ALLIANCE FOR CHOICE IN EDUCATION

MONTANA

Academic Based Report

2015-16 Evaluation Report

Quantitative Research Evaluation & Measurement January 15, 2017

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Executive Summary

The 2015-16 ACE Montana Report highlights the impacts of sending a child to a school of the parents' choice. In addition to measuring school attitudes and satisfaction, this report examines academic proficiency as measured by standardized tests, attendance, and per-pupil costs of attending a private school.

The top benefits to ACE students include:

- **Higher proficiency rates in Math** ACE students across all grade levels in 2016 reported higher proficiency rates in Math than the most recent year Montana public school students and their low-income peers had their findings reported.
- Higher ACT scores compared to Montana students for two years Rising seniors receiving an ACE scholarship outperformed all students across the state in all ACT subject areas over the past two years, indicating they are more college-ready than Montana public school students.
- Students are in school longer Higher proficiency rates and ACT scores are the result of ACE students spending more on their studies. Private school students in school an average of one hour more each day; which translates into their attending school nearly 24 days more than their public school peers.
- Scholars have better attendance than private school students for most grade levels, ACE scholars have higher rates of attendance than their private school peers, and a higher overall attendance rate (95.1%) than private school students (93.3%).

Key findings on parents and families include:

- ACE Parents have Higher Educational Attainment than Montana Low Income Families

 a higher proportion of ACE parents have completed their college education than lowincome families in Montana.
- ACE families are stable ACE parents spent on average 6.9 years at their same address, and have remained at their same jobs for an average of 6.2 years, showing they do not experience high mobility.
- Families make strong contributions to their child's educations on average, parents devote between 4.6% and 9% of their family incomes, or 20.7% to 30.4% of their household's per capita income to tuition payments.

Key finding for school buildings is:

• **Per Pupil costs are much lower than public schools** –ACE schools spend over \$1491 less for each pupil compared to Montana public schools. Furthermore, costs are borne by the family, ACE Scholarships, and a myriad of school discounts and work programs. This broad-based approach to funding signals to children that multiple stakeholders are invested in their education.



Methodology

School and student data were collected through ACE as authorized in the scholarship agreement. Data relating to attendance, test scores, and graduation come from school administrators. Data are from the 2015-16 academic year. All individual identifiers were masked and no master lists are maintained, with only aggregate data being reported. Parent and student perception and opinion data were collected directly by ACE or through the assistance with the schools. All comparative data were derived from open-access data sets, available at the National Center of Education Statistics, the US Census, Bureau of Labor Statistics, and the Montana Office of Public Instruction. All student data collected for this report remain the property of ACE and were analyzed according to the ethics and standards outlined and promoted by the American Evaluation Association.

Public access data were downloaded for purposes of comparison to ACE data. School data center on school district boundaries and national data –such as Census information or median incomes --use county boundaries and metropolitan statistical boundaries. Public schools make distinctions between elementary and middle school, or are combined and labeled K-8.

Analytical techniques include basic descriptive analyses for demographic information, means testing for group progress such as grade level or income using ANOVA and chi-square tests. Data were analyzed using Excel and SPSS V.21 and AMOS statistical software. Key variables include: gender, ethnicity, age, grade level, household size and composition, annual income. Additionally, parent, teacher, and student surveys contain critical elements of school satisfaction, volunteerism, voting habits, educational level, trust, and expectations of education. Social science research allows for the comparison across categorical lines (gender, ethnicity, etc.) with a minimum sample size of 30 (Hair, Anderson, Tatham & Black, 1998).

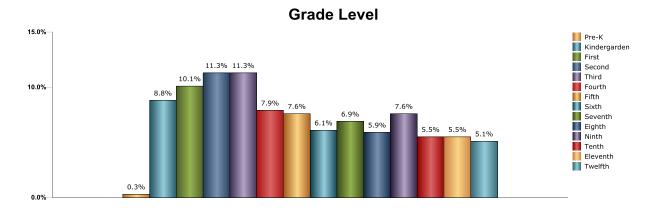
Missing data at the individual and group level were dealt with using approximation and matched interpolation. Since missing data were both random (at the individual level) and non-random (group level), two separate methodologies were applied. First, for random missing data, listwise deletion was applied to separate calculations (Hair and Tatham, 2001). Second, for non-random missing data, dummy variables were created for between-group comparisons (group with responses, group without responses). Analyses were then performed between the two groups to account for response bias, which were then incorporated into the final analyses (Cohen and Cohen, 1983).

All findings, unless stipulated, are from the most recent (2015-16) academic year for both comparison data and findings from ACE students and parents.



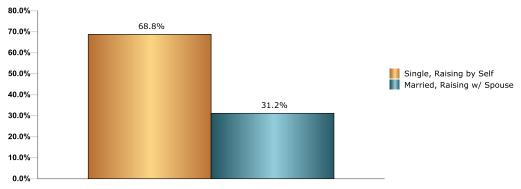
ACE Student Demographics

The ACE scholarship is available to students in all grade levels, as long as they qualify for the scholarship. The distribution of students receiving the scholarship can be seen below.¹



Basic demographic descriptions of students receiving the ACE Scholarship are:

- There were 750 children in the program in Montana during the 2015-16 school year.
- A slightly larger number of ACE Scholarship children are girls (53%).
- Most than three-quarters of children are attending an elementary (K-8) school (76.4%).
- More than 23% of the ACE students left the program, most having graduated or are leaving after their 8th grade year.²
- Of those who responded, Most ACE children are being raised in single-parent households (68.8%). Due to the high proportion of families who did not respond, it is difficult to ascertain whether parents raise their children by themselves, or share custody.



