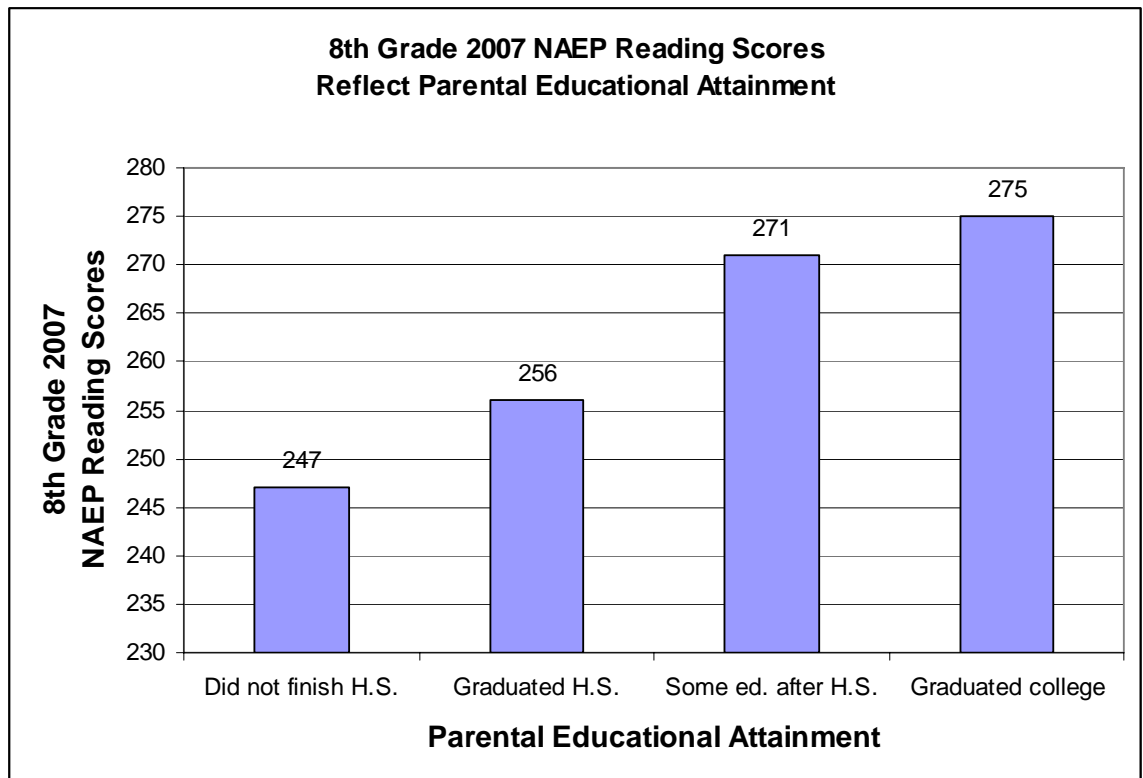


## Colorado 8<sup>th</sup> Graders' Achievement on National Assessment Reflects Adult Educational Attainment

A review of data in the National Assessment of Educational Progress (NAEP) report indicates that adult educational attainment is closely related to reading and science scores for Colorado eighth graders<sup>1</sup>. The data indicates that average reading achievement scores among Colorado eighth graders increase significantly at each level of educational attainment among their parents. (See Chart 1.)

**Chart 1: 2007 NAEP Reading Scores of Colorado 8<sup>th</sup> Graders As a Function of Parental Educational Attainment**



The NAEP Reading Scale ranges from 0 to 500, with an average of 250 across all grades<sup>2</sup> (fourth, eighth, and twelfth). (See the National Assessment Governing Board at <http://nagb.org/> for more information on NAEP test design and content).

## Colorado 8<sup>th</sup> Graders' Achievement on National Assessment Reflects Adult Educational Attainment

A breakdown of the data by discrete achievement levels reveals that those eighth graders whose parents completed high school education or beyond were more likely to score at or above proficient on the reading assessment than their peers with less educated parents. (See Table 1.)

