

School Moves

School changes related to social service use, risk factors, and academic performance

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FREQUENT SCHOOL MOVES are directly related to poor academic performance, including lower scores in reading and math and dropping out of high school. Although school mobility is associated with other risk factors for school failure such as school engagement, prior achievement, and family support, multiple studies have concluded that changing schools, regardless of the presence or absence of other risk factors, has a detrimental effect on school performance (Gasper *et al.*, 2012; Herbers *et al.*, 2013; Ou and Reynolds, 2008; Reynolds *et al.*, 2009). Furthermore, the negative effects of school moves are more pronounced for students in middle and high school compared to the effects among younger students.

This report, using administrative data from multiple sources, documents the degree to which changing schools is associated with the receipt of basic social and health services, the incidence of behavioral health and social risk factors, and the academic performance of students. By doing so, we provide a picture of the complex overlay of multiple challenges faced by particularly high-risk and vulnerable children. Movement between schools appears to serve as an important signal for much deeper underlying problems that the child and family may be facing.

Key Findings

Students in two grade levels—1st and 7th grades—were followed over three consecutive school years, and the number of school changes during that time were counted. While slightly more than half did not change schools, about 45 percent of the students changed schools at least once, with 7 to 10 percent changing school three or more times during the three years.

As school moves increased, we found:

- Increased use of social services for such basic needs as food, cash, and medical assistance.
- Increased receipt of child welfare services and foster care involvement and placements.
- Heightened risk for homelessness, mental health problems, substance abuse, arrests, and involvement with the juvenile justice system.
- Poorer performance on standard reading and mathematics tests and lower average grades.
- Increased chance of dropping out or having unexcused absences.
- Decreased likelihood of graduating on time.



The Study Population

Youth in Washington State served by the Department of Social and Health Services (DSHS) and enrolled in the K-12 public school system

This study is based on a cross-agency limited data set, called INVEST, that contains data from the DSHS Integrated Client Database (ICDB) created by the Research and Data Analysis Division linked to individual-level data from the P-20 education data warehouse created by the Washington State Education Research and Data Center (ERDC) of the Office of Financial Management (OFM).¹ The INVEST database includes students who received any DSHS service in State Fiscal Years (SFY) 2006–2008, were under the age of 26 on January 1, 2006, and had attended a public school in Washington State at any point between the academic years (AY) 2004/05 and 2010/11.

Two cohorts were selected from the INVEST for this report, based on the following criteria:

- **The 1st grade cohort** consisted of 31,064 individuals who were enrolled in the first grade for the first time on October 1, 2005 (not repeating first grade) **and** enrolled in public school in Washington State every year from AY 2005/06 through AY 2010/11.
- **The 7th grade cohort** consisted of 35,602 individuals who were enrolled in the 7th grade for the first time on October 1, 2005 (i.e., not repeating 7th grade) **and** were enrolled in public school in Washington State every year from AY 2005/06 through AY 2010/11, **or** were residing in Washington State in SFY 2011, according to available administrative data.²

These criteria were used to retain students in the study sample who remained in Washington State through SFY 2011 to ensure that administrative records were available for data measurement. In particular, we needed to measure school mobility, social service use, and risk factors during the three-year baseline period (AY 2005/06 – 2007/08) and to measure school performance in AY 2008/09. For the 7th grade cohort, the selection criteria also ensured that we could measure school exits through graduation or dropping out by AY 2011/12. (See Technical Notes for details.)

School mobility was measured as the total number of times a student moved between schools in three years (AY 2005/06 – 2007/08). Decision rules were established so that we would count actual changes in the school a student attends but *not* count shifts that occur normally with grade progression (see Technical Notes). For example, a progression from elementary to middle school was not counted unless there was a change in school district.

For background, we gathered the demographic characteristics of age, gender, and race/ethnicity from school records in AY 2005/06. We determined if the students used social services at least once in the three-year baseline period (SFY 2006 – 2008) using data from the DSHS ICDB. These services included Temporary Assistance to Needy Families (TANF), Basic Food, Developmental Disabilities Services, Children’s Administration Services, and Foster Care. Using the ICDB for the same three-year period, we examined evidence of risk for homelessness, mental health problems, substance abuse, and criminal justice system involvement.

We used a number of measures of school performance in AY 2008/09 for both grade cohorts, including performance on standardized reading and mathematics tests, unexcused absences, and grade progression. For the 7th grade cohort, we also examined Grade Point Average (GPA) in AY 2008/09 and drop-out and graduation rates based on information from the Office of Superintendent of Public Instruction’s (OSPI) P210 data (AY 2005/06 – AY 2011/12).

¹ The creation of this linked dataset and analyses of the data were funded by a grant for statewide longitudinal data systems under the American Recovery and Reinvestment Act of 2009, awarded to OFM and with a subcontract to DSHS.

² Evidence of in-state residence was ascertained from records of DSHS, Employment Security Department, Washington State Patrol, Administrative Office of the Courts, or an institution of higher education in Washington State.

School Mobility

Slightly over half of the students in both cohorts (54 percent of the 1st grade cohort and 56 percent of the 7th grade cohort) did not change schools during the three consecutive academic years of AY 2005/06 through AY 2007/08. Roughly one-fourth changed schools just once, about one-tenth changed schools twice, and the remainder (7 percent of 1st graders and 10 percent of 7th graders) changed schools three or more times in the three-year period. The total number of school moves in three years was as high as 10 for one 1st grader and 16 for three of the 7th graders.

Number of School Moves in 3 Years, AY 2005/06 – 2007/08

By student cohorts, AY 2005/06

1 st Grade Cohort	No moves	1 move	2 moves	3+
	54% <i>n = 16,840</i>	28% <i>n = 8,623</i>	11% <i>n = 3,498</i>	7% <i>n = 2,103</i>
<i>TOTAL = 31,064</i>				

7 th Grade Cohort	No moves	1 move	2 moves	3+ moves
	56% <i>n = 19,811</i>	24% <i>n = 8,564</i>	10% <i>n = 3,621</i>	10% <i>n = 3,606</i>
<i>TOTAL = 35,602</i>				

Demographics

The two student cohorts of DSHS clients had the following characteristics (see detailed tables on next page):

1st grade cohort:

- Average age was 6.4 years as of January 1, 2006.
- Slightly less than half were females.
- 54 percent were white, non-Hispanic while the remaining 46 percent included racial/ethnic minorities in AY 2005/06.
- As the number of school moves increased from none to three or more, the percent African American increased (from 6 to 12 percent) while the percent Hispanic decreased (from 27 to 21 percent).
- 23 percent (*n = 7,013*) received special education services in school, with the percentage rising from 21 to 26 percent as the number of school moves increased from none to three or more over a three-year period.