Raising Child Status

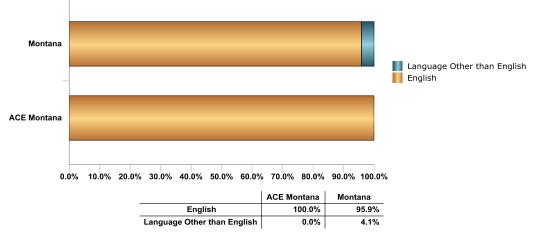
These account for only 343 responses. Missing data = 407 Households.

¹ Numbers are rounded to the next largest tenth of a percentage point.

² Grade level of the school has maxed-out.

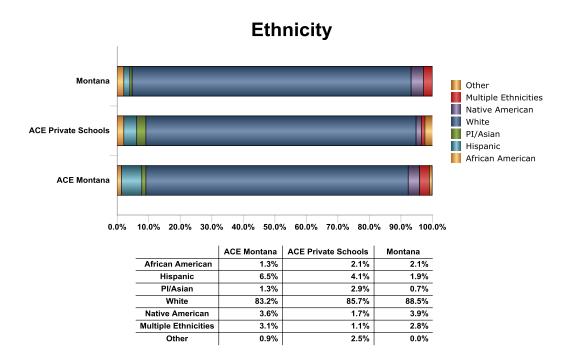


Language Spoken at Home





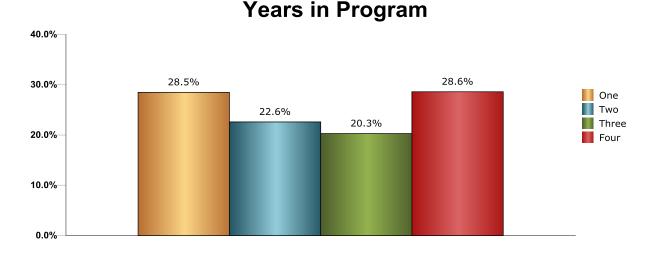
All ACE families prefer speaking English at home, slightly higher than the rate of Montana residents (100% to 96%). Other languages aside from English comprise the remaining 4.1% of speakers in Montana, which no ACE family reported speaking³. Given the demographics of the state, it is likely these other languages are Native American languages (U.S. Census Bureau, 2016).



³ Children who come from homes where another language aside from English is spoken often underperform next to their peers (Hoff, 2013).



ACE Montana students are more diverse than students in both Montana public schools and at the private schools ACE students are enrolled. Compared to the student populations of private schools and Montana public schools, 16.7% of ACE recipients identify with a minority population – higher than the state of Montana and at the ACE private schools.



Students spend an average of 2.49 years with the ACE program. The chart (above) shows how long students have been with the program, as the most students are either four-year veterans (28.6%), or are new initiates (28.5%).

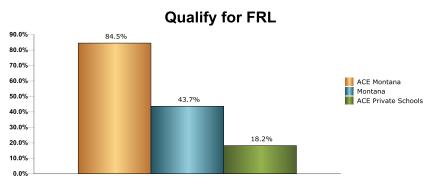
Students receiving ACE Scholarships come from low-income homes and typically qualify for the Federal Free and Reduced Lunch (FRL) program⁴ – which serves as a proxy for low-income status in education. Similar to traditional and charter public schools, ACE private schools have a mix of students from different economic backgrounds. Attending a school with youth from higher income households has "a significant and substantive" impact on student achievement (Caldas & Bankston, 1997). This is profound for low-income students, for most attend schools that are unequal in quality to schools found in higher income areas.

Children raised in homes with lower incomes are more likely to perform worse on standardized tests, have higher rates of non-attendance, and lower graduation rates (Morrissey, Hutchinson & Winsler, 2013; Putnam, 2015). As evidence for this long-standing phenomenon, in his latest book *Our Kids* Robert Putnam (2015) compared two schools, one with a high proportion of students participating in the Free and Reduced Lunch Program (84%), and the other school with a 23% FRL rate. The school with the lower FRL rate performed better academically and on fitness tests than the school with a higher FRL rate. In addition, research has shown high

⁴ Approximately 15.5% of ACE Montana scholars live in households where income exceeds the FRL qualification line. Because families begin to earn more, the longer their children remain at their private school, ACE extends the scholarship on a case-by-case basis for the remainder of the school year. On average, families who would not qualify for the FRL program earn \$22,000.00 more each year or slightly more than \$5100.00 more *per capita*.



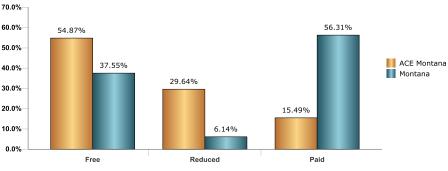
income students attend highly selective colleges and universities in disproportionately large numbers (Reardon, 2013).



