rural School Districts (1998 WIRE Study and Utah Foundation Evaluations)



Note: Canyons School District was a part of Jordan School District in 1998.
Source: Map from USOE Educational Directory, 2012; modified by Utah Foundation.

Figure 2: Principals' Opinions on Whether a School Building Restricts Educational Opportunity



Source: 2012 Utah Foundation Principal Survey.

Of the 116 high schools and 13 K-12 schools in Utah, 53 principals responded to the principal survey (from 30 districts), for a 38.8% response rate. Due to small sample sizes in each of the locale categories, Utah Foundation evaluated the surveys using rural and non-rural categories instead of the four locale codes. Of the responses, 35.8% were from rural schools and 64.2% were from non-rural schools.

The superintendent survey received 33 responses out of 41 total districts, for an 80.5% response rate. Of the responses, 42.4% were from rural districts and 57.6% were from non-rural districts. Of all rural districts, 77.7% of superintendents responded, and of all non-rural districts, 82.6% of superintendents responded.

The full results of each of these surveys can be found in the complete study available at utahfoundation.org.

EDUCATIONAL INPUTS: MAJOR FINDINGS

Educational inputs are those factors which affect the education of Utah's students. This includes teaching environments, teachers, courses and extracurricular activities.

Rural school buildings tend to be newer, but principals more often indicate that the buildings restrict educational opportunity. Rural schools tend to have smaller classes, but fewer course options. Rural teachers tend to have more experience, but are less likely to be "highly qualified." Rural districts have lower teacher attrition, but more difficulty in replacing teachers. Lastly, rural students participate in more extracurricular activities, but are less satisfied with those activities and have more difficulty with extracurricular transportation.

Figure 3: Percent of "Highly Qualified" Teachers

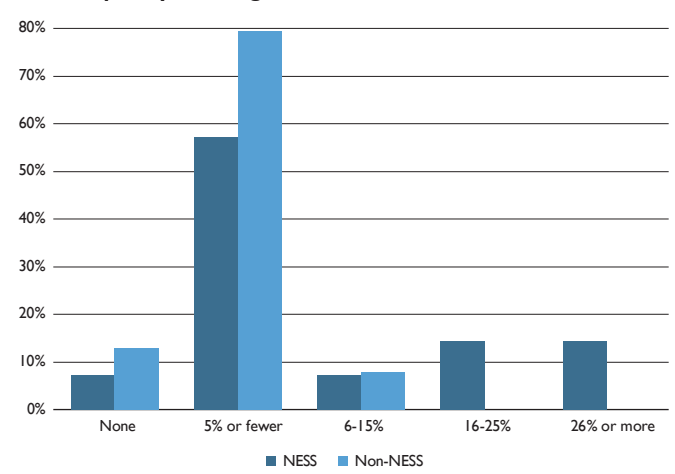
		"Highly Qualified"
Elementary	Rural	94.4%
	Non-Rural	95.8%
Secondary	Rural	72.4%
	Non-Rural	84.7%

Source: USOE UTRex/Data Clearinghouse, analysis by Utah Foundation.

Teaching Environment

According to this study's principal survey, rural schools have fewer specialty rooms and labs (except for agriculture rooms and metal working shops). This difference is even

Figure 4: Proportion of Schools Reporting Percentage of Teachers with Temporary Teaching Authorizations



Source: 2012 Utah Foundation Principal Survey.

greater between NESS and non-NESS schools. However, rural schools have newer buildings than non-rural schools (average of 32 years old compared to 49 years old), as do NESS schools (36 compared to 45 years). Nonetheless, major maintenance issues are felt across the state. Perhaps the most important question is whether the school buildings restricted educational opportunity in some way. More rural principals (26%) responded that their buildings do restrict educational opportunity than did non-rural principals (9%). This contrast was even greater between NESS (29%) and non-NESS (10%).⁷

Rural principals indicated that they had better ratios of students per computer than non-rural schools (2.8:1 and 4.0:1 respectively). The ratio was even better for NESS schools compared to non-NESS schools (2.5:1 and 4.2:1 respectively).⁸ When asked whether they agreed that their number of computers were adequate, majority of principals disagreed. While rural principals agreed somewhat more than non-rural ones, the difference was not statistically significant.⁹ Many districts and schools would like additional computers, newer computers, and related technology. When asked how they would use an increase in one-time funding, non-rural and rural superintendents' top answer was to increase technology (31% and 27%, respectively); non-rural and rural principals had a similar but stronger response (46% and 70%, respectively).

Teacher Qualifications and Professional Development

The No Child Left Behind Act (NCLB) defines a teacher as "highly qualified" in one of the core academic areas if they have a bachelor's degree, full state certification or licensure, and are able to demonstrate knowledge in every subject they teach. The delineation of educator qualifications is an attempt to objectively vet the best teachers rather than making the determination subjectively. The rationale for such determination is that being a good teacher "is the cornerstone to what makes students successful."¹⁰

In 2004, rural teachers were given a variance on the rule that would have required all teachers to be highly qualified by 2006. Variances were also provided for science and multi-subject teachers, which was also a great benefit to rural districts.¹¹ While Utah received

waivers regarding NCLB requirements, it is valuable to look at these “qualification” differences between rural and non-rural districts. The proportion of highly qualified teachers (as defined by NCLB) in elementary school classes across rural and non-rural districts are fairly equal (94.4% and 95.8%, respectively). However, the difference was larger in secondary rural (72.4%) and non-rural (84.7%) classes. This difference is due to various factors; the need of rural districts to have teachers cover multiple subjects likely plays the largest role.

Some variation was found in the percentage of rural and non-rural teachers that have temporary authorizations to teach classes (such as Alternative Routes to Licensure or USOE exemptions), but the differences were not statistically significant. However, the differences between NESS and non-NESS principals’ answers were significant.¹² Most strikingly, 28.6% of NESS schools report over 15% of their teachers teaching with temporary authorizations, while all non-NESS schools report 15% or fewer teachers teaching with temporary authorizations. Levels of qualification and licensure might have some impact on student success, but this has not been as well documented as teacher experience.

Teacher Experience

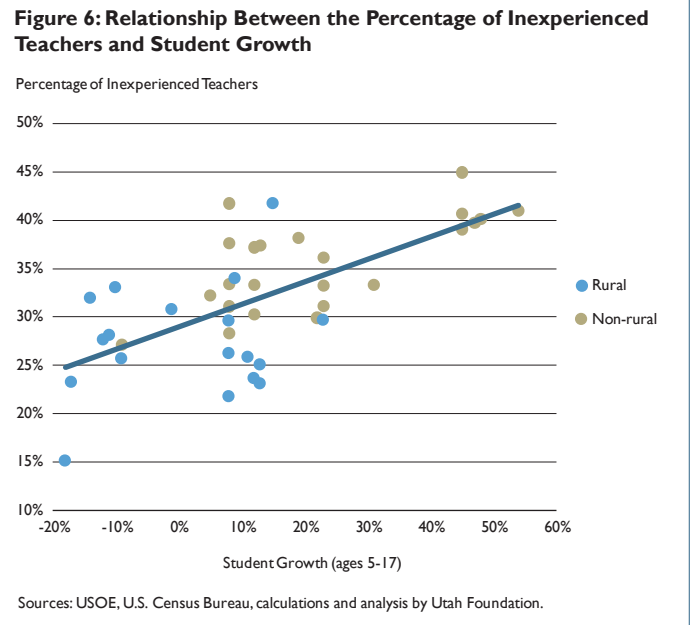
Teacher experience has important effects on student achievement. Achievement tends to increase at an increasing rate for each year for the first 20 years of educator experience, at which point experience has diminishing returns.¹³

In Utah, rural districts tend to have more experienced teachers than non-rural districts. Rural districts have a higher percentage of teachers with 16 or more years of experience, (38.7% to 32.7%, respectively).¹⁴ Rural districts also have a higher percentage of teachers with six to 15 years of experience (33.8% to 31.8%) and a lower percentage of teachers with less than five years teaching (27.5% to 35.5%).¹⁵

One explanation for the differences between rural and non-rural districts can be found in the growth of school age populations within non-rural districts. Since 1992, rural districts have seen their student populations decrease by an aggregate of 7.7%, while their non-rural counterparts have grown by 17.7%.

Evaluating growth together with rurality in determining experience of teachers decreases the importance of the effect of rurality. Rurality and growth both work to affect the percentage of low levels of experience (0-5 years) in districts (being rural decreases the low experience rate while growth increases it).¹⁶ However, only growth significantly affects the percentage of high levels of experience (high growth decreases the high experience rate).¹⁷ A graphical representation of the effect of rurality and growth on the percentage of low levels of experience is shown in Figure 6.