7th grade cohort:

- Average age was 12.5 years as of January 1, 2006.
- Overall, half were females, but this percentage decreased from 50 percent of students who had no school changes to only 44 percent of those with three or more school changes.
- 59 percent were white, non-Hispanic while the remaining 41 percent included racial/ethnic minorities with Hispanics comprising the largest minority group (20 percent) in AY 2005/06.
- As the number of school moves increased from none to three or more, the percent African American increased (from 7 to 12 percent) while the percent Hispanic decreased (from 21 to 17 percent).
- 19 percent (*n = 6,664*) received special education services in school, with the percentage rising from 17 to 26 percent as the number of school moves increased from none to three or more.

Demographics and School-Based Services of Two Cohorts of Student DSHS Clients

By total moves between schools, AY 2005/06 – 2007/08

1st Grade Cohort	TOTAL <i>TOTAL = 31,064</i>	NO moves <i>n = 16,840</i>	1 move <i>n = 8,623</i>	2 moves <i>n = 3,498</i>	3 or more moves <i>n = 2,103</i>
Average Age <i>On January 1, 2006</i>	6.4 years	6.4 years	6.4 years	6.4 years	6.4 years
Gender					
Female	48%	48%	49%	47%	49%
Male	52%	52%	51%	53%	51%
Race/Ethnicity (based on K-12 education data)*					
American Indian/Alaskan Native	4%	4%	4%	4%	5%
Asian	6%	6%	6%	4%	3%
Black/African American	8%	6%	9%	11%	12%
Hispanic/Latino any race	25%	27%	23%	22%	21%
Native Hawaiian/Other Pacific Islander	1%	0%	1%	1%	1%
White	54%	55%	54%	53%	51%
2 or more races	3%	2%	3%	5%	5%
Not provided	0%	0%	1%	1%	1%
School-Based Services Received					
Special education	23%	21%	23%	24%	26%

7th Grade Cohort	TOTAL <i>TOTAL = 35,602</i>	NO moves <i>n = 19,811</i>	1 move <i>n = 8,564</i>	2 moves <i>n = 3,621</i>	3 or more moves <i>n = 3,606</i>
Average Age <i>On January 1, 2006</i>	12.5 years	12.4 years	12.5 years	12.5 years	12.6 years
Gender					
Female	49%	50%	50%	49%	44%
Male	50%	50%	50%	51%	56%
Race/Ethnicity (based on K-12 education data)*					
American Indian/ Alaskan Native	4%	3%	4%	5%	7%
Asian	6%	7%	5%	5%	3%
Black/African American	8%	7%	10%	10%	12%
Hispanic/Latino any race	20%	21%	18%	17%	17%
Native Hawaiian/ Other Pacific Islander	1%	0%	1%	1%	1%
White	59%	60%	59%	58%	56%
2 or more races	2%	1%	2%	3%	2%
Not provided	0%	0%	1%	1%	1%
School-Based Services Received					
Special education	19%	17%	19%	21%	26%

*Persons of Hispanic/Latino origin are counted in a single category; the remaining categories contain non-Hispanics.

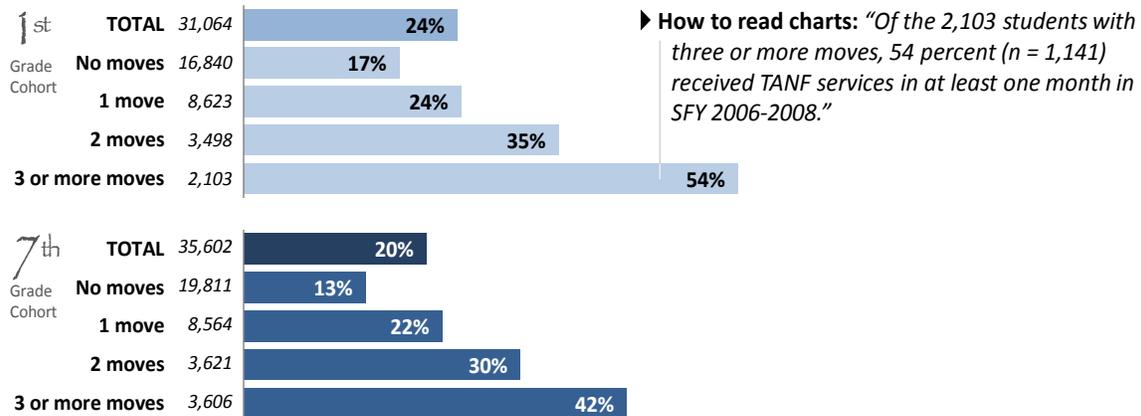
Social Service Use

Temporary Assistance for Needy Families (TANF)

Students who changed schools more often over three consecutive school years (AY 2005/06 – 2007/08) were more likely to receive TANF at least once in that time frame. In particular, 54 percent of the 1st grade cohort of DSHS clients who had changed schools three or more times received TANF compared to only 17 percent of the 1st grade students who had not changed schools. Similarly, among the 7th grade students identified in AY2005/06, 42 percent of those who changed schools three or more times from AY 2005/06 through AY 2007/08 received TANF compared to only 13 percent of the 7th graders who did not change schools. (See Appendix Table, “Social Service Use, Risk Indicators, and School Performance,” for the numbers of students on which the percentages are based for all charts in this report.)

Percent of Students who Received TANF in SFY 2006 – 2008

By total moves between schools, AY 2005/06 – 2007/08

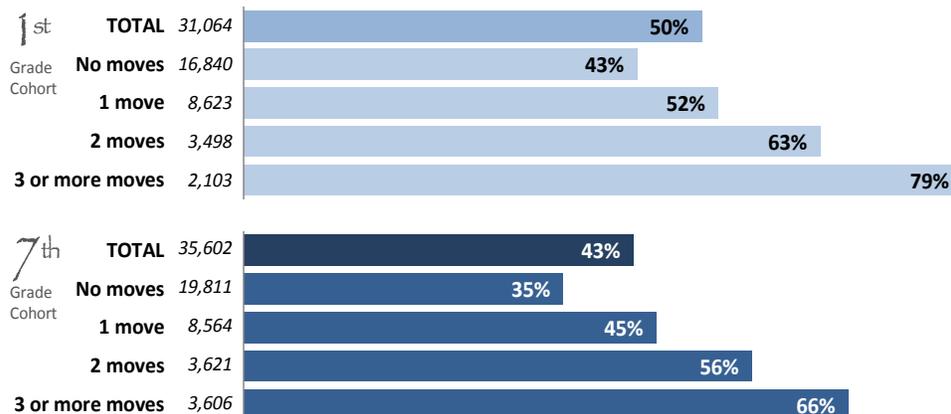


Basic Food

The Basic Food program provides food assistance to families at or below 200 percent of the Federal Poverty Level. Receipt of this service is often used as an indicator of family poverty. Among the 1st and 7th grade students who had ever received a DSHS service, the more times they changed schools in the three years, the more likely they received Basic Food (i.e., were living in poverty). Over three-fourths (79 percent) of 1st graders and two-thirds (66 percent) of 7th graders who changed schools three or more times received Basic Food in at least one month of the three-year period.