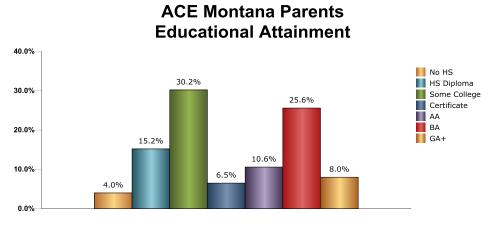
ACE scholarships target low-income families (those that would qualify for the Federal Free and Reduced Lunch program in the public schools), and those who most educators and researchers would agree are at the highest risk of dropping out of school

(NCES, 2015). According to the Montana Office of Public Instruction (2016), 43.7% of all students qualified for Free (37.55%) or Reduced (6.14%) lunches. Approximately 18.2% of all

private school students where ACE students attend qualify for this program. The chart at right shows the participation rate, broken down by Freeand Reducedeligibility among ACE and public school participants.



Free and Reduced Lunch Status

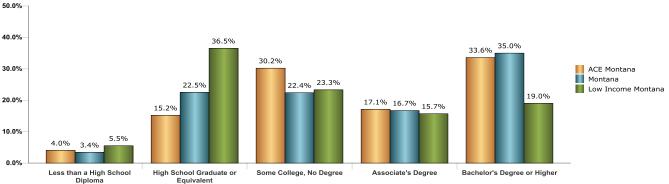


Income and education march hand-in-glove, as research shows there is a strong correlation between the educational level of parents and their children, most notably, the educational attainment of mothers (Chevalier, et al., 2013).⁵ The chart

above shows the educational attainment of ACE parents. More than 44% of ACE parents hold a college degree, while 25.6% have a Bachelor's Degree.

⁵ Research shows that fathers' education plays an integral role as well, especially with the amount of time spent in education, but mothers are typically the caretakers, and have a stronger effect (Chevalier, et al., 2013; Fahey, 2008; Lareau, 2003).





Compared to parents of school-aged children in the Montana, ACE parents are slightly better educated. A lower proportion of ACE parents have only a high school diploma (15.2%), as compared to Montana families (22.5%). Further, a slightly lower proportion of ACE parents have a Bachelor's Degree than parents across the state (33.6% to 35.0%, respectively). Further, ACE families have higher educational attainment than their low-income peers, as a higher proportion of ACE families have a Bachelor's Degree, Associate's Degree, and Some College

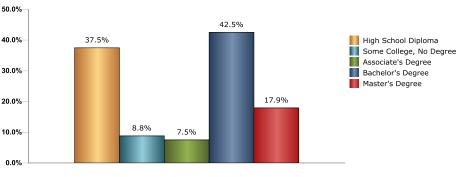
Education (Current Population Survey, 2016; American Community Survey, 2015).

2015 National Unemployment Rate 9.0% 8.0% 8.0% 7.0% 6.0% 4% 5.0% 5.0% National Unemployment Rates 3.8% 4.0% 2.4% 2.8% 3.0% 2.0% 1.0% 0.0% No High School High School Some College, Associate's Bachelor's Master's Diploma Diploma No Degree Degree Degree

Parents' educational level is a strong predictor of student performance and household income. Not only are longterm aspirations improved for children who have at least one parent with a college degree (Fan & Chen, 2001), but home-school relationships are stronger where parents are more

educated (Epstein, 2000). Other contributors to student success include a decrease in violent behaviors (Eron, Walder & Lefkowitz, 1971; Huesmann, et al, 2002); a more stable home environment (Pew Research Center, 2015). Further, families with higher levels of education often experience lower rates of unemployment

Wage Gains-Next Highest Educational Attainment



(above) and often have higher wages (right). For example, the median wage difference in 2015



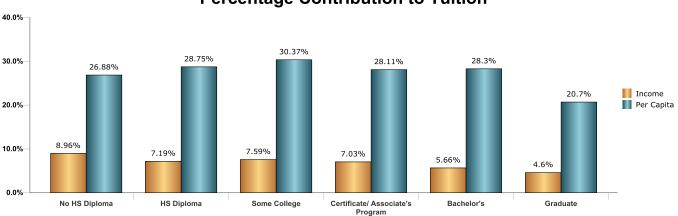
Parents' Educational Attainment

for an individual with a high school diploma is 37.5% higher than the median wages of an individual without a high school diploma (Bureau of Labor Statistics, 2016). Finally, research has shown the age a parent left their educations has an impact on the probability a student will continue their education (Chevalier et al., 2013).

ACE families have reproduced these findings, as ACE parents with a Bachelor's or Graduate Degree earn approximately \$18,000 more than their counterparts without a high school diploma (table, below).