A 2007 study determined that Utah has a high demand for teachers not only because of increased growth but also due to teacher



attrition.¹⁸ Increased attrition is a problem because of its relationship with educational quality, equity and efficiency.¹⁹ As noted above, educational quality is affected by the need to hire inexperienced teachers, while efficiency is affected simply through the need to hire, train and educate teachers. Equity is impacted through teacher turnover which is highest in low-performing, high-poverty schools, potentially resulting in even lower performance.²⁰

The average attrition rate in 2007 was 11.2%. Rural districts had fewer teachers leaving during that year than non-rural districts (8.1% and 11.4%, respectively). The range of attrition rates in rural districts was between 3.3% in Millard School District and 14.5% in San Juan School District. The range of rates in non-rural districts was between 2.9% in Murray School District and 19.5% in Provo School District.

Many public school teachers are aging, with nearly half of all teachers nationally being Baby Boomers. At the same time, teachers as a whole are becoming more inexperienced, with the median years of experience dropping from 14 in 1987 to 11 in 2007, and the mode (or most common) dropping from 15 years of experience to one.²¹ This apparent contradiction is likely due to growth and attrition, resulting in an instructor pool with a proportionally small number of teachers with medium levels of experience (6-15 years).

The threat to rural districts is that their population is burdened with the possibility of a wave of retirement from their high number of experienced Baby Boomers. This will rapidly decrease rural experience levels and exacerbate the difficulty of hiring teachers in rural areas. However, the recent recession and retirement trends in general have increased the postponement of retirement, which implies that these teachers may remain in their classrooms longer, allowing for recent hires to gain experience before adding additional novices.

Hiring Teachers

While superintendents indicated they had some difficulties hiring teachers, none of them indicated that they have major difficulties. In rural districts, 71.4% of superintendents indicated that it was a minor difficulty hiring elementary teachers, compared to 15.8% of superintendents in non-rural districts. However, it was also more

Figure 5: Educator Experience

	Teachers with Five and Fewer Years of Experience	Teachers with Six to 15 Years of Experience	Teachers with 16 and More Years of Experience
Rural	27.5%	33.8%	38.7%
Non-Rural	35.5%	31.8%	32.7%

Note: Only includes experience teaching in Utah, not out of state.
Source: USOE, calculations and analysis by Utah Foundation.

Figure 7: Difficulty in Hiring Teachers

	Major Difficulty		Minor Difficulty		Not Difficult	
	Rural	Non-rural	Rural	Non-rural	Rural	Non-rural
Elementary*	n/a	n/a	71.4%	15.8%	28.6%	84.2%
Special Ed. (Elem.)	64.3%	31.6%	35.7%	63.2%	n/a	5.3%
Secondary	29.20%	14.80%	48.70%	36.80%	22.10%	48.40%

* Statistically significant difference at 99%
 Source: 2012 Utah Foundation Superintendent Survey.

difficult for rural superintendents to hire elementary special education teachers; 64.3% of rural district superintendents find it a major difficulty compared to 31.6% of non-rural districts superintendents. All of the remaining superintendents indicated that it was a minor difficulty except one superintendent (non-rural) who found hiring elementary special education teachers not difficult.

It was much more difficult for rural superintendents to hire secondary school teachers than for non-rural superintendents. About 29.2% of rural superintendents indicated it was a major difficulty, compared to 14.8% of non-rural superintendents, and 48.7% of rural superintendents indicated it was a minor difficulty, while 36.8% of non-rural superintendents did so.²²

Both rural and non-rural superintendents indicated it was most difficult hiring math teachers and least difficult hiring history and PE/health teachers. It was significantly more difficult for rural superintendents than non-rural ones to hire English, foreign language, history, fine art, PE and health, and AP teachers.²³ The largest difference between rural and non-rural schools was in hiring foreign language teachers (57.1% compared to 10.5% found it a major difficulty) and fine arts teachers (35.7% compared to 5.3% found it a major difficulty).

Housing situations can add to the difficulty of hiring teachers. The principal survey showed that the availability and affordability of housing is more pressing in rural areas than non-rural ones. One way rural districts overcome this issue is by providing temporary housing options, like hotel vouchers and district apartments/houses. Park City School District (a non-rural district) provides an annual Regional Housing and Travel Allowance to compensate for the district’s higher cost of living or high commuting costs.

Other factors also play a role in hiring teachers, like compensation and the need for multi-subject teachers. Utah’s median teacher salary (\$46,340) is much lower than the national median (\$54,819),²⁴ although some of the difference can be explained by Utah’s younger, less-experienced teachers.²⁵ The differences between rural and

non-rural districts are generally not significant.²⁶ A rural district superintendent explained his difficulty in hiring teachers as follows:

“Most of the time I need to hire people who can teach more than one subject... teach in their major, minor and sometimes their interests/avocations, or 6 grade levels of one subject. I often build a program based on the skills teachers have rather than hiring teachers to fill the program. We offer more classes than I would like that are taught by under-qualified teachers... good people doing the best they can but it is less than optimal.”

Student-Teacher Ratios

Non-rural school officials are more concerned with high student-teacher ratios than rural schools. When non-rural superintendents were asked how they would use an increase in ongoing funding, their two primary answers were increasing salaries (32%) and decreasing class sizes (28%). For rural superintendents these answers were only 17% each. (Rural superintendents were most interested in increasing course offerings (21%), and were also concerned with professional development for teachers (17%) and increasing staff benefits (17%).) When non-rural principals were asked how they would use an increase in ongoing funding, their top answer was to decrease class sizes (32%). Only 4% of rural principals were interested in decreasing class size.

The average class size for both elementary and secondary schools is smaller in rural districts. Non-rural elementary classes are 15% larger than rural ones (24.5 students compared to 20.8) and non-rural secondary classes are nearly 25% larger than rural ones (28.5 students compared to 21.5). Further, while the largest average classes in each grade and/or course are in non-rural districts, the smallest averages of each are in rural districts. Alpine School District has the greatest number of largest average-size classes (topping out at 36 students in earth science classes). Tintic School District has the greatest number of smallest average-size classes (with the smallest being six students in 5th grade classes).

Rural schools have comparatively lower student-teacher ratios out of necessity. Many rural school populations are simply not large enough to allow for larger class sizes. Smaller class sizes are great for students and teachers in many ways, but can become problematic for schools and districts faced with limited budgets. In secondary grades, students must be separated into a greater variety of classes in order to meet graduation requirements. This required variety of classes greatly and necessarily reduces class sizes in small, rural schools, below what would be considered cost effective in larger, non-rural schools.

Course Offerings

The larger the school, the more flexibility it has in offering a wide range of courses which meet the individualized needs of its students. Alta High School and Davis High School are two of the largest schools in the state with around 2,500 students. In 2012, Alta offered 244 classes while Davis offered 198 (not including concurrent enrollment or off-campus CTE classes), which offerings are comparable to similarly-sized schools.

Figure 8: Difficulty in Hiring Secondary School Teachers by Subject

	Major Difficulty		Minor Difficulty		Not Difficult		Not Applicable	
	Rural	Non-rural	Rural	Non-rural	Rural	Non-rural	Rural	Non-rural
English / Lang. Arts*	7.1%	5.3%	85.7%	26.3%	7.1%	68.4%	n/a	n/a
Foreign Lang.*	57.1%	10.5%	35.7%	63.2%	n/a	26.3%	7.1%	n/a
History**	7.1%	n/a	28.6%	n/a	64.3%	100.0%	n/a	n/a
Mathematics	64.3%	47.4%	35.7%	42.1%	n/a	10.5%	n/a	n/a
Science	35.7%	42.1%	64.3%	52.6%	n/a	5.3%	n/a	n/a
Fine Art**	35.7%	5.3%	42.9%	31.6%	21.4%	63.2%	n/a	n/a
P.E. and Health*	n/a	n/a	35.7%	n/a	64.3%	100.0%	n/a	n/a
Career and Tech. Ed.	21.4%	5.3%	50.0%	63.2%	28.6%	31.6%	n/a	n/a
Concurrent Enrollment	28.6%	10.5%	42.9%	42.1%	21.4%	42.1%	7.1%	5.3%
Advanced Placement	42.9%	21.1%	42.9%	36.8%	n/a	42.1%	14.3%	n/a
ESL endorsed**	21.4%	15.8%	71.4%	47.4%	7.1%	36.8%	n/a	n/a

* Statistically significant difference at 99%
 ** Statistically significant difference at 95%
 Source: 2012 Utah Foundation Superintendent Survey.