**Table 1: Percent of 8<sup>th</sup> Grades at Different Levels of NAEP Reading Achievement As a Function of Parental Educational Attainment**

Parental Educational Attainment	Percent of 8 <sup>th</sup> Graders Scoring At ...		
	Below Basic	Basic	Proficient or Advanced
Did not finish High School	42%	44%	13%
Graduated High School	31%	47%	22%
Some ed. after High School	15%	46%	39%
Graduated college	13%	43%	44%

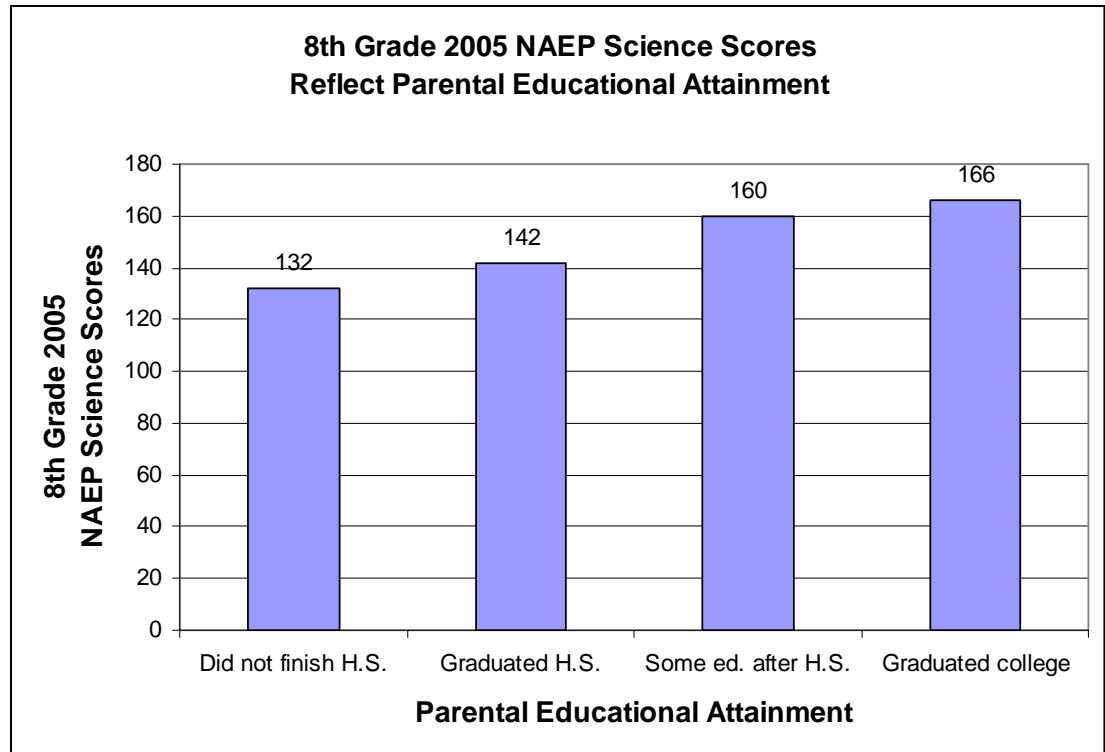
While 42 percent of eighth graders whose parents did not finish high school scored Below Basic on the reading assessment, this percentage dropped to 31 percent for those whose parents did complete high school, and to 15 percent or less for those whose parents had education beyond high school. In other words, eighth graders whose parents had simply completed high school were twice as likely to score Below Basic on the reading assessment as peers whose parents had education beyond high school.

At the other end of the spectrum, only 13 percent of eighth graders whose parents did not finish high school scored at Proficient or Advanced on the reading assessment; this number rose to 22 percent for those whose parents did complete high school, and to 39 percent or more for those whose parents had education beyond high school. The most dramatic difference can again be observed between eighth graders who are the children of high school graduates, and those whose parents continued their education beyond high school.