ACE Parents' Educational Attainment	Family Contribution to Tuition	Per Capita	Family Income
No HS Diploma	\$1,800.00	\$6,697.17	\$20,091.50
HS Diploma	\$1,618.50	\$5,629.63	\$22,518.50
Some College	\$1,818.50	\$5,986.88	\$23,947.50
Certificate/Associate's Program	\$1,914.00	\$6,809.00	\$27,236.00
Bachelor's	\$2,160.00	\$7,631.70	\$38,158.50
Graduate	\$1,755.00	\$8,476.89	\$38,146.00

The higher incomes and higher per capita of ACE families manifests itself in higher contributions to their child's tuition. ACE parents with a Bachelor's degree contribute on average \$360 more than their counterparts who do not have a high school diploma. Despite these differences, all ACE parents make similar contributions to their child's education. These contributions are between 4.6% to almost 9% of their family's income, or 20.7% to 30.4% of their per capita (respective of educational attainment).



Percentage Contribution to Tuition

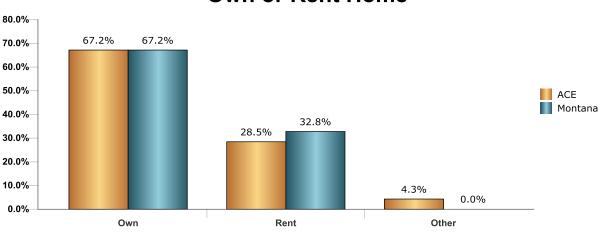


ACE households are larger than similar households in Montana. Looking at the table below, it is evident that ACE household incomes are considerably lower by as much as \$32,390 than their Montana peers. At the same time, they are contributing a substantial amount of their family's income for their child/children's tuition, even though their per capita is 3.5 times lower than families in Montana. This means they have fewer resources per family member; yet they invest more towards tuition. This fact speaks to the degree to which they value education.

Median Household Si	ze	Median Household Income	Median Per Capita
ACE	4.00	\$28,881	\$7,488
Montana	3.6	\$61,271	\$26,381

ACE families in Montana own their own homes at a rate similar to the home ownership rate in Montana (67.2%) Slightly more Montana residents rent their homes (32.8%) than ACE families (28.5%). More than four percent of ACE families selected 'Other'.

According to the U.S. Census Bureau (2016), the average rental rate in Montana between 2011 and 2015 was \$711, while the expenses of a home with a mortgage is \$1,294. However, the expenses of owning a home without a mortgage is \$387 during the same five-year period. This presents a slight discrepancy because most ACE scholars own their home rather than rent. This insinuates ACE Montana families are inheriting their homes. To answer this question, it may be necessary to inquire whether they inherited their homes, pay a mortgage, etc.

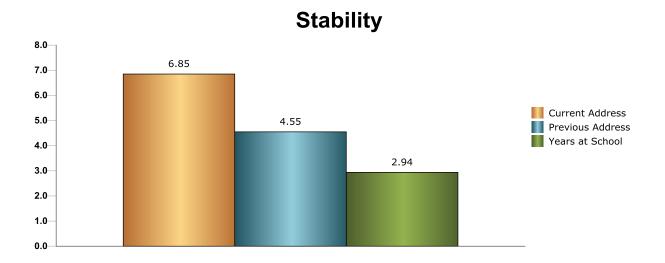


Own or Rent Home

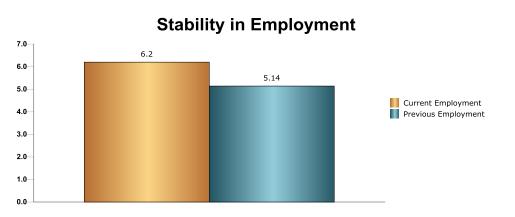


Missing Data = 399.

Stability



ACE Montana families have stayed at their current addresses longer than they have spent at their current school. They also stayed at their previous addresses longer than they spent at their current school, indicating it is very likely they began their current schooling while living at their current home – showing these families are very stable. Research has shown student mobility has a negative impact on student achievement as they try to cope to a new school (Schwartz et al., 2015).

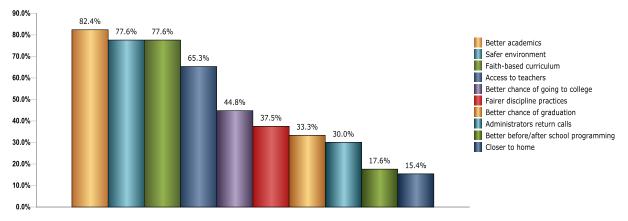


ACE Montana families also demonstrate strong stability in their work environments. U.S. workers spend 4.2 years with the same employer; however,

individuals without a high school diploma stay with an employer an average of 2.8 years (BLS, 2016). In addition, the time they spent at their current and previous jobs is similar to their work history. They spent approximately 7 additional months working at their previous job than they lived at their previous address, and almost 8 months more living at their current address than working at their current job – indicating a high degree of stability in their work lives and in their home life as well. These findings may indicate they move to a new home some months after starting work with a new employer.