Figure 9: Percentage of Seniors Having Taken Classes in Grades 7-12

Course	Non-Rural	Rural
Algebra I***	95.6%	93.6%
Algebra II	86.6%	83.8%
Advanced Algebra	30.5%	20.2%
Geometry	93.6%	92.9%
Trigonometry	26.0%	22.3%
Pre-Calculus	34.8%	34.0%
Calculus***	15.7%	12.2%
Applied Math I*	5.8%	10.3%
Applied Math II*	4.3%	7.2%
Biology	91.4%	92.3%
Chemistry*	59.8%	52.6%
Physics	36.9%	36.6%
Other science	60.3%	59.1%
Computer courses**	62.3%	68.5%
Spanish I*	57.3%	43.7%
Spanish II*	45.7%	22.3%
German I*	6.7%	3.5%
German II*	4.6%	1.1%
French I*	16.8%	5.8%
French II*	12.2%	2.9%
Chinese I*	4.2%	0.3%
Chinese II*	3.7%	0.3%

* Significant difference at 99%
 ** Significant difference at 95%
 *** Significant difference at 90%

Source: 2012 Utah Foundation High School Senior Survey.

At the smallest schools, those with around 100 students, there are far fewer schedule choices. For example, in 2011 Manila High School (grades 9-12) offered 35 classes and Panguitch High School offered 39 courses. These small, rural/NESS schools offer about 20% of the classes the large, non-rural schools do. This is not atypical. As expected, however, the differences between rural and non-rural offerings narrow as the line between rural and town locales begins to blur.

In addition to offering more classes, larger schools also offer more concurrent enrollment options. Alta High School offered 26 additional concurrent enrollment classes through Salt Lake Community College, from math to marketing, and from English to Spanish. Alta offered

additional CTE courses through Canyons Technical Education Center (with 20 courses) and Jordan Applied Technology Center (with 13 courses). Davis High School offered concurrent enrollment classes from various higher education institutions and additional CTE courses through Davis Applied Technology Center (29 courses).

However, these differences are not always reflected in the number of core classes that are taken. As shown in Figure 9, while non-rural students are more likely to have taken most classes, the differences are not consistently statistically significant except with foreign language classes.

Career and Technical Education (CTE) is designed to prepare students with academic and technical skills needed in the workforce.²⁷ A look at high school course schedules shows the difference in CTE course offerings between rural and non-rural schools, as illustrated in Figure 10. While Alta High School has the largest 10th-12th grade student body in the state and Tabiona is a very small NESS school, course offerings are representative of their respective school sizes. As detailed in the principal survey, a higher percentage of non-rural schools offer each of the nine CTE categories except Agriculture classes. On average, non-rural high school seniors indicated that they took more of all of the CTE categories except Agricultural classes and Skilled and Technical Sciences classes. Non-rural students took more CTE courses in general than rural students (6.1 and 5.4, respectively).²⁸

In the high school senior survey, students also answered whether they would have verified a skill attainment in a CTE Pathway by the end of their senior year. A “pathway” is designed to provide a roadmap for students to allow them to acquire a depth of knowledge in one of their interests which will hopefully link with the post-secondary education of their choosing. Once a student completes the roadmap in an area of interest, they are said to have verified or completed their skill attainment. Non-rural students were more likely than

Figure 10: CTE Offerings, Non-Rural and Rural School Examples

CTE Category	Alta High School	Tabiona High School
Career and Technical Education	4	1
Agriculture	0	7
Business	23	2
Family and Consumer Science	10	1
Health and Science Technology	4	0
Information Technology	2	0
Technology and Engineering	6	0
Skilled and Technical Science	5	0
Total (not including ATC courses)	54	11

Source: Alta Hawks Course Catalogue 2012-2013 and Tabiona class schedule 2011-2012.

rural students to have indicated that they would have verified their skill attainment by the end of their senior year (61.8% to 55.2%, respectively).²⁹

Advanced Classes

Utah’s students have several options for taking advanced courses. The most common are Advanced Placement, concurrent enrollment, and International Baccalaureate classes. In 2011, 18,508 Utah students from 130 schools (including charter and private schools) took 29,851 Advanced Placement tests. Like course offerings in general, as well as CTE offerings, rural students take fewer AP courses and have far less access to AP courses. According to the high school senior survey, rural students took fewer of all AP classes except AP computer science. Rural students are offered fewer AP classes (1.3 per school) than town (5.4), city (13.3) and suburban students (16.0). The difference between NESS (0.5) and non-NESS (12.7) schools are even more striking.

While rural/NESS schools have a dearth of course offerings compared to their non-rural counterparts, they make up some ground with concurrent enrollment (CE) courses. For example, Tabiona High School has a limited course offering, but in 2011 it offered 16 CE courses through Utah State University. According to the high school senior survey, rural students took an average of 2.9 CE classes, compared to 2.0 classes for non-rural students, primarily due to the availability of distance learning CE offerings. On the other hand, rural high school seniors do not report having taken more online courses than non-rural seniors (0.9 credits each).

Figure 11: Percentage of Seniors Having Taken AP Classes in Grades 7-12

	Non-Rural	Rural
AP History	24.4%	22.0%
AP English Lit. and Comp	27.2%	26.2%
AP English Lang. and Comp.*	29.6%	9.6%
AP Math*	18.4%	11.1%
AP Science*	18.1%	13.0%
AP Foreign Language*	7.0%	0.8%
AP Art & Music**	9.5%	6.6%
AP Computer Science	1.6%	1.9%

* Difference significant at 99%.
 ** Difference significant at 95%.

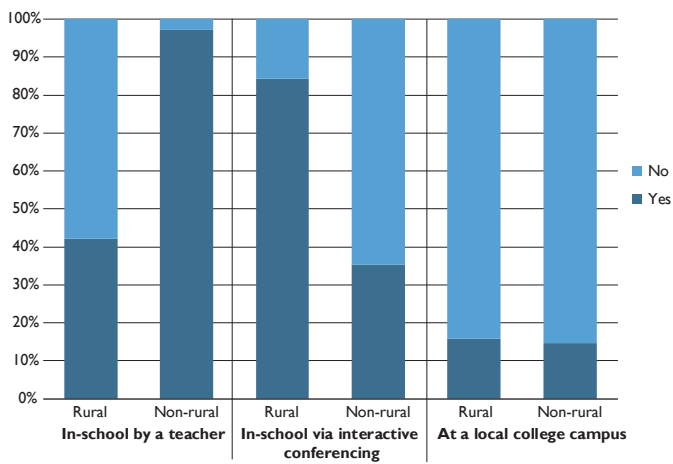
Source: 2012 Utah Foundation High School Senior Survey.

Figure 12: Average Number of Advanced Placement Classes

	Number of Different Courses Offered	Number of Classes Offered
Rural	1.3	1.3
Town	5.4	5.7
Suburb	16.0	18.1
City	13.3	14.1

Source: College Board, 2011.

Figure 13: Delivery of Concurrent Enrollment (CE) Courses



Source: 2012 Utah Foundation Principal Survey.

CE courses are delivered in at least one of the three ways presented in the survey: in-school by a teacher, in-school via interactive conferencing, and/or at local college campuses. The differences between types of CE in non-rural and rural was striking; 55.0% more non-rural principals indicated having offered classes in-school by a teacher and 48.9% more rural principals indicated having offered classes via interactive conferencing, both of which differences were statistically significant.³⁰ There was an insignificant difference between percentages of students taking CE courses at local college campuses.

A review of course offerings shows that in rural areas, CE offerings are provided via distance learning by college instructors at higher education institutions. In cities, suburbs and - to a lesser extent - towns, CE classes are taught primarily by high school teachers (with master's degrees and proper endorsements) in traditional educational settings. The lack of in-class instructors could be detrimental to the overall quality of distance learning courses, but conclusive research on this subject at the high school level has yet to be performed.

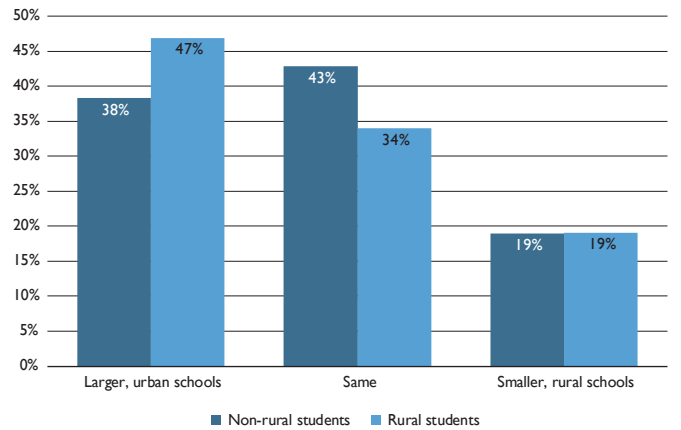
Rural principals and superintendents express concern that the number of CE offerings has been decreasing in recent years. This is due primarily to the complexity of timing CE courses within the timeframe of the school day, the necessary agreements and arrangements with the higher education institutions, and the fact that any such CE offering must be economically beneficial for such institutions.