Percent of Students who Received Basic Food in SFY 2006 – 2008

By total moves between schools, AY 2005/06 – 2007/08

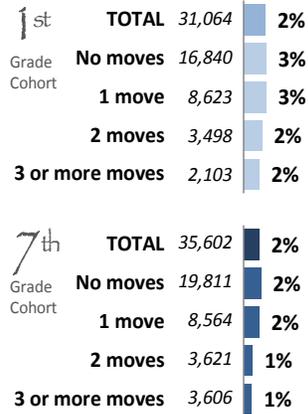


Developmental Disabilities Services

Receipt of DSHS services for developmental disabilities was not related to the number of school changes for either 1st or 7th graders, with 2 percent overall receiving these services.

Percent of Students who Received Developmental Disabilities Services in SFY 2006 – 2008

By total moves between schools, AY 2005/06 – 2007/08

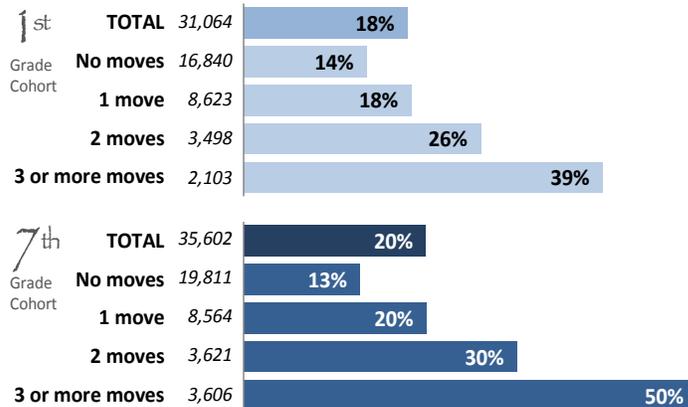


Children’s Administration Services

About one in five of the children and young adolescents who were DSHS clients received one or more services from the Children’s Administration (CA). These services included case management to address problems of abuse or neglect and services to help families reunite. The percentage of DSHS students who received such services from Children’s Administration increased progressively as the number of school changes increased. For those who changed schools three or more times in the selected period, two-fifths (39 percent) of 1st graders and half (50 percent) of 7th graders received CA services to address such problems as abuse, neglect, or family disruption.

Percent of Students who Received Any Children’s Administration Services in SFY 2006 – 2008

By total moves between schools, AY 2005/06 – 2007/08



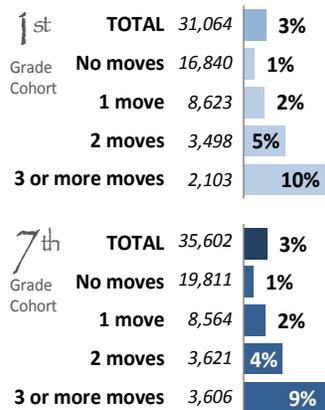
The increased tendency to need assistance from Children’s Administration as the number of school changes increases underlies the importance of identifying and addressing the underlying family problems that may contribute to frequent movement between schools. Coordination between schools, case managers, and other service providers is essential, particularly for the well-being of children caught in difficult family circumstances.

Children’s Administration, Foster Care Services

Focusing just on foster care services, we found that 3 percent of children in both the 1st and 7th grade cohorts of DSHS clients received foster care in SFY 2006-2008. The likelihood of receiving foster care, increased for children with more school changes. Among DSHS children who changed school three or more times from AY 2005/06 through 2007/08, 10 percent of 1st graders and 9 percent of 7th graders received foster care services, a rate that was three times higher than the average for their age cohort and about ten times higher than the number for those who had no moves.

Percent of Students who Received Foster Care Services in SFY 2006 – 2008

By total moves between schools, AY 2005/06 – 2007/08



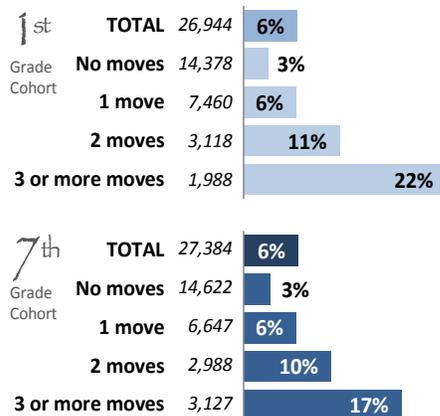
Risk Indicators

Homelessness

The likelihood of homelessness increased as the number of school changes increased among both the 1st and 7th grade DSHS cohorts. Only 6 percent of children in either grade level were flagged as homeless in the Automated Client Eligibility (ACES) maintained by the DSHS Economic Services Administration.* The percent flagged as homeless increased progressively as the number of school moves increased, such that 22 percent of the 1st graders and 17 percent of the 7th graders who changed schools at least three times were recorded as homeless at some point in the three years.

Percent of Students at Risk of Homelessness in SFY 2006 – 2008*

By total moves between schools, AY 2005/06 – 2007/08



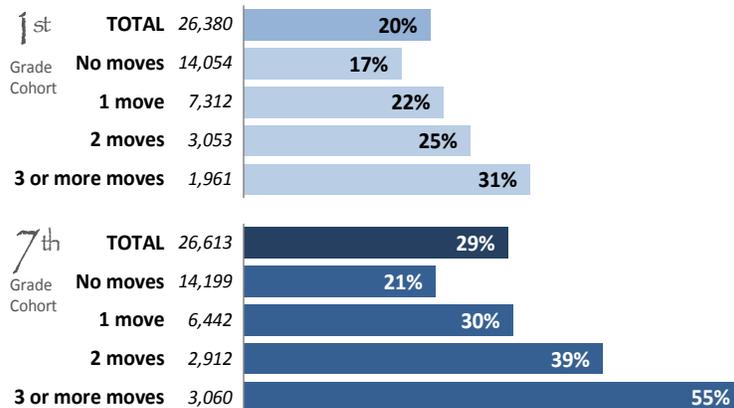
*Based on the subset of children who receive TANF, Basic Food, or Medical Assistance to allow for measurement of homelessness from administrative records. Excludes ESA clients who receive Child Support only.