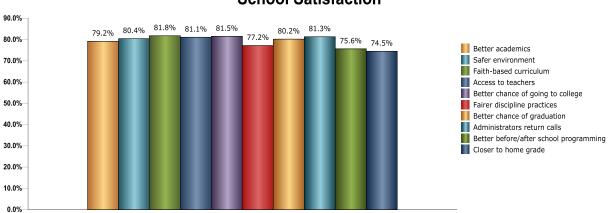


Selection & Satisfaction



Reasons to Select a Private School

Most ACE parents selected their child's school because they want better academics (82.4%), a safer environment (77.6%), and the faith-based curriculum offered (77.6%). A low proportion of parents chose these schools because they were close to home (15.4%), or had better before/after school programming (17.6%). In addition, 44.8% of parents selected these schools because their child had a better chance of going to college, and another 33.3% selected the school because their children has a better chance to graduate from high school.



School Satisfaction

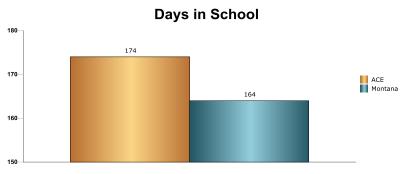
Once their child is enrolled, parent satisfaction of the school is strong for all categories (chart above).



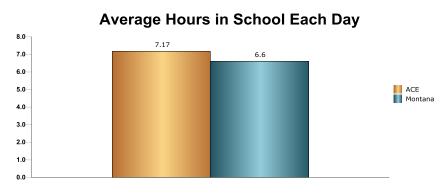
Student Academics

Attendance

The Montana Office of Public Instruction (2015) stipulates a minimum of 1,080 hours annually, which translates to approximately 164 days each year. Over the previous five decades, research –and common sense --shows that when children attend school



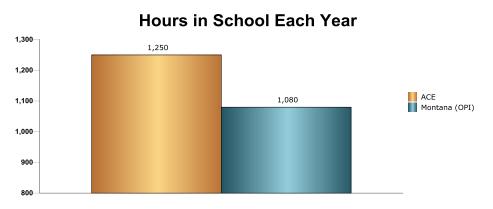
more, they learn more and are more likely to graduate. ACE scholars are in class an average of 174 days each year.



In addition to being in school more days, ACE children spend more hours each day – an average of 7.17 hours each day – 34 minutes more than Montana public school students (Education Commission of the States, 2011; National Center for

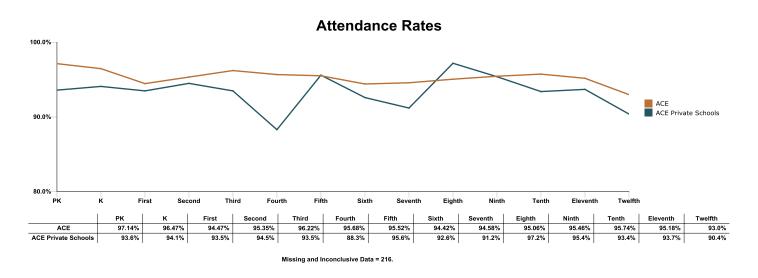
Education Statistics, 2014).

According to the Montana Office of Public Instruction (2015) and the Education Commission of the States (2011), students spend approximately 1080 hours in school each year. As a result, ACE students spend 170 more hours in school each year than their Montana peers. This

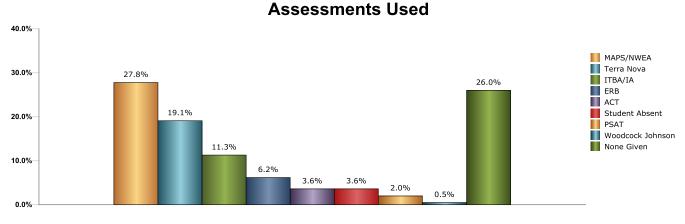


translates to 8.5 to 23.7 days more in school. Research has shown the achievement gap narrows when students are in school, but widens when they are out of school – serving as a detriment to low-income public school students (Reardon, 2013).





Holding schools open for students only works when students actually attend. Attendance for ACE children is very strong across all grade levels, with ACE students having an average attendance rate of 95.24% - missing an average of 8 days of school each year. ACE students show more consistent attendance compared to their private school peers.

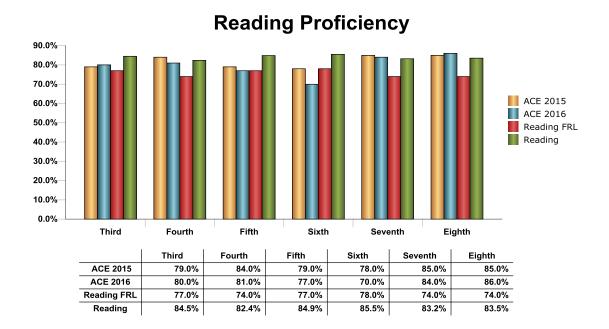


Academic Proficiency

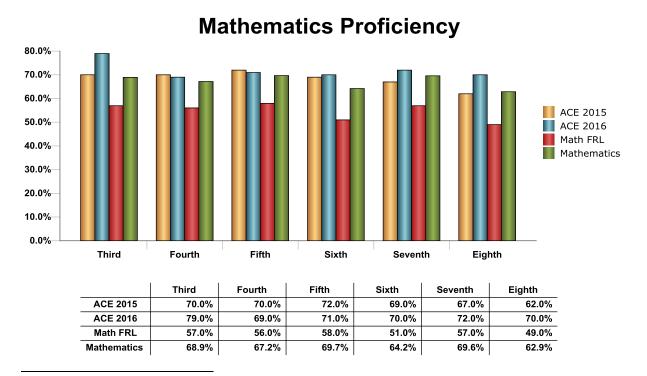
Missing Data = 199.