Finally, International Baccalaureate (IB) is a program to promote leadership through a rigorous college preparation education. It allows junior and seniors to take classes (sometimes alongside AP students) and tests with the chance to earn internationally recognized IB Diplomas in addition to their high school diplomas. The program is only offered along the Wasatch Front, at Ogden, Clearfield, Bountiful, Skyline, Hillcrest, Highland, West, and Provo high schools. Accordingly, rural students have little opportunity to take IB courses.

Course Quality

Rural students have a smaller number of courses to choose from, and may also have lower course quality, though the latter metric is much more subjective. When questioned whether “larger, urban

Figure 14: Student Opinion of Whether Urban or Rural Schools Are Better at Providing Students with High-quality Courses



Source: 2012 Utah Foundation High School Senior Survey.

high schools” or “smaller, rural high schools” are better at providing students with higher quality courses, non-rural students were more likely to answer “same” while rural students are more likely to answer “larger, urban high schools.” Only 19% of rural and non-rural students chose smaller, rural schools.

Teacher Preparations

Most teachers in non-rural and rural schools have preparation periods during the school day. Depending upon course load, some teachers may be able to prepare all of the following day’s lessons within their prep period (or correct coursework, etc.). When teachers must prepare for a greater variety of classes each day, their workloads increase, making the preparation periods more valuable but decreasing the percentage of their preparatory work that can possibly be completed during that time.

At Manila Jr-Sr High School in Daggett School District, the seven full-time teachers taught 74 students in 7th-12th grades an average of 5.3 different courses each day (not including duplicate or P.E. courses). Similarly, the seven full-time teachers at Panguitch High School in Garfield School District taught 130 students an average of six difference classes per day (with full-time middle school or part-time teachers teaching all the PE courses). This high number of class preparations per day is common for smaller, rural schools, but not typically the case for larger schools, where teachers tend to have between two and four per day since such schools often offer the same classes several times each day. “Two is the ideal number of prep [courses] per day because it keeps teachers on their feet,” but does not overwhelm them.³¹

SHARP – Student Health and Risk Prevention

Since 2003, Bach Harrison, LLC has produced an annual “Prevention Needs Assessment” as part of a Student Health and Risk Prevention Statewide Survey of 49,707 respondents from 6th, 8th, 10th and 12th grades. The 2011 survey asked several categories of questions, two of which are detailed below.

Substance abuse and antisocial behavior: Rural and NESS students tended to have lower levels of alcohol and other drug usage, but more used tobacco and at younger ages. Rural and NESS students tended to have lower levels of antisocial behavior, though they did

report having greater access to firearms and more students brought them to school, having been suspended from school, and having driven after drinking alcohol.

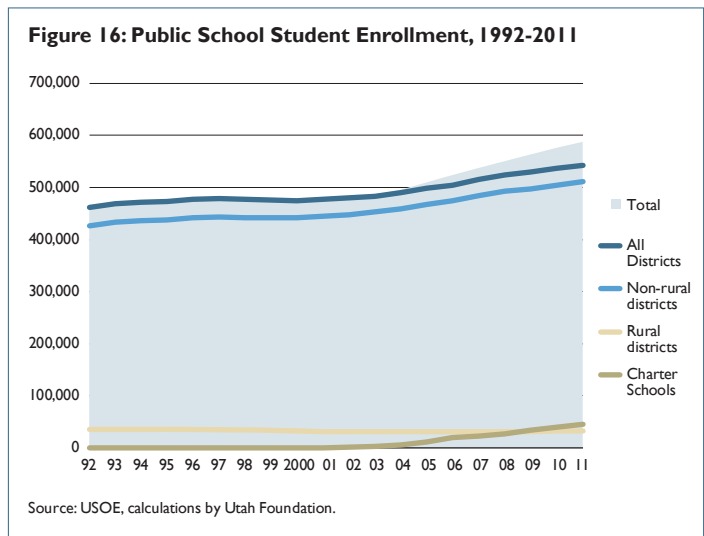
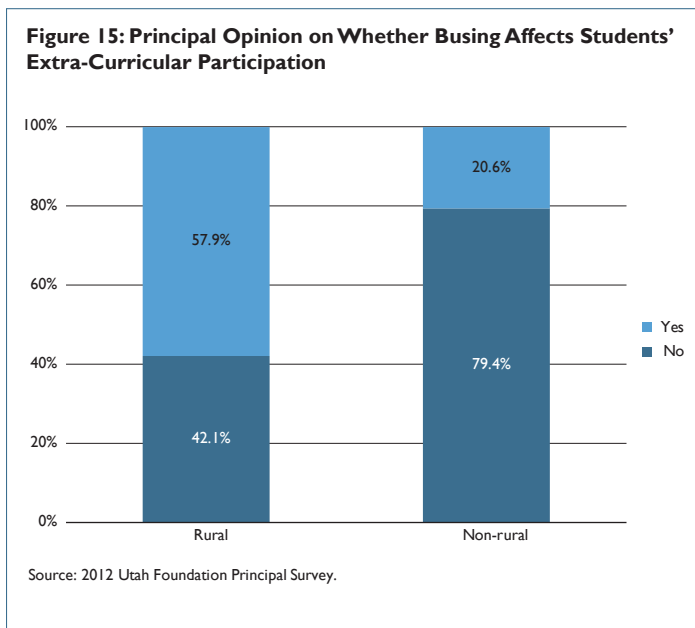
Risk and protective factor profiles: Rural and NESS schools tended to have the second lowest levels of risk of any locale (after towns but before suburbs and cities). These risk factors include drug usage and availability, depression, rebelliousness, academic failure and school commitment. Rural and NESS schools had the highest levels of protection of any locale (followed by towns, suburbs and cities). These protective factors include involvement and attachment to their communities, families, schools and peers.

Extra-Curricular Activities

When questioned whether “larger, urban high schools” or “smaller, rural high schools” are better at providing students with more extra-curricular opportunities, both non-rural and rural students were more likely to answer that “larger, urban high schools” provide students with more extra-curricular opportunities (47% to 43%, respectively), though 35% of rural students and 20% non-rural students indicated that “smaller, rural schools” do a better job. Rural school officials believe that this difference is due to larger schools’ ability to offer more extra-curricular programs. School size dictates that there tends to be more competition for a limited number places in each of the larger schools’ programs, while at smaller schools “everyone who wants to be involved is involved,” such that “half of the school is involved in some extra-curricular activity.”³²

Principals were asked to indicate the average number of days per week sophomores, juniors and seniors missed three or more classes because of inter-school, intramural or out-of-town school activities. “Typical” rural students missed classes 1.0 day per week while “involved” rural students missed classes 2.0 days. Non-rural students missed fewer classes, with “typical” kids missing 0.8 days and “involved” ones missing 1.6 days.

Extra-curricular activities can be more complicated for rural schools because of transportation issues. When asked whether busing students to and from school affects extra-curricular participation, 57.9% of



rural principals indicated it did, compared to just 20.6% of non-rural principals.³³ To deal with this problem, schools sometimes offer additional busing. Over three times more rural principals indicated that they offered early or late buses for students participating in extra-curricular activities than non-rural principals, 36.8% and 11.8%, respectively.³⁴

Demographic Comparisons

According to NCES, 24.1% of Utah’s schools were rural in 2011, and 84,602 or 15.4% of its 542,853 students were in rural schools. Based upon population by district designation, 31,989 or 5.9% of Utah students were in rural districts, a slight downward trend from the 34,661 students in rural districts in 1992, when 7.5% of the total district population was rural.

The total rural population in Utah increased by 34.5% between 1990 and 2010 while non-rural population increased 62.1%. Since rural student population is declining but total rural population is increasing, this indicates that the rural population is aging. Also, since total rural population is increasing at a slower rate than the non-rural population, rural Utah’s political representation has been decreasing. Since rural population has been increasing at a lower rate than the non-rural population, this has translated into a loss of representation at the State Capitol. In the redistricting process that followed the 2010 census, three rural legislative districts were eliminated.

Changes in population numbers also affected other demographic characteristics. Research suggests that some of the most important demographics which affect student outcomes are those related to racial/ethnic groups, socioeconomic status, and academic attainment of parents.^{35,36,37,38} In 2011, 22.5% of students in Utah were racial or ethnic “minorities.” In rural Utah, 16.8% of the students were minorities compared to 22.9% in non-rural Utah.