Mental Health

Records of diagnoses, prescriptions, and treatment provided for mental health disorders indicate that 20 percent of 1st graders and 29 percent of 7th graders who were DSHS clients have a mental health treatment need. These levels of need increased progressively with the number of school changes over the three chosen academic years, and—within each school-move category—risks were higher among middle school students than among elementary school children. About one-third (31 percent) of 1st graders and over half (55 percent) of 7th graders who had moved three or more times in the three academic years had an identified mental health need in same time period.

Percent of Students at Risk of Mental Health Problems in SFY 2006 – 2008*

By total moves between schools, AY 2005/06 – 2007/08



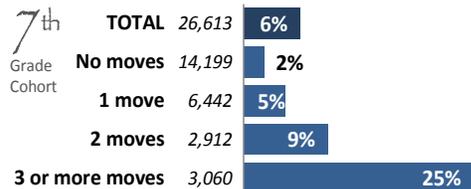
*Based on the subset of children with Medical Assistance to allow for measurement of mental health treatment need.

Substance Abuse

Six percent of the 7th grade cohort who received DSHS services appeared to be at risk of having a substance abuse problem based on records of those who obtained services for alcohol or other drug (AOD) abuse and dependency or had been arrested for an AOD-related offense in SFY 2006 – 2008. The risk for a substance use disorder rose from only two percent among those who did not change schools to 25 percent among students who changed schools three or more times.

Percent of Students at Risk of Substance Abuse Problems in SFY 2006 – 2008*

By total moves between schools, AY 2005/06 – 2007/08



* Based on the subset of children with Medical Assistance to allow for measurement of risk for substance abuse problems.

Criminal Justice System Involvement

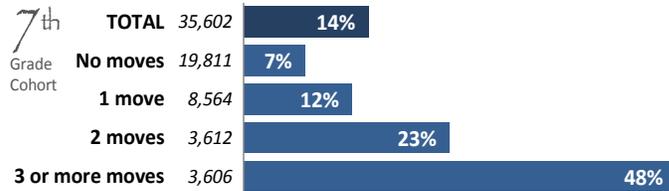
To create a more comprehensive indicator of involvement with the criminal justice system, we combined data on arrests from the Washington State Patrol with data on diversions, convictions, and sentencing from the Administrative Office of the Courts (AOC).³ While 14 percent of the 7th grade students served by DSHS were involved with the criminal justice system at least once in the three years, the rate of involvement increased in accordance with the number of school changes. Of those who had no school moves, only 7 percent were involved with the criminal justice system compared

³ Court data were from a database compiled by the Washington State Institute for Public Policy.

to nearly half (48 percent) of those with three or more moves. The percentage of 7th grade students served by DSHS who were arrested for felonies and more serious misdemeanors in SFY 2006 – 2008 (not shown) rose from just one percent of those with no school moves to 26 percent of those with three or more moves in the three corresponding academic years.

Percent of Students Involved in the Criminal Justice System in SFY 2006 – 2008

By total moves between schools, AY 2005/06 – 2007/08



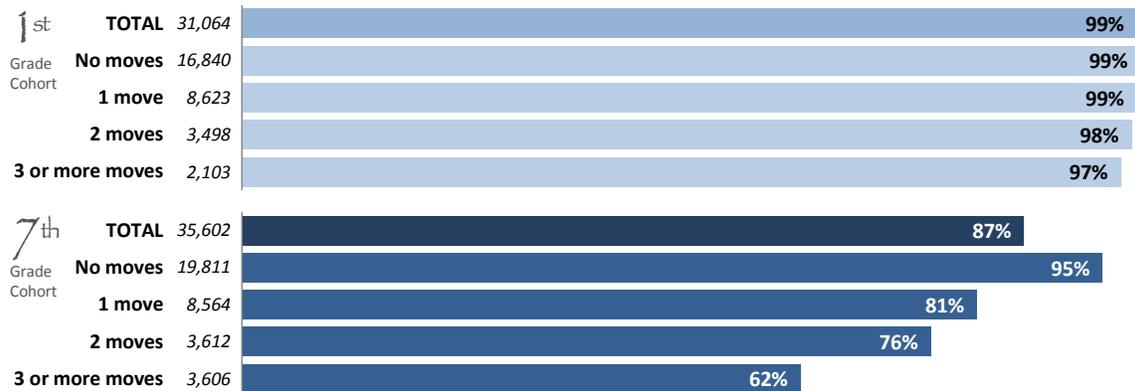
School Performance

Standardized Reading Test Performance

Nearly all of the 1st grade cohort of DSHS clients took the standardized reading test in AY 2008/09, which was the 4th grade test for most of these students.⁴ In comparison, only 87 percent of the 7th grade cohort took the 10th grade reading test. Seventh grade students who changed schools more often over the three academic years (AY 2005/06 – AY 2007/08) were less likely to take the standardized reading test in the 10th grade, with the percentage dropping from 95 percent of those with no school moves to only 62 percent of those with three or more moves.

Percent of Students who Took the Standardized Reading Test in AY 2008/09

By total moves between schools, AY 2005/06 – 2007/08



Performance on the standardized reading tests in AY 2008/09 declined as the number of school changes rose (see chart on next page). Among the 1st graders, 66 percent of students who had not changed schools in three years met the reading test standard compared to 57 percent of those with three or more moves. Among the 7th graders, 87 percent of students who had not changed schools met the 10th grade reading standard compared to 63 percent of those with three or more moves.