All ACE private schools use standardized tests to measure student achievement, and each of these tests have been in use for a number of decades. Individual scores were standardized with the mean set at the proficiency level, and percentages were calculated to determine overall proficiency for all ACE students. The most popular tests used by ACE schools were the MAPS/NWEA and the Terra Nova. However, more than one-quarter of all schools reported they did not give a test to their students.



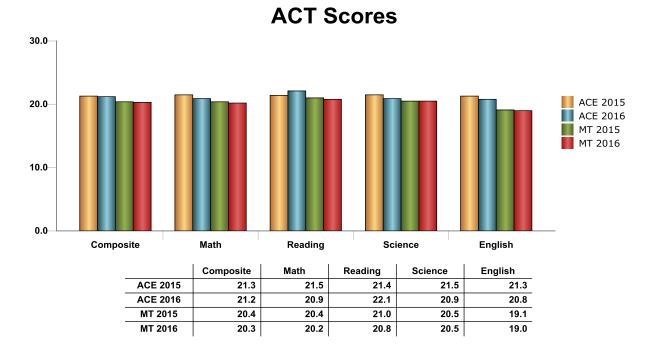


Only two years of data are available for ACE Montana scholars' proficiency in reading and math, and all comparisons made from public school students are for the most recent year available.⁶ In Math, ACE students in 2016 outperformed both their public school peers (all students and FRL), while increasing their proficiency in nearly all grade levels (notably in the third and 8th grades). Further, ACE students were more proficient in reading in most grade levels (except sixth grade) than their Montana low-income peers (Montana Office of Public Instruction, 2016).



⁶ The most recent data from the Montana Office of Public Instruction are from the 2012-13 academic year.





ACE students outperformed their public school peers in both 2015 and 2016, indicating they are more college-ready than Montana students (ACT, 2016).

High School Graduation

Graduation Rate Comparison			
Year	ACE 4-Year Graduation	State	State FRL Graduation
2016	100%*	85.6%	76.4%

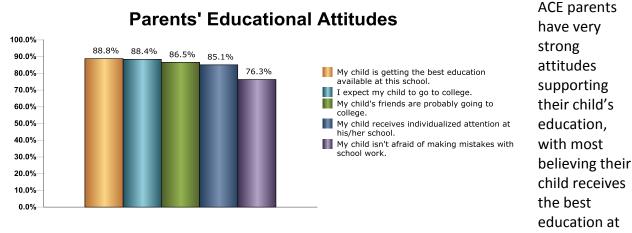
The 4-year graduation rate for ACE scholars is higher than the graduation rates for all public school students and FRL students, it cannot be fully represented to reflect this graduating cohort, as only 14 ACE students* responded to this question. Because of the small return sample, it cannot be determined if ACE students have a higher graduation rate than their low-income and public school peers.

Four-year graduation rates carry a substantial amount of weight behind them, for students who acquire the GED often spend 3.1 months studying for a seven hour exam, while high school graduates earn the degree as they go through their compulsory education period. Individuals earning a GED have to make the time to earn that certificate. There is another key reason pertinent to the state of Montana, which has worked to cut its dropout rate, which was at a staggering 5% in 2008-09 academic year. In 2014-15, the dropout rate reduced to 3.4%, and 86% of high school students graduated-one of the highest years on record for this school district (Montana Office of Public Instruction, 2016).

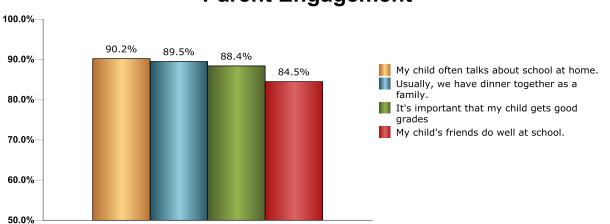


Attitudes

Educational Attitudes



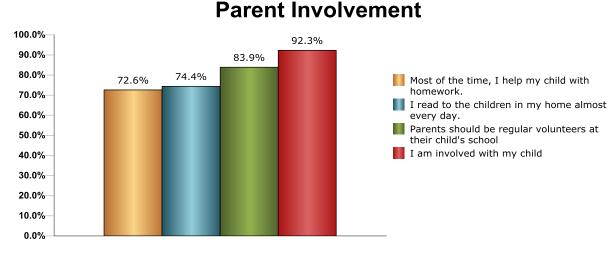
their school. Further, high volumes of parents reflect their desire for their child to go to college, and for their child's friends to go as well. Measuring parent attitudes towards education is critical, for research shows (as reported by Timkey, 2015), that parents who are involved and promote learning and education at home have a strong impact on students' academic success – regardless of social class or background (Dauber & Epstein, 1989).