A common measure of socioeconomic status is whether a student receives school lunch at a free or reduced price. This is typically the measure by which Utah schools may be

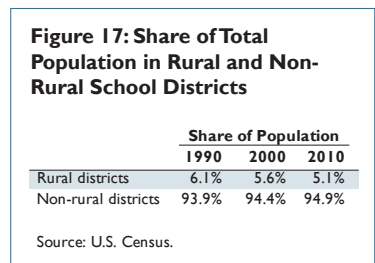


Figure 18: Race/Ethnicity and Total Student Population

	2011		Percent Change by Race/Ethnicity from 1998-2011					Total Increase/Decrease
	Student Population	Percentage of Students Who Are a Racial/Ethnic "Minority"	American Indian	Asian or Pacific Islander	African American or Black	Hispanic or Latino	White	
Rural	31,989	16.8%	-24.8%	13.3%	97.2%	121.0%	-14.7%	-9.5%
Non-Rural	510,864	22.9%	11.6%	47.2%	94.6%	164.5%	-0.2%	14.7%

Sources: NCES Common Core of Data, "Public Elementary/Secondary School Universe Survey" 1998; 2011 USOE Superintendent's Annual Report.

deemed eligible for federal Title I funds (which helps meet the needs of economically disadvantaged students). Free and reduced lunch recipients range from 20.1% all students in Morgan district to 74.2% in Ogden City district (both non-rural districts). The lowest rural percentage is in South Summit district (24.2%) and the highest is in Piute district (69.6%). The average percentage of free and reduced lunch recipients (weighted by district population) for rural and non-rural districts is 48.2% and 37.7%, respectively (just under three quarters of free and reduced lunch recipients receive free lunches).

Educational attainment of parents has a great effect on the academic success of their children.³⁹ Though Utah saw large increases in college enrollment in 2009 and 2010, it has been slipping from its formerly high status in national rankings for college enrollment and educational attainment.^{40,41} The percentage of adults 25 years and older with a high school degree is slightly higher in non-rural districts (90.8%) than in rural districts (87.7%).⁴² The difference between non-rural and rural districts is much greater in terms of bachelor's degree rates (31.1% and 18.5%) and graduate degree rates (9.8% and 5.7%).

EDUCATIONAL INPUTS: SCHOOL FINANCE

Nearly \$5 billion was directed toward Utah's public education-related activities in fiscal year 2011. About 33.7% was funded at the local level, 46.5% by the state, 11.6% by the federal government, and the remaining 8.1% was from other financing sources. In total, about 40% of Utah's state revenue sources went to public education. With respect to school finance, rural districts seem to be most often concerned with transportation costs, NESS and small-district administrative funding, and rural-related federal funding.

Transportation

Transportation costs are important to all districts, but are of special importance to rural areas. Funds are allocated from the state to districts for pupil trips to and from school. Amounts are based upon miles and hours in approved bus routes, and minimum administrative amounts for each school district.⁴³ Other trips are financed by the

Figure 19: Pupil Transportation Funds and Percent of Expenditure, by District (2011)

	State Pupil Transportation Revenues	Pupil Transportation Expenses*	Revenue as a Percentage of Expenses	Transportation Funding Shortfall
Rural, total	7,213,610	14,846,278	48.6%	51.4%
Non-rural, total	55,848,855	102,474,918	54.5%	45.5%

*Does not include school bus expenses

Source: USOE, Annual Financial Report, FY 2011.

districts without state assistance. According to Utah Code, "the state shall contribute 85% of approved transportation costs, subject to budget constraints."⁴⁴ However, the state has not contributed 85% since that rule was put into place in 2008.⁴⁵ The challenge of funding the amounts not provided by the state can affect rural districts more than non-rural ones. As seen in to Figure 19, rural districts have a larger transportation funding shortfall than non-rural districts (51.4% compared to 45.5%).

Eight of the 18 rural districts make up some of this lost ground in transportation funding from a \$500,000 transportation levy fund provided by the state from the Related to Basic School Programs fund. However, the recipients are not necessarily districts with the greatest transportation revenue shortfalls, though it is the case with the three of them: Daggett, Duchesne and Garfield districts.

NESS and Small-School Administration Funding

NESS funding has increased most years since it began in 1974, and since the 1998 WIRE evaluation, NESS funding increased in 12 of the 15 years. While funding has increased at an average of 6.7% per year since 1998, NESS funding currently makes up a smaller

Figure 20: NESS and Administrative Revenue, 2011

	NESS Funding as a Percent of Each District's General Fund Revenue	Administrative Costs as a Percent of Each District's General Fund Revenue
Rural districts		
Tintic	21.7%	7.3%
Daggett	18.9%	8.7%
Garfield	17.4%	2.2%
Wayne	16.4%	4.1%
Piute	15.8%	6.2%
Rich	15.1%	4.4%
Kane	14.0%	1.6%
No. Summit	8.3%	2.8%
San Juan	6.4%	0.5%
Emery	5.8%	0.9%
Beaver	5.6%	1.6%
Sevier	4.0%	0.5%
Millard	4.0%	0.7%
Duchesne	3.9%	0.5%
So. Sanpete	2.8%	0.8%
Grand County	2.6%	1.6%
So. Summit	1.9%	1.6%
No. Sanpete	0.2%	1.0%
Non-rural districts		
Carbon	1.4%	0.7%
Tooele County	1.4%	0.0%
Uintah	0.8%	0.0%
Box Elder	0.8%	0.0%
Iron County	0.7%	0.0%
Washington County	0.3%	0.0%
Weber	0.1%	0.0%
Juab	0.0%	1.2%
Morgan	0.0%	1.1%
Park City	0.0%	0.4%
Wasatch	0.0%	0.0%
Murray	0.0%	0.0%
Logan	0.0%	0.0%
Provo	0.0%	0.0%
Ogden City	0.0%	0.0%
Cache	0.0%	0.0%
Nebo	0.0%	0.0%
Salt Lake City	0.0%	0.0%
Canyons	0.0%	0.0%
Jordan	0.0%	0.0%
Alpine	0.0%	0.0%
Davis	0.0%	0.0%
Granite	0.0%	0.0%

Source: USOE.

percentage of the aggregate of all districts' general funds than in past years, down from above 0.7% in 2004 to below 0.6% in 2011, which is not unexpected since much of the state's student population growth is in non-rural, non-NESS areas. During the 2012 legislative session, NESS funding received the second largest increase since 1998, which should return funding to 0.7% in 2013.

In 2011, 25 districts received NESS funding (including all 18 rural districts). Nine districts received between 2-10% of their funding from NESS and seven received more than 10% (see Figure 20). Of all the districts, Tintic district received the highest portion of funding from NESS (21.7%). The districts received between \$162,616 (Weber district) and \$1,990,297 (San Juan district) in NESS funds.

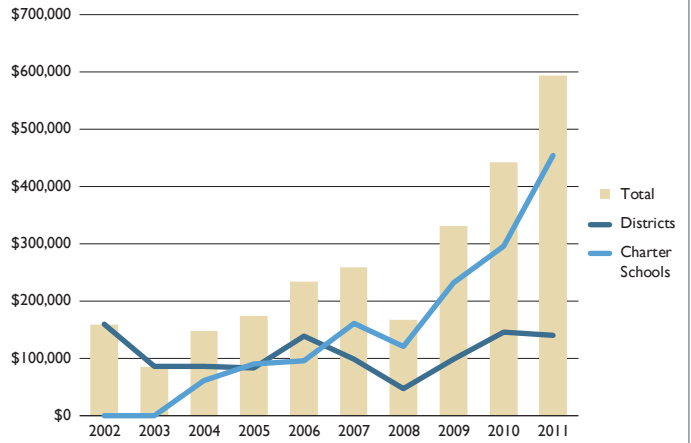
NESS is seen as vital to Utah's small schools. One superintendent stated that "If NESS decreases, we simply would not be able to cut from NESS schools - we would need to cut from non-NESS schools - or we would be unable to offer diplomas in those small schools."⁴⁶ Another administrator stated that NESS funding is "nowhere near the right amount" to adequately fund small schools.⁴⁷ Of the 33 superintendent survey respondents, 21 (63.6%) reported that they received NESS funds. Of those 21 superintendents, 18 (85.7%) reported that the funds were not adequate.

The Basic School Program also provides small district supplemental administrative revenue or "Administrative Costs." This benefited 22 districts in 2011, with between 60 and 95 additional WPU's each which equated to an additional amount per district of between \$154,620 and \$244,815. Three districts received more than 5% of their general fund revenue from these administrative funds, with Daggett receiving the highest percentage (8.7%). Four non-rural districts also received small district administrative funds. Seven districts receive between 15% and 30% of their total general fund revenue from NESS and small district administrative funds combined.