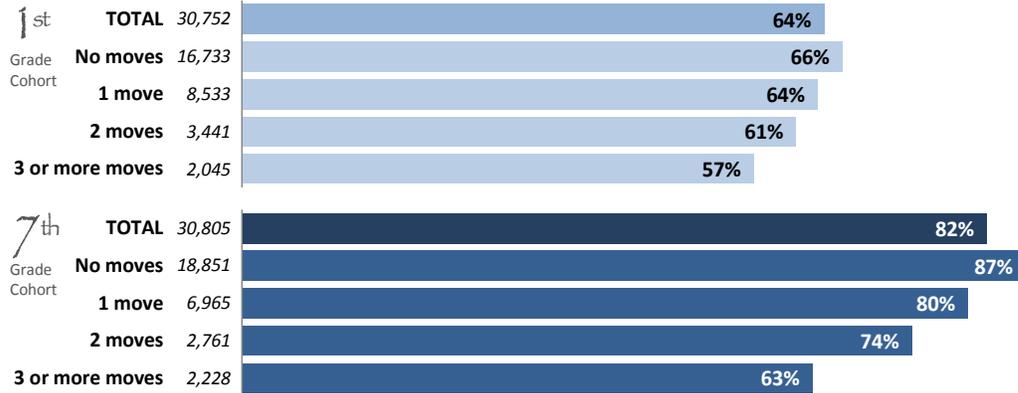
Since passing the 10th grade test is a requirement for graduation, students are allowed to take this test multiple times to allow an opportunity to meet the standard. We chose to use the final 10th grade standardized test score on file to reflect the final outcome. As a result, the 82 percent of the 7th grade cohort that met the 10th grade reading test standard is slightly higher than the overall average of 81 percent who met the test standard in AY 2008/09.⁵

⁴ For the 1st grade cohort, we used standardized test data for AY 2008/09, which did not specify the grade level for elementary school children in that year. While most of this test data will be for the 4th grade, some may be for a different grade depending on a child's grade progression. For the 7th grade cohort, we were able to select only those who took the 10th grade standardized test.

⁵ Source: <http://reportcard.ospi.k12.wa.us/summary.aspx?year=2008-09>.

Percent of Students who Met the Reading Test Standard for Grade Level in AY 2008/09*

By total moves between schools, AY 2005/06 – 2007/08



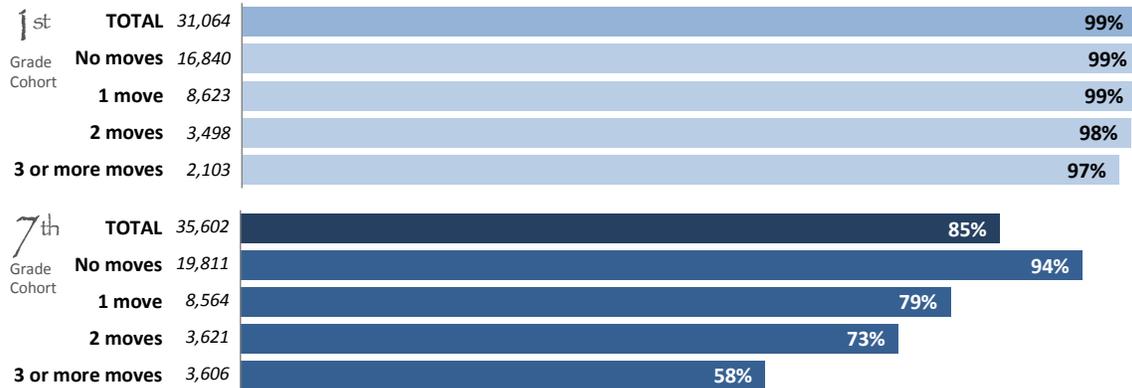
* Based on the subset of children who took the standardized reading test.

Standardized Mathematics Test Performance

Among the 7th grade cohort, the percentage taking the test declined markedly as the number of school changes in the prior three years increased.

Percent of Students who Took the Standardized Mathematics Test in AY 2008/09

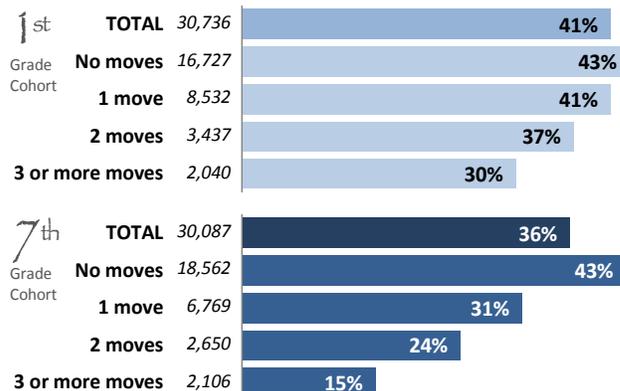
By total moves between schools, AY 2005/06 – 2007/08



As the number of school changes in the three years increased, performance on the mathematics test dropped from 43 to 30 percent for the 1st grade cohort and from 43 to 15 percent for 7th grade.

Percent of Students who Met the Mathematics Test Standard for Grade Level in AY 2008/09*

By total moves between schools, AY 2005/06 – 2007/08



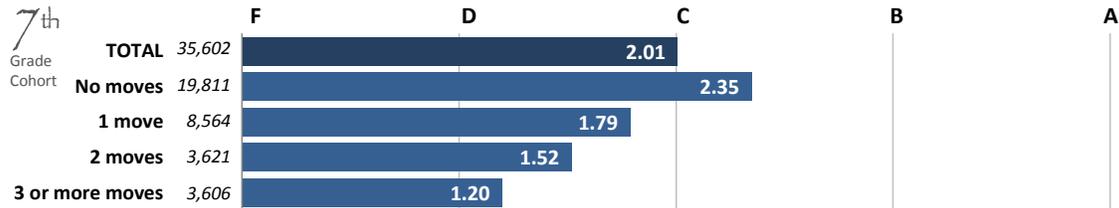
* Based on the subset of children who took the standardized mathematics test.

Overall Academic Performance

Using grade point average (GPA) in AY 2008/09, we were able to measure overall academic performance for the 7th grade cohort of DSHS clients. This school performance indicator declined among students who changed schools more often in the three preceding years. While DSHS students who had not changed schools in the three-year period managed to achieve a GPA of 2.35 (slightly over a C), those who had moved three or more times achieved only a 1.20 GPA (little more than a D).