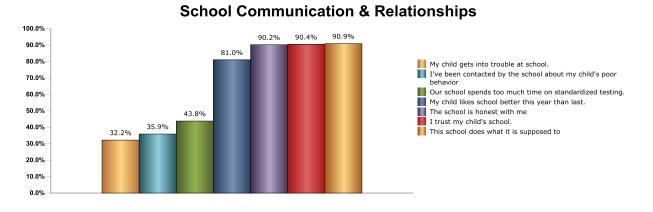
Parent Engagement

Parents and students also share strong values towards education. According to the adjudicated literature, when parents are engaged and involved with their child, that child performs better in school (Fahey, 2008). Another type of parent engagement often comes from families who eat dinner together, as they become more engaged with each other, and this activity allows parents to promote healthy behaviors and educational moments (Miller, Waldfogel, & Han, 2012).



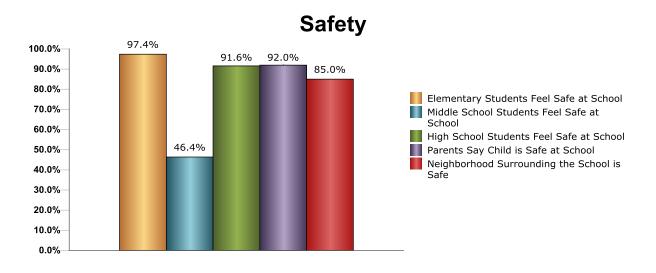


Parent involvement is strong for ACE families – a key variable that research shows is a strong predictor of student success. One key part of parental involvement at home is helping their children learn to read by reading to them. Children who read frequently when they are between six and eleven years old reported being read to frequently by their parents (Scholastic.org, 2015).

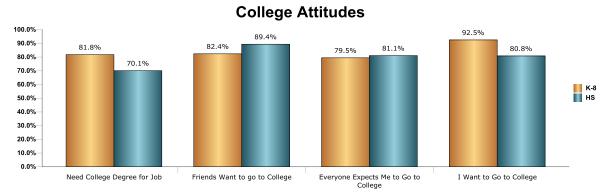


ACE Montana parents show a strong level of communication and a strong relationship between them and the school – a paramount feature indicating a strong school partnership, for as Adams and Forsyth (2006) wrote, "[p]romoting parent-school partnerships is an effective means to enhance school and student performance," (p. 3). Successful parent-school partnerships are a key factor in developing students' psychosocial and overall cognitive skills. More importantly, high levels of trust from parents are necessary; especially when only 29% of parents across the country are confident their children receive a good education from their public school system (Gallup, 2014).





Most ACE parents also feel their school is a safe environment for their children, as do elementary and high school scholars. However, only 46.4% of ACE middle school students report they are safe at school. The degree that a student feels safe at their school is key to performance. According to Lacoe (2012), feeling safe at school is fundamental due to its impact on academic achievement and engagement. When students do not feel safe they are less likely to focus on class, and subsequently do not perform as well. In addition, students who are not safe at school may stay at home, and studies have shown missing school has a profound negative impact on achievement as well. This should be explored in more detail, in order to determine if there are specific factors that are influencing middle schoolers perceptions of safety.⁷

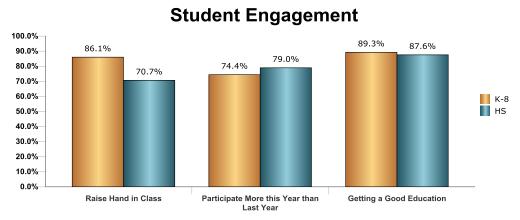


Nearly all ACE scholars have strong attitudes regarding college enrollment, in addition to strong support systems. Students who do not go onto higher education often do so because they lack basic knowledge about college, and they lack support for attending college – a feeling ACE scholars do not seem to experience, due to their strong support from friends and family (Temple, 2009). However, older ACE scholars' desire to go to college is lower than their younger cohort members. This is key, for they are closer to graduating high school and going to

⁷ Bullying is most prevalent in the 7th and 8th grades (Juvonen, et al., 2013), with victims often members of outgroups.

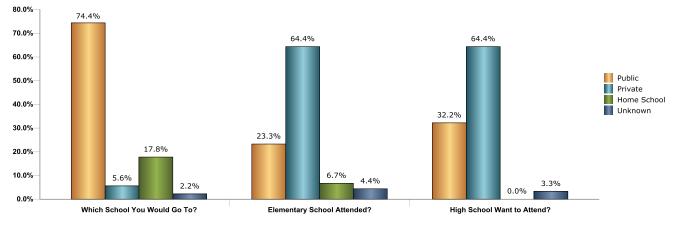


college or entering the workforce. Carnevale, Smith & Strohl (2014) report 35% of new jobs will require a Bachelor's Degree, and 30% of all new positions will require an Associate's Degree or some college education, and this lack of desire or need for a college degree may hinder their economic futures and earning potential.



The results from all of these attitudes seem to have a strong effect on the ACE scholars, as they are participating more in class this year, and most are engaged in the classroom. Specifically, high

school students are participating in class at a higher rate than their K-8 counterparts. A similar rate of K-8 and High School ACE scholars stated they are getting a good education in their schools. This point is critical due to the high dropout rate Montana reported, and these factors that came from the families choice of school may contribute to keep these students in school – furthering their educations beyond their public school peers.