Federal Funding

Since 2000, the Secure Rural Schools Act (SRSA) has provided funding to counties with National Forest lands. In Utah, 50% of SRSA funds are directed toward counties based on the counties'

Figure 22: Rural Education Achievement Program Funding, 2002-2011

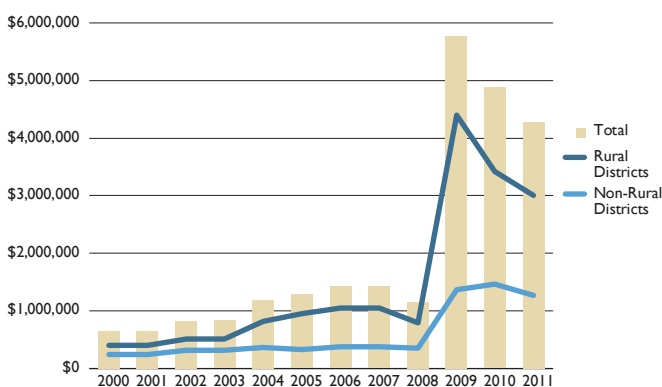


Source: U.S. Department of Education.

percentage of forest land. The county amounts are subdivided to districts according to the number of school children residing in each district that are over the age of six and under the age of 18.⁴⁸ Congress reauthorized SRSA in October 2008 for an additional four years and amended the distribution which provided significant increases in revenue for Utah counties, though at annually decreasing levels. SRSA was reauthorized for 2013 at the increased amount.

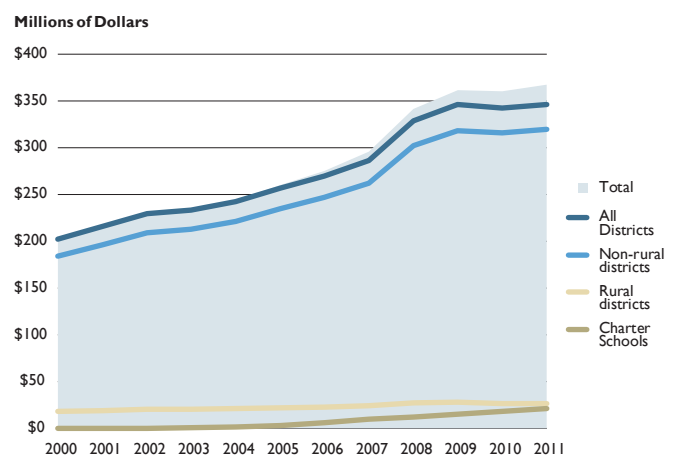
Rural schools also have an opportunity to receive funds from the Rural Education Achievement Program (REAP) via the Small, Rural School Achievement (SRS) program. These funds are available to the Local Education Areas (LEAs), which are the state's 41 districts and 80 charter schools. Due to the allocation formula which treats all LEAs the same, small charter schools are awarded a greater portion of the state's REAP funding than rural districts. While the program is small (the Utah average in 2011 for rural districts was about \$20,000 and for charters was about \$37,000 each), enrollment in the program also includes the so-called REAP-Flex authority which authorizes flexibility in spending of other "Title" funds to target funding for specific needs, from purchasing computers to hiring teachers.⁴⁹

Figure 21: Secure Rural Schools Funding (School Portion), 2000-2011



Note: An uncertain amount (though small percentage) of SRS funds are used by districts in other areas, not shown herein as SRS.
Source: USOE.

Figure 23: Total Current Expenditures, 2000-2011



Source: USOE, Superintendent's Annual Report.

Expenses

Public education revenues are distributed to districts which spend the amounts in a number of different ways. A common way of studying expenses is to use “total current expenditures,” which are for the day-to-day operation of schools, including expenditures for staff salaries and benefits, supplies, and purchased services, excluding expenditures associated with repaying debts and capital outlays (e.g., purchases of land, school construction and repair, and equipment).⁵⁰

Total current expenditures in rural districts increased by an average of 4.0% per year between 2000 and 2011, while in non-rural districts they increased by an average of 5.7%. South Summit, North Summit, Rich, Duchesne and Kane were five rural districts that increased the most over the 11 year period, and Tooele County, Park City, Wasatch, Nebo, and Washington County were the comparable five non-rural districts. Higher increases in non-rural districts are expected due to greater student population increases. South Summit and Duchesne were two of four rural districts that saw student population increases over the period, and Tooele County, Nebo, Wasatch, and Washington County were four of the five non-rural districts that saw the greatest student population increases over the period.

Over the period, rural per-pupil total current expenditures increased from \$6,105 to \$8,394 (3.2% per year), while non-rural per-pupil total current expenditures increased from \$4,413 to \$6,258 (3.6% per year). So, while student population changes accounts for some of the variance in expenditure increases between rural and non-rural districts, it does not account for all of the difference.

The only overall decrease in total current expenditures in the 2000s was in 2010 (0.3%). In that year, the 2009 American Recovery and Reinvestment Act provided stimulus funds from the federal government in reaction to the 2007-2009 recession, but state budget cuts due to the recession were larger than the stimulus funds.

Effort

Utah has been last in the nation in per-pupil funding since 1988.⁵¹ Per-pupil funding is an important measure, but because of Utah’s uniquely large student population (in proportion to total population), it is instructive to also examine funding effort in other ways. One of the best methods to understand effort is to calculate public education revenues per \$1,000 of personal income.⁵² This measure shows the proportion of Utah’s collective income that is dedicated to funding K-12 schools, and it can be compared to other states to understand whether Utahns bear a higher burden of funding schools because of the proportionally larger student population. In fact, 20 years ago it was true that Utahns paid more than the typical American taxpayer to fund schools; Utah’s K-12 education funding effort was ranked in the top ten nationally in the early 1990s but fell to below the national average by 2003 and now stands at 29th in the nation (the most recent data for ranking are from 2010).⁵³

The decline in funding effort resulted from three major factors: large property tax cuts in the mid-1990s, reduced reliance on the state-mandated “basic levy” property tax, and shifts of income tax revenue to other budgetary needs after the constitutional earmark of income taxes for K-12 education was relaxed by voters in 1996.⁵⁴ That earmarking change allowed income taxes to be shared with higher education, but as income tax revenue was added to the higher

education budget, general fund monies were taken away and used for other budget priorities.

In terms of tax rates, non-rural districts exert more effort than rural districts: the average tax rate of rural districts was 0.0064% compared to 0.0075% in non-rural districts.⁵⁵ While tax rates are often used as a measure of local effort, this might be an over-simplification. An alternative measure of local effort is the percentage of tax collected per student. Property tax collected per student - compared to the average - was higher for rural districts than non-rural districts, equaling 115.1% of the average and 88.2% of the average, respectively.

EDUCATIONAL OUTPUTS: MAJOR FINDINGS

Educational inputs are designed to positively affect educational outcomes or outputs. The outputs included in this evaluation cover all stages of Utah students’ education including post-secondary education. Rural students tend to have higher annual state exam scores and exam score progress, but lower ACT scores. Rural students tend to have higher graduation rates, but that difference is narrowing. Lastly, rural students tend to have lower college entrance rates, but their retention rates are similar to other types of students.

Criterion-Referenced Tests

Adequate Yearly Progress (AYP) is the federal system under NCLB that measures math and language arts proficiency and, as the name implies, progress. U-PASS was the state system (on which the AYP scores are based) which additionally included science scores and progress. This study evaluated the U-PASS criterion-referenced test (CRT) data.

The language arts CRTs assess 3rd-11th grade language arts classes. The science CRTs assess 4th-8th grade science, Earth Systems,

Figure 24: U-PASS Proficiency and Attendance

	Percent Proficient			Attendance Rate
	Language Arts	Math	Science	
Rural	82.0	75.9	74.5	85.4
Town	82.0	70.1	73.0	84.4
Suburb	79.8	70.0	69.9	86.1
City	75.3	65.8	62.7	85.2
Non-NESS	79.5	70.5	69.9	85.8
NESS	81.8	70.4	71.5	83.8

Source: USOE, 2011 UPASS.

Figure 25: Statistically Significant U-PASS Proficiency Differences

	Rural	Town	Suburb	City
Rural	x	none	Math, Science	Lang. Arts, Math, Science
Town	none	x	none	Lang. Arts, Science
Suburb	Math, Science	none	x	Lang. Arts, Science
City	Lang. Arts, Math, Science	Lang. Arts, Science	Lang. Arts, Science	x

Note: All reported differences are statistically significant at 99% except the difference between rural and suburb CRT scores for science which is significant at 95%.

Source: USOE, 2011 UPASS; calculations by Utah Foundation.