## Colorado 8<sup>th</sup> Graders' Achievement on National Assessment Reflects Adult Educational Attainment

While the differences appear less dramatic, there is also a statistically significant difference in average science achievement among Colorado eighth graders that directly relates to their parents' educational attainment. (See Chart 2.)

**Chart 2: 2005 NAEP Science Scores of Colorado 8<sup>th</sup> Graders As a Function of Parental Educational Attainment**



The NAEP Science Scale ranges from 0 to 300, with an average score of 150 across all grades<sup>2</sup> (fourth, eighth, and twelfth). (See the National Assessment Governing Board at <http://nagb.org/> for more information on NAEP test design and content).

This data indicates that, while even those eighth graders whose parents are high school graduates tend to score below average on the NAEP science assessment, those whose parents pursue education beyond the high school level are likely to score above average on the science assessment. Again, a breakdown of the data by discrete achievement levels provides additional insight into this phenomenon. (See Table 2.)

## Colorado 8<sup>th</sup> Graders' Achievement on National Assessment Reflects Adult Educational Attainment

**Table 2: Percent of 8<sup>th</sup> Grades at Different Levels of Science Achievement As a Function of Parental Educational Attainment**

Parental Educational Attainment	Percent of 8 <sup>th</sup> Graders Scoring At ...		
	Below Basic	Basic	Proficient or Advanced
Did not finish High School	62%	28%	10%
Graduated High School	49%	34%	17%
Some ed. after High School	27%	35%	38%
Graduated college	22%	30%	48%

Nearly two-thirds (62 %) of eighth graders whose parents did not finish high school scored Below Basic on the science assessment, and nearly half (49 %) whose parents are high school graduates did just as poorly. This figure shrank to 27 percent or less for those whose parents had education beyond high school.

At the other end of the spectrum, only 10 percent of eighth graders whose parents did not finish high school scored at Proficient or Advanced on the science assessment. Again, the most dramatic increase in proficiency was observed between eighth graders whose parents graduated from high school (17 % Proficient or Advanced) and those whose parents pursued education beyond high school (38 % or more at Proficient or Advanced).

Research has revealed a relationship between parental educational attainment and eighth-graders' achievement. A paper presented in 1992 at the annual meeting of the American Educational Research Association (AERA) suggested that parental educational attainment had a mediating effect on parental involvement in the education of their children, and that "parental involvement has substantial effect on eighth graders' test achievement scores"<sup>3</sup>. Research published in *Sociology of Education* in 1996 indicated that parental educational attainment is more predictive of parental involvement and eighth grade achievement than either race or socioeconomic status<sup>4</sup>.

Previous LitScans have described potentially related trends: A November 2006 [LitScan](#) revealed that children whose parents have attained higher levels of education are more likely to make use of personal computers and the Internet; another November 2006 [LitScan](#) indicated that high school seniors' educational aspirations are closely related to parental levels of educational attainment.

## Colorado 8<sup>th</sup> Graders' Achievement on National Assessment Reflects Adult Educational Attainment

The observed differences in eighth grade reading and science achievement at each level of parental educational attainment demonstrate that it is essential to encourage and emphasize adult education in order to increase academic achievement among future generations.

### SOURCES:

<sup>1</sup>U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment; 2005 Science Assessment.

<sup>2</sup>National Assessment Governing Board (2007). <http://nagb.org/>

<sup>3</sup>Keith, T.Z., Keith, P.B., Bickley, P.G., and Singh, K. (1992). Effects of Parental Involvement on Eighth Grade Achievement: LISREL Analysis of NELS-88 Data. Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 20-24, 1992). Available online at [http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/24/32/77.pdf](http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/24/32/77.pdf)

<sup>4</sup>Sui-Chu, E.H., and Willms, J.D. (1996). Effects of Parental Involvement on Eighth-Grade Achievement. *Sociology of Education*, 69(2), 126-141.