School Choice

Student School Choice

Attending a private school is highly desired by ACE scholars in middle school, in addition to their parents. Approximately 64.4% of the respondents said they began their educations in private schools, and an equivalent number expressed their desire they wanted to continue their secondary education at a private school. However, most of the respondents said if they did not have the ACE scholarship, they would likely attend a public school (74.4%), or be home-schooled (17.8%). These findings show most students have gone through, and would like to continue, their education through private schools, and a low proportion prefer public schools.



School Information

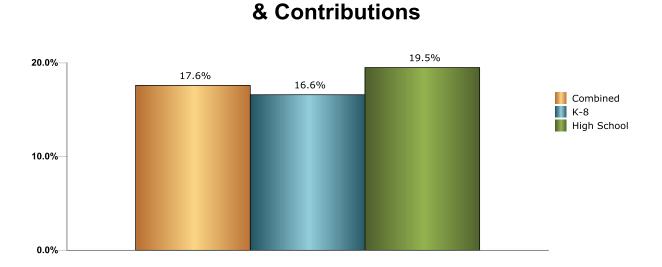
School Costs



Montana (National Center for Education Statistics, 2015; Montana Office of Public Instruction, 2016).

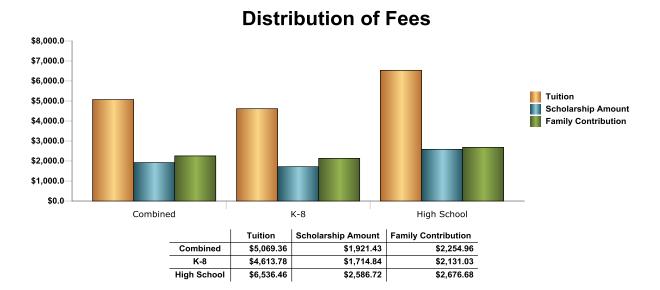
For private schools, the costs not covered can be substantial. Nearly 20% of all high school expenses are not covered by family contributions or the ACE scholarships, as are one-sixth of K-8 tuition. Other forms of fundraising –including scholarships –must fill the gap so that children can continue to attend their school.

Not Covered by Scholarships

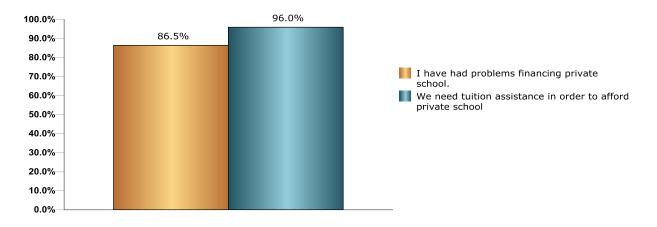




⁸ Excludes capital investment and private school fundraising costs.



The ACE Scholarship is often the deciding factor in whether or not a family can afford to send their child to a private school. As evidenced by the chart above, ACE and ACE families' contributions cover 80.5% to 83.4% of tuition costs. Families without the scholarship on average contribute 46.2% of tuition for K-8 schools and 40.9% of tuition for high schools – necessitating the need for the ACE scholarship. Parents also indicate a strong need for assistance, as 96% of ACE Montana parents indicated that without the scholarship, their child would not be able to attend a private school, and 86.5% reported having problems financing their children's educations (below) – further showing the demand and importance of the ACE scholarship.

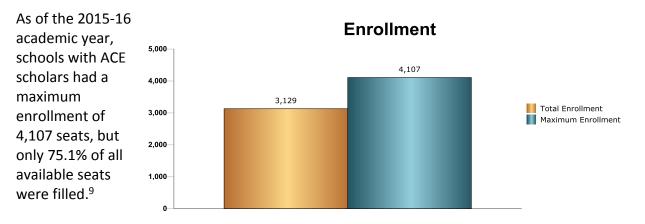


Scholarship Need

As parents have indicated a need, and it is very likely that their children understand the economic situation of their families, having the ACE Scholarship and receiving school-based discounts signals to the child that there are multiple stakeholders invested in their educations. This attention results in children understanding the importance of trying hard (Myers, 2003).



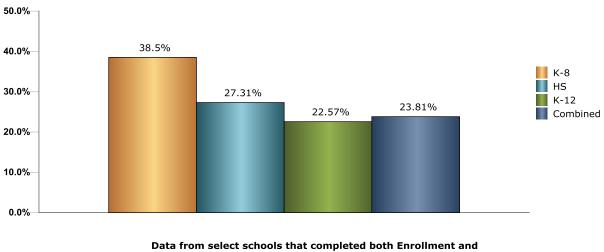
Enrollment



Comparisons made from 20 schools. Remainder either completed Total Enrollment, or Maximum Enrollment

Grade Levels Served	Enrolled	Maximum
К-8	508	826
9-12	189	260
K-12	964	1245

A breakdown by school type shows that all schools have many seats available. Overall, there are approximately 670 seats available in ACE schools. The chart below shows the availability at each type of school partnering with ACE.



Available Seats

Data from select schools that completed both Enrollment and Maximum Capacity.

⁹ Among the schools that could be compared, five did not provide a description whether they were a K-8, High School, or K-12 school.