Figure 26: U-PASS Progress Levels

	Progress Score			
	Language Arts	Math	Science	Attendance
Rural	205.7	201.6	205.1	178.4
Town	205.6	193.2	203.8	176.7
Suburb	200.7	192.7	200.5	178.7
City	198.2	189.1	198.8	178.1
Non-NESS	201.5	194.5	202.1	178.6
NESS	206.9	188.8	194.4	175.6

Note: A progress score of between 0 and 179 is “low,” between 180 and 204 is “medium,” and 205 or higher is “high.”

Source: USOE, 2011 UPASS.

Figure 27: Statistically Significant U-PASS Progress Differences

	Rural	Town	Suburb	City
Rural	x	none	Lang. Arts, Math	Lang. Arts, Math
Town	none	x	none	Lang. Arts, Math
Suburb	Lang. Arts, Math	none	x	none
City	Lang. Arts, Math	Lang. Arts	none	x

Note: All reported differences are statistically significant at 99% except the difference between rural and suburb CRT progress for math which is significant at 95%.

Source: USOE, 2011 UPASS; calculations by Utah Foundation.

Biology, Chemistry, and Physics. The math CRTs assess 3rd-7th grade math, Pre-Algebra, Geometry, and Algebra I and II.

Comparing performance based upon CRT scores is difficult, even when controlling for demographics such as race/ethnicity, mobility, and income. Part of the problem is that the top performing students may not always be included in testing results. For instance, students in AP English are not tested with their cohort for the language arts CRTs. This could artificially decrease a school’s scores in comparison to schools without AP courses.

One way to compensate for some of the difficulties in comparing scores between schools or within school levels is to combine elementary and secondary schools in groups, like NESS/non-NESS and the NCES locale groups. An even better way than aggregating proficiency scores may simply be to measure “progress,” which is detailed below.

NESS schools had slightly higher language arts and science scores than non-NESS schools. Non-NESS schools had slightly higher proficiency scores (the percent of students achieving proficiency on the exams) in math. Non-NESS schools also had slightly higher attendance rates. However, none of the differences between these two groups were statistically significant.

For the language arts CRT, rural and town students showed the highest proficiency (82.0% each), followed by suburban schools (79.8%) and city schools (75.3%). For the math CRTs, rural schools showed the highest proficiency (75.9%), and again city schools were the lowest (65.8%). Town and suburban schools fell in the middle (70.1% and 70.0%, respectively). Rural students also performed the best on science CRTs, with a 74.5% proficiency rate. Town schools were a bit behind (73.0%) with suburban schools just below the total average (69.9%). City schools had the lowest proficiency score of 62.7%. Suburban schools had the highest attendance rates, followed

closely by rural, city, and town schools. None of the differences between attendance rates of the locales were statistically significant.

U-PASS progress scores are used to show improvement, which is intended to help eliminate the advantage certain schools, districts and other groups may have in proficiency comparisons. U-PASS Progress measures the movement between CRT scores on a scale from 0 to 375. Progress scores are given based upon the progression between levels. In terms of progress, a school with a score between 0 and 179 is “low,” between 180 and 204 is “medium,” and 205 or higher is “high.” Progress is determined for any student who is enrolled for a whole year (160 or more days), and broken into subgroups.

When comparing NESS and non-NESS CRT progress, the small schools scored higher in language exams. Non-NESS schools had higher progress scores in math and science as well as attendance. However, none of the differences were statistically significant.

Rural and town locales were “high” performers for language arts while suburb and city locales were “medium.” Rural schools had the most progress in math with a score of 201.6, and city schools had the lowest with 189.1. All locales were “medium” performers. The average progress for rural schools for science was “high” performance. Town, suburban and city schools’ average was “medium.” All locales were “medium” performers for attendance.

Utah received an AYP waiver on June 29, 2012, to be free from the No Child Left Behind measurement and program improvement sanctions.⁵⁶ In exchange for the waiver, Utah had to implement a plan to address college and career readiness for all students, school accountability, teacher evaluation, and administrative burdens on schools.⁵⁷ This new plan, Utah Comprehensive Accountability System (UCAS) is taking the place of both the AYP and U-PASS beginning in 2012.

College Entrance Exams

The ACT has been more widely taken in Utah as a college entrance exam than the SAT, with about 85% of Utah high school seniors taking this exam in 2012.⁵⁸ Utah’s composite score of 20.7 was 1.9% lower than the U.S. score of 21.1.

Average composite ACT scores in 2010 (the most recent year for which USOE had the most complete data) were higher in non-rural districts (20.6) than rural districts (19.8), a 4.0% difference.⁵⁹ This also held true when comparing locale-grouped scores, with suburban schools being the highest (21.2), followed by

Figure 28: Average ACT Scores, 2012 Graduating Class

	Utah	U.S.
English	20	20.5
Mathematics	20.3	21.1
Reading	21.3	21.3
Science	20.8	20.9
Composite	20.7	21.1

Source: ACT.

Figure 29: Average ACT Scores by Rural and Non-rural Districts, 2010

	Number of Districts	Number of Schools	Average ACT Score
Rural	18	36	19.6
Non-Rural	23	86	20.7

Source: ACT.

Figure 30: Average ACT Scores by Locale and NESS Status, 2010

	Number of Schools	Average ACT Score
Rural	39	19.9
Town	25	20.2
Suburb	38	21.2
City	20	20.1
NESS	34	19.6
Non-NESS	88	20.7
Non-NESS (without suburban schools)	50	20.3

Source: ACT.

town, city and rural schools (20.2, 20.1 and 19.9 respectively).⁶⁰ When comparing school locales with one another, the only statistically significant difference was between rural and suburban schools,⁶¹ though the difference between suburban and city or town schools' ACT scores was nearly significant.⁶²

NESS schools had an average ACT score of 19.6, lower than non-NESS schools score of 20.7, a 5.6% difference.⁶³ When suburban schools were removed, the difference between NESS and non-NESS ACT scores was diminished, and the significance was somewhat reduced.⁶⁴ This shows that - while suburban schools did inflate non-NESS scores - the difference between NESS and non-NESS schools was not only caused by suburban schools.

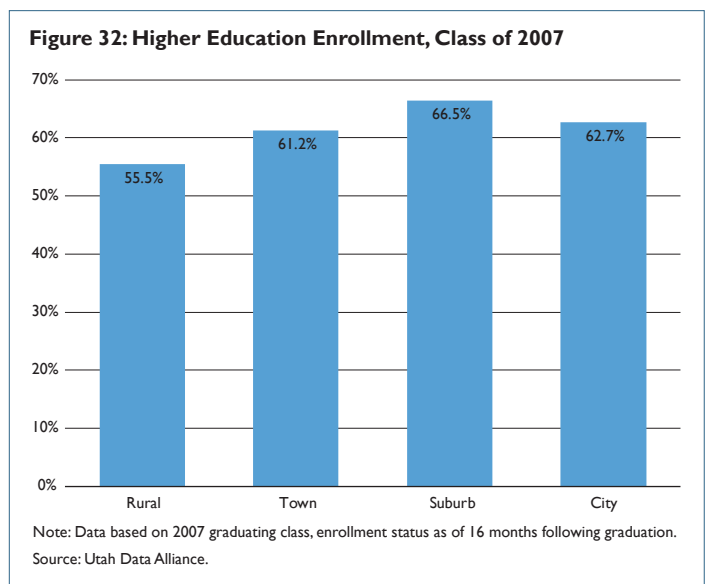
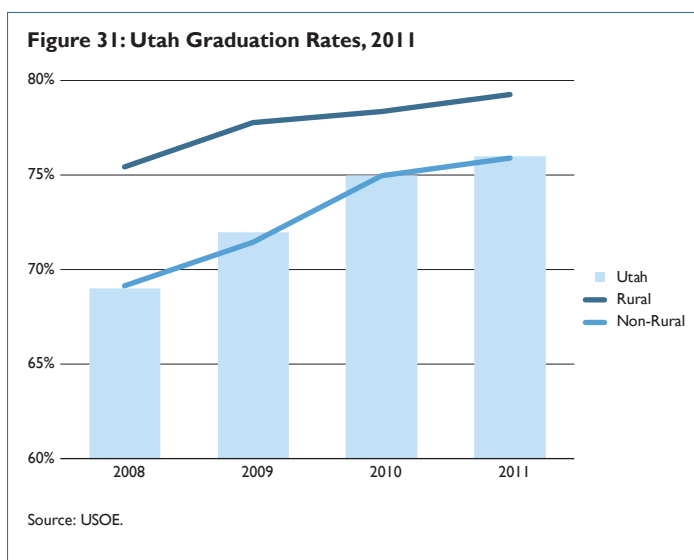
Utah's average 2012 composite ACT score was 20.7, below the national average of 21.1.⁶⁵ The lowest composites in the nation were in Mississippi (18.7) Arizona, D.C., Tennessee (all 19.7). The highest scores were in Massachusetts (24.1), New Hampshire and Connecticut (23.8), and Maine and New Jersey (23.4).