Grade Point Average in AY 2008/09

By total moves between schools, AY 2005/06 – 2007/08

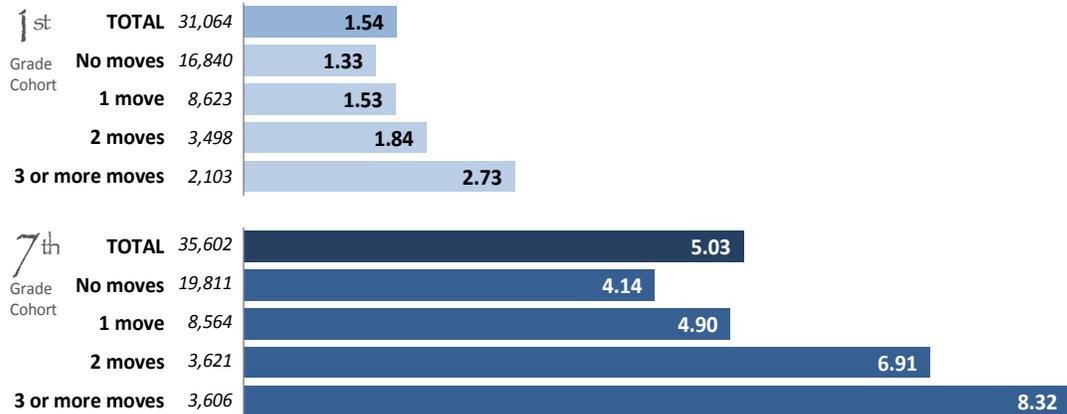


Unexcused Absences

The average number of unexcused absences was examined for both cohorts. While known problems with consistency and completeness of these data suggest that the averages may under-count the actual number of unexcused absences, we have chosen to include this measure since it, too, appears to be sensitive to the number of school changes among both cohorts of DSHS clients. In particular, when comparing students who had no school changes in the prior three years to those with three or more school changes, the average number of unexcused absences in AY 2008/09 increased from 1.33 to 2.73 among the 1st grade cohort and from 4.14 to 8.32 among the 7th grade cohort.

Average Number of Unexcused Absences in AY 2008/09*

By total moves between schools, AY 2005/06 – 2007/08



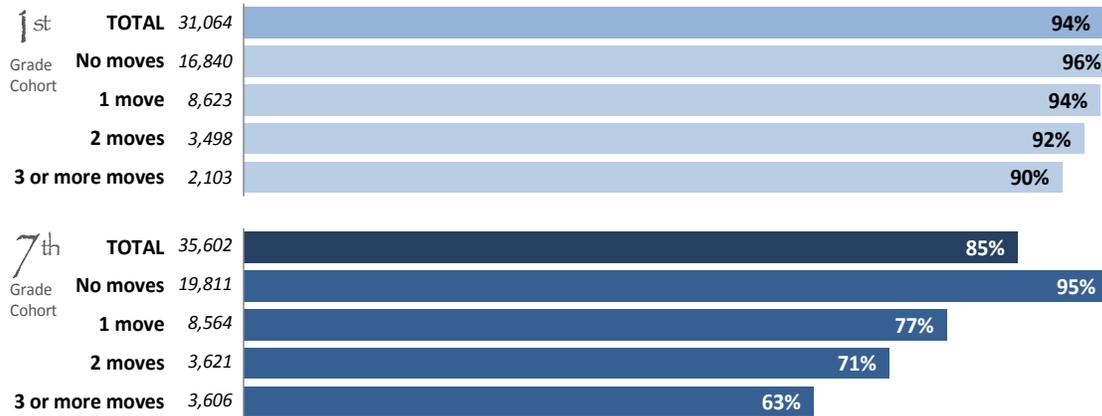
*May under-count the actual number of excused absences based on known reporting problems. New state reporting requirements may improve accuracy of the measure in the future.

Grade Progression

Advancement to the next grade level also appears to be related to the number of moves between schools for both cohorts of DSHS clients, and the decline was more pronounced among the 7th grade cohort. Specifically, the percentage of students progressing to the next grade in AY 2008/09 for those who had no school moves compared to those with three or more decreased from 96 to 90 percent among the 1st graders and from 95 to 63 percent among the 7th graders.

Percent of Students who Advanced to the Next Grade in AY 2008/09

By total moves between schools, AY 2005/06 – 2007/08

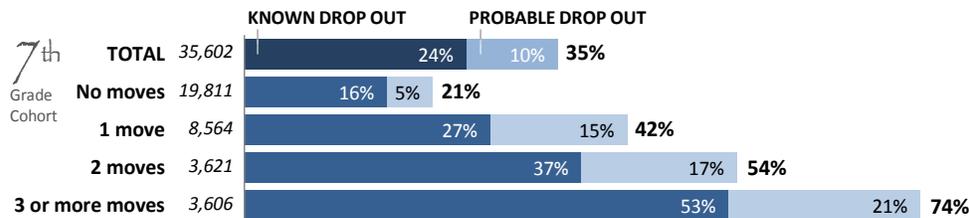


Drop-Out Rates

The likelihood of dropping out of school appeared to increase markedly as the number of moves between schools increased for the 7th grade cohort of DSHS clients. In the chart below, we show actual drop-out rates based on student status recorded in school records as well as an indication of probable drop outs reflected in OSPI's P210 database. Based on the combined total of these rates, we found that, as of AY 2011/12, 21 percent of those who had not changed school in AY 2005/06 – 2007/08 appeared to be drop outs compared to 74 percent of those who had three or more school changes in that same period.

Percent of Students who Dropped Out of School, as of AY 2011/12

By total moves between schools, AY 2005/06 – 2007/08

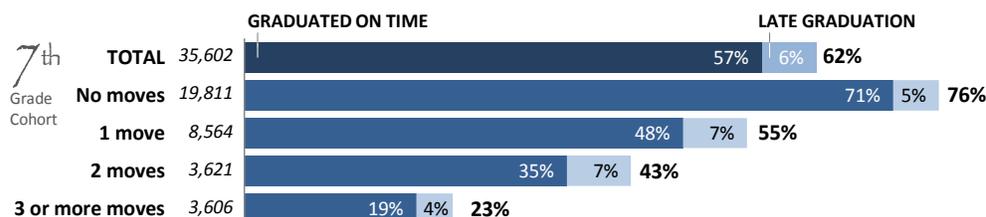


High School Graduation Rates

Of the students in the 7th grade cohort who did not change schools in the three-year period, 71 percent graduated on-time compared to 19 percent who changed schools three or more times. An additional 4 to 7 percent of students graduated late, with no apparent relationship to the number of school changes made in the three years. When late and on-time graduation rates were combined, we found that 76 percent of those with no school changes from AY 2005/06 and AY 2007/08 graduated by AY 2010/11 compared to only 23 percent of those who changed schools three or more times in the three-year study period.