Among the 22 states with over 70% of graduates tested, Utah falls near the average ACT score. Among all states, those with the highest scores (including all those with a composite score of 23 and higher) had fewer than 50% of their students take the ACT.

This national analysis can help put the difference between rural and non-rural scores into some context. While the difference between rural and non-rural schools was only 4.0%, this could be the difference between whether or not a student would be able to compete nationally and would be accepted to college. In Utah's higher education institutions without open-enrollment policies, the average scores for rural and non-rural districts fell near the bottom 25% of enrolled students (and far below that of BYU). While the institutions do not release data on the students with the lowest entrance exam scores, the one to two point difference between rural and non-rural students could mean all the difference between acceptance and rejection.

Graduation and Dropout Rates

When they reach the age of 16, Utah's high school students have the option to graduate (if they have enough credits) or drop out of school.⁶⁶ Utah's graduation rate of 76.1% in 2011 was higher than the national average. In rural districts the graduation rate was 79.3% and



in non-rural districts was 75.9%. This difference has narrowed from 6.3 percentage points in 2008 to 3.4 points in 2011. The narrowing difference between rural and non-rural districts' graduation rates likely due to the upward trend by all non-rural districts since 2008 in conjunction with a higher level of rate variability in rural areas, where six district had declining rates over the four-year period.

When running a statistical regression for graduation rates, controlling for race/ethnicity and socioeconomic status (percent of students who qualify for free and reduced-price lunch in district), rurality increases a district's graduation rate by 7.7%. Conversely, each 10% increase of free and reduced lunch decreases graduation rate by 3.2%. Both of these factors are statistically significant.⁶⁷ Each 10% increase of racial/ethnic minorities decreases graduation rate by 0.2%, though this factor is not statistically significant.

These results suggest rurality does increase the likelihood of graduating. The principal at Bryce Valley high school stated a very common explanation for this among rural administrations: "very few kids fall through the cracks... teachers know exactly what each kid needs to succeed." This is the "community" advantage that small schools may have over non-rural schools. Other possible supports for rural graduation rates are rural students' involvement in extracurricular activities, possibly keeping the involved students from dropping out.⁶⁸ Additionally, there may be fewer opportunities in some rural districts for students who have dropped out of school, making it a less attractive option than staying in school.

Post-Secondary Education

A slightly higher percentage of non-rural students expressed that they would attend college or job training than rural students (85.2% to 83.8%, respectively), though the difference is not statistically significant. Of these students, 61% of rural students and 68% of non-rural students, intended to go to four-year colleges, and 21% of rural students and 14% of non-rural students planned to attend two-year colleges.⁶⁹ An additional 8% of rural students and 10% of non-rural students planned on beginning with 2-year colleges and then moving on to 4-year schools, and 7% of rural students and 5% of non-rural students intended to pursue one-year job training following high school. A small number of students marked "other"

for their type of college or job training. The “other” responses in order of frequency included military, a shorter term of job training, an LDS mission, and undecided.

When looking specifically at seniors’ intentions to enroll in college, the data show that rural students (75%) slightly trail non-rural students (78%). Their plans do not necessarily translate into reality. Excluding alternative high schools, the enrollment rate of 55.5% for rural students falls short of their intentions, and far short of their town (61.2%), suburb (66.5%), and city (62.7%) counterparts. This spread narrows by a couple percentage points when including alternative schools, with decreases in town, suburban and city school averages.

Of those students who enroll in within 16 months of graduation from high school, just over half completed at least one year’s worth of college credit within two years of enrollment. The difference in retention between the four locales is narrow, with highest retention for town students (54.9%), followed by suburban students (54.8%), rural students (53.8%) and city students (53.4%)

CONCLUSION

A 2011 report by the Legislative Fiscal Analyst’s Office stated that “Utah is one of only a handful of states not to have its funding model challenged or restructured through the judicial process.”⁷⁰ USOE takes this lack of a legal challenge as support that the “status of equity in Utah schools is self-evident.”⁷¹ Nonetheless, equity is a subjective concept, whether considering general education funding or more specific rural and non-rural funding issues.

A dearth of course offerings and lower than average college enrollment rates that pose a great challenge to rural communities. Despite these and other disadvantages faced by rural schools, Utah’s rural students seem to be doing all right. For instance, they perform comparatively well on their annual state exams and graduate from high school at higher rates. Many teachers, principals and superintendents believe that the advantages of “rural schools are worth the tradeoff,” even though the students might not be getting the opportunities of non-rural schools.⁷²

Nonetheless, any such rural advantage is in peril since small school and district viability is tenuously tied to budgets which are already as lean as possible in these areas. According to rural principals and superintendents, cuts at the federal or the state levels would impact rural schools the most. NESS funding is seen as rural schools’ salvation, and rural schools stakeholders are looking to increase such amounts by a significant amount. But with decreasing representation at the State Capitol, such increases are in question.

Governor Herbert has set a goal of raising the education level so that 66% people between the ages of 20 and 64 have a postsecondary degree or certificate.⁷³ While the rural community feels that “people just don’t think about rural schools when they are making the rules,”⁷⁴ attention to rural issues and NESS funding are vital to equitably reaching the Governor’s goal.

ENDNOTES

- 1 National Center for Education Statistics. http://nces.ed.gov/ccd/rural_locales.asp
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- 6 Ladd, Helen F., Rosemary Chalk, and Janet S. Hansen, Equity and Adequacy in Education Finance: Issues and Perspectives, The National Academies Press, 1999. www.nap.edu/openbook.php?record_id=6166
- 7 Rural/non-rural significant at 90% (p=0.091). NESS/non-NESS nearly significant at 90% (p=0.104).
- 8 Note: the options for choosing the number of students per computer were “less than one,” “one,” “two,” “three to five,” and “six or more.” For the statistical analysis the categories were recoded as 0.5, 1, 2, 4, and 8. The NESS/non-NESS difference was significant at 95% (p=0.011).
- 9 Note: the computer questions were analyzed using a Plum Ordinal Regression model.
- 10 Larry Newton, former USOE finance director.
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- 12 Significant at 95% (Pearson chi-square p=0.028).
- 13 Carroll, Thomas G., and Elizabeth Foster, Who Will Teach? Why Experience Matters, National Commission on Teaching and America’s Future, January 2010.
- 14 Difference significant at 99% (p=0.004)
- 15 Differences significant at 90% and 99% (p=0.069 and p=0.000, respectively)
- 16 Rurality is statistically significant at 95% (p=0.012) and growth at 99% (p=0.002).
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- 21 National Commission on Teaching and America’s Future, “Who Will Teach? Experience Matters” January 2010. <http://nctaf.org/wp-content/uploads/2012/01/NCTAF-Who-Will-Teach-Experience-Matters-2010-Report.pdf>
- 22 Statistically significant at 99% (Pearson chi-square; p=0.001).
- 23 Pearson chi-square; p=0.002, p=0.007, p=0.018, p=0.024, p=0.005, p=0.019, respectively.
- 24 2010 figures; Utah decreased to \$45,329 in 2011.
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- 26 Administrative compensation differences are significant; the average of the median salaries in rural districts was \$68,228 while in non-rural districts it was \$78,400 Significant at 99% (p=0.000).
- 27 USOE. <http://www.schools.utah.gov/cte/about.html>
- 28 Significant at nearly 99%; Mann Whitney Test.
- 29 Statistically significant at nearly 99% (Pearson chi-square test).

- 30 Significant at 99% (Pearson chi-square: $p=0.000$ and $p=0.001$, respectively).
- 31 Rural Utah principal.
- 32 Piute High School Principal Sylvester and South Sevier High School Principal Bailey, respectively.
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- 34 Statistically significant at 95% (Pearson chi-square: $p=0.031$).
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- 57 Salt Lake Tribune, Utah granted waiver to No Child Left Behind law, June 30, 2012. <http://www.sltrib.com/sltrib/news/54403500-78/utah-schools-waiver-education.html.csp>
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- 59 Statistically significant at 99%.
- 60 Statistically significant at 99%.
- 61 Significant at 99%, $p=0.005$.
- 62 Nearly significant at 90% ($p=0.116$ and $p=0.133$, respectively).
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- 74 Rural high school principal.

This research report was written by Utah Foundation Research Analyst Shawn Teigen, with assistance from Research Director Morgan Lyon Cotti, Ph.D., Utah Foundation President Stephen Hershey Kroes, and Research Interns Michael Merrill and Sarah Wald. Comments or questions should be directed to Mr. Teigen at (801) 355-1400 or by email at shawn@utahfoundation.org.

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