Percent of Students who Graduated from High School on Time or Delayed, as of AY 2010/11

By total moves between schools, AY 2005/06 – 2007/08



Policy and Research Implications

Children with complex social risk factors and service needs have more school moves, which is in turn associated with poor school performance. Although slightly over half of the students served by DSHS that we selected as elementary and middle school cohorts stayed in the same school over three consecutive academic years, the remainder (about 45 percent) changed schools at least once during that period. The number of school changes was associated with increased use of social services, higher incidence of various risk factors, and poorer academic performance using multiple indicators. The analyses in this report are descriptive and do not attempt to establish whether changing schools causes poor outcomes for students. Instead, by comparing four categories of students defined according to the number of school changes in a three-year period—none, one, two, three or more—we found evidence of multiple challenges that are likely to be experienced by students who change schools and that likely contribute to poorer school performance outcomes.

Furthermore, the greater the number of school moves, the higher the incidence of serious risk for homelessness, mental health treatment need, substance abuse, involvement with the juvenile justice system, or receipt of child welfare services for abuse and neglect. Similarly, school performance on standard tests, unexcused absences, grade point averages, and the likelihood of dropping out tend to worsen markedly as the number of school moves increases.

While these associations begin to emerge within our elementary school cohort (starting as the 1st grade cohort), they deepen markedly within the middle school group (identified as the 7th grade cohort) such that over half of the 7th grade cohort who had moved three or more times in three school years had been involved with juvenile justice and less than one in five graduated high school on time.

This report has demonstrated how available administrative data from social and health services, criminal justice, and the education system may be used together to document the nature and the extent of problems that many high-needs students face and the potential impact of these problems on their school performance. Further analyses could be conducted using more complex statistical methods to determine the relative contribution of multiple background and risk factors to school performance and other life outcomes. Where possible, analyses should include information about parental risk factors as well.

School mobility may serve as a strong signal for a host of other personal challenges. This report presented associations between school moves and social and health services provided to individuals with complex risk factors. It is likely that other family risk factors such as parental mental illness, substance abuse, criminal justice involvement, unemployment, or other sources of family instability may also be related to school moves. Future analyses of such adverse childhood experiences in the context of school moves and academic success may identify specific points of intervention. Policy makers in social, health, criminal justice, and academic institutions may want to consider more cross-system policies and better service coordination to address the needs of these high-risk children and youth.

SUPPORTING TABLES

Social Service Use, Risk Indicators, and School Performance

By Total Number of School Moves Over Three Academic Years (2005/06 through 2007/08)

1ST GRADE COHORT	TOTAL	No moves	1 move	2 moves	3+ moves
TOTAL	31,064	16,840	8,623	3,498	2,103
Social Service Use in SFY 2006 – 2008					
Temporary Assistance for Needy Families	7,298	2,885	2,060	1,212	1,141
Basic Food	15,638	7,275	4,489	2,215	1,659
Developmental Disabilities Services	751	429	216	70	36
Children's Administration Services	5,605	2,272	1,594	910	829
Children's Administration – Foster Care	773	209	195	162	207
Risk Indicators in SFY 2006 – 2008					
Homelessness Risk Flag	1,580	379	430	329	442
Mental Health Treatment Need	5,407	2,428	1,602	760	617
School Performance in AY 2008/09					
Took Standardized Reading Test	30,752	16,733	8,533	3,441	2,045
Met Reading Test Standard*	19,808	11,105	5,436	2,109	1,158
Took Standardized Mathematics Test	30,736	16,727	8,532	3,437	2,040
Met Mathematics Test Standard*	12,530	7,169	3,480	1,263	618
Average Number of Unexcused Absences*	1.54	1.33	1.53	1.84	2.73
Advanced to Next Grade	29,333	16,096	8,117	3,230	1,890
7TH GRADE COHORT					
TOTAL	35,602	19,811	8,564	3,621	3,606
Social Service Use in SFY 2006 – 2008					
Temporary Assistance for Needy Families	7,147	2,662	1,866	1,102	1,517
Basic Food	15,233	6,944	3,877	2,019	2,393
Developmental Disabilities Services	590	377	146	35	32
Children's Administration Services	7,142	2,539	1,718	1,087	1,798
Children's Administration – Foster Care	915	222	202	151	340
Risk Indicators in SFY 2006 – 2008					
Homelessness Risk Flag	1,633	425	379	287	542
Mental Health Treatment Need	7,724	2,993	1,904	1,149	1,678
Substance Abuse Service Need	1,659	320	296	269	774
Any Arrest	1,732	212	264	314	942
Any Juvenile Justice Involvement	4,872	1,321	1,019	820	1,712
School Performance in AY 2008/09					
Took Standardized Reading Test	30,805	18,851	6,965	2,761	2,228
Met Reading Test Standard*	25,396	16,350	5,593	2,047	1,406
Took Standardized Mathematics Test	30,087	18,562	6,769	2,650	2,106
Met Mathematics Test Standard*	10,933	7,880	2,101	640	312
Average GPA*	2.01	2.35	1.79	1.52	1.20
Average Number of Unexcused Absences*	5.03	4.14	4.90	6.91	8.32
Advanced to Next Grade	30,265	18,823	6,615	2,568	2,259
Graduation or Exit by AY 2010/11					
Known Drop Out	8,649	3,098	2,304	1,336	1,911
Probable Drop Out	3,679	1,029	1,282	627	741
Graduated on Time	20,126	14,059	4,110	1,280	677
Graduated Late or Delayed	2,042	1,058	560	262	162

*Based only on non-missing values.

THE INVEST DATABASE

The larger study population from which the present cohort was drawn included all individuals who received any kind of service from the Department of Social and Health Services (DSHS) in State Fiscal Year (SFY) 2006, SFY 2007 or SFY 2008 and were age 25 or younger on January 1 of the first of these 3 years in which they received any DSHS service. The Office of Financial Management’s Education Research and Data Center was able to link K-12 data for 892,034 (60.59 percent) of these individuals, and provided education data, including graduation information, progress indicators, and other information, for the Academic Years 2004-2005 up to and including 2010-2011. The result was a limited dataset we call the INVEST database that includes K-12 data for the time spans indicated, and administrative data from the DSHS Integrated Client Database (ICDB) for the SFY 2004 through 2009, linked at the individual level, but including no direct identifiers.

STUDY SAMPLE

A 1st grade cohort of 31,064 students and a 7th grade cohort of 35,602 students were selected from the dataset described above for the purposes of the present study, using the following criteria:

- Were in the 1st or 7th grade for the first time in AY 2005/06 **and**
 - Were enrolled in a public school in Washington State every year from AY 2005/06 through AY 2010/11 **or**
 - For the 7th grade cohort, appeared to be a resident of Washington State in SFY 2011 based on available administrative records from DSHS, the Employment Security Department, the Washington State Patrol, the Administrative Office of the Courts, or an institution of higher education in this state.

The school enrollment criteria for successive school years resulted in dropping some students from the study sample, while the in-state residency criteria added some students back in the 7th grade cohort, as shown in the following table:

Selection Criteria	1 st Grade Cohort	7 th Grade Cohort
Enrolled in specified grade for the first time in AY 2005/06	36,197	38,385
Not enrolled in one or more years, AY 2005/06 – AY 2010/11	– 5,133	– 8,502
Not enrolled, but residing in Washington State in SFY 2011	n/a	+ 5,719
Selected for Study Cohort	31,064	35,602

MEASURING SCHOOL MOBILITY

To count the number of times a student moved between schools we chose to use month-to-month school code changes recorded in the P-20 database and to augment this information with school withdrawal codes to resolve ambiguous situations when school codes were missing in consecutive months. We established decision rules to count moves first within and then across academic years in a two-stage process, as follow:

Stage 1: Mobility within an academic year

1. An academic year begins in September and ends in June of the following year.
2. If school codes exist for month M and the next month (M+1) and they differ, then a move is counted.
3. If school codes are missing for month M and M+1, then no mobility is counted.
4. If a school code exists for month M but is missing for month M+1, we check the withdrawal code for month M. If there is a code for graduation, IEP, GED or deceased, then no mobility is counted. Otherwise, a move is counted.
5. If a school code is missing for month M but present for month M+1, then no mobility is counted.

Stage 2: Mobility across academic years

1. July and August are summer vacation, so we do not consider school mobility for this period.
2. If school codes exist for June and September, and they differ, then
 - a. If the move is from elementary to middle school or middle to high school *and* the schools are within the same school district; or if the move is an exit from the highest grade level of a school, then no mobility is counted.
 - b. Otherwise, a move is counted.
3. If a school code is missing for June, then we use May in place of June, and follow rule 2.
4. If a school code is missing for September, then we use October in place of September, and follow rule 2.
5. If school code exists for June, but is missing for both September and October, then we check the withdrawal code for June, July, and August. If it is graduation, IEP, GED, or deceased, then no mobility is counted. Otherwise, a move is counted.

OTHER MEASURES

Social Service Use

The receipt of social services from DSHS is recorded in the DSHS Client Services Database (CSDB) that was created and is maintained by the Research and Data Analysis Division using data from administrative data systems across the department. We used data on the receipt of TANF and Basic Food administered through the Economic Services Administration; Developmental Disabilities Services from the Developmental Disabilities Administration; and any service from the Children's Administration as well as those services provided to children in Foster Care. For a detailed description of these services, see the CSDB glossary of DSHS services maintained on-line at <http://clientdata.rda.dshs.wa.gov/>. For this report, we counted the receipt of a service at any time in three fiscal years, SFY 2006-2008, as an indication of social service use, regardless of the length of time or amount of service(s) received.

Risk Indicators

Risk indicator measures were created from the DSHS Integrated Client Database (Mancuso, 2014). Homelessness is:

- **Homelessness** – Information about the housing status and shelter costs maintained in the DSHS Economic Services Administration's Automated Client Eligibility System (ACES) was used to flag clients who appear to be homeless. This includes those living on the streets, in emergency shelters, and temporarily in the homes of others (e.g., couch surfing).
- **Behavioral health risk indicators** – Data on diagnoses, treatment, and prescriptions from the Health Care Authority and the Division of Behavioral Health and Recovery were used to flag potential mental health problems and substance abuse. Alcohol or drug-related arrest records from the Washington State Patrol were used to flag possible substance abuse as well.
- **Criminal justice involvement** – Arrest data from the Washington State Patrol (WSP) identified adolescents who had been arrested for felony or gross misdemeanor offenses and recorded in the WSP arrest database. Misdemeanors may be understated in the analyses since local jurisdictions are not required to report them to the WSP. In addition, the Washington State Institute for Public Policy compiles data on involvement with the juvenile justice system from the Administrative Office of the Courts, the DSHS Juvenile Rehabilitation Administration, Washington State Patrol, and the Department of Corrections. For DSHS clients included in the 7th grade cohort, we used these combined data to determine whether a student was involved with the juvenile justice system at least once in SFY 2006 – 2008.

School Performance

Several indicators of school performance in AY 2008/09 were obtained from data in EDRC's P-20 database.

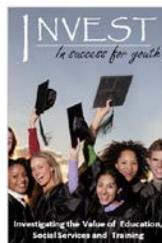
- **Performance on standardized tests** – We measured the number of students who took the standardized tests in reading and mathematics in AY 2008/09 and their performance relative to the standard for that grade. For students in the 1st grade cohort who had experienced annual grade progression, the test in that academic year would be the standard 4th grade test, but for students who had not advanced, the test may have been for an earlier grade level. For the 7th grade cohort, we used only scores for students who took the 10th grade test.
- **Grade Point Average (GPA)** – GPAs were available only for our 7th grade cohort. We used the last reported GPA in AY 2008/09. See Technical Notes in Coker *et al.*, 2012 for information on GPA reporting issues.
- **Unexcused absences** – Unexcused absences in AY 2008/09 were obtained from OSPI's Core Student Records System (CSRS) database for both cohorts. Despite known under-reporting of unexcused absences, we included the measure in this report since it has been deemed to have adequate face validity. See Technical Notes in Coker *et al.*, 2012 for more information.
- **Grade progression** – Whether or not a student advanced to a higher grade level in AY 2008/09 compared to his/her grade in the previous academic year was used as a measure of grade progression.

Other school performance indicators from the combined INVEST databases were:

- **Drop-out rates** – The Research and Data Analysis Division collaborated with the Office of the Superintendent of Public Instruction to construct a measure of "drop-out" consistent with the measure used at the district and state level. This measure includes students whose final enrollment code indicated a definite drop-out, unknown, no show, or transferred but still appear to be living in state using other administrative data. Persons who receive a GED are included in the drop-out rate. We distinguish between known and probable drop outs. See Technical Notes in Coker *et al.*, 2013 for more information.
- **Graduation rates** – We report on both on-time and delayed graduation rates based on data as of the end of AY 2010/11. See Technical Notes in Coker *et al.*, 2013 for more information on the construction of graduation rates.

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