

## Connections to Employment and Education

### Six Year Outcomes for 12<sup>th</sup> Grade Special Education Students Served by DSHS

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THE TRANSITION FROM HIGH SCHOOL TO ADULT LIFE presents an important opportunity to support young people with developmental disabilities. Students who receive special education services through the public school system are entitled to specialized transition services.<sup>1</sup> For students served through the Department of Social and Health Services (DSHS) Developmental Disabilities Administration (DDA), employment services provided by the DSHS Division of Vocational Rehabilitation (DVR) either during or after high school may be part of the transition service package. New data infrastructure makes it possible to address two questions: 1) How are special education students served by DSHS faring in the transition to adulthood and 2) Does receipt of DVR services improve post-high school connections to work and school for students served by DDA?

### Key Findings

We examined the educational and employment experiences of special education students in Washington State who were first time 12<sup>th</sup> graders in Academic Year (AY) 2005/06 and served by DSHS at some point between State Fiscal Year (SFY) 2006 and 2008.

We found that:

- **Most students completed their high school education and one-third had at least some college.**  
The majority of students (78 percent) received a high school diploma, a certificate of Individualized Education Program (IEP) completion, or a General Equivalency Diploma (GED), though fewer than half of graduates and IEP certificate completers finished high school in the year they first entered 12<sup>th</sup> grade.
- **About half of the students were working or in college six years after entering the 12th grade.**  
Over one-third were working fairly regularly (at least 3 of the 4 quarters in SFY 2012), while 12.5 percent worked half the year or less. About 3 percent were enrolled in college and not working.
- **DDA clients who received DVR services were more likely to be connected to work or school.**  
Specifically, DDA clients who received DVR services during or after high school were two to four times more likely than non-DVR recipients to be working or in college six years after entering 12th grade. This suggests DSHS employment services may improve later connections to work and school. However, a statistical model controlling for other factors—such as level of functioning—would be needed to determine the specific effects of DVR services and these other factors.

<sup>1</sup> Washington Administrative Code (WAC) 392-172A01190 and Part 300.43 of Title 34 of the Code of Federal Regulations.



## STUDY POPULATION

The study population was identified through the INVEST database,<sup>2</sup> which contains all individuals meeting the following criteria: 1) received a DSHS service between State Fiscal Year (SFY) 2006 and 2008, 2) were under the age of 26 the first year they received a DSHS service in that three-year period, and 3) attended a public school or college in Washington State at any point between Academic Year (AY) 2004/05 and AY 2010/11.

The following steps were taken to select the study population for this analysis:

**Step 1.** Identified all Washington State high school students who 1) received special education services at any point between AY 2005/06 and AY 2007/08, 2) entered the 12<sup>th</sup> grade for the first time during AY 2005/06, and 3) were still alive and residing in Washington State at some point during SFY 2012. We restricted the population to first time 12th graders because special education students can remain in high school through the age of 21 and be enrolled in 12th grade for multiple years.

**Step 2.** We examined the proportion of students who received DDA services by the primary disability that qualified them for special education. We removed individuals from the analysis whose primary disabilities fell into one of the following categories: unknown, emotional/behavioral disorder (EBD), specific learning disability, or a sensory disability. This was done after establishing that individuals in these categories were disproportionately likely to *not* be receiving DDA services (representing only 4 percent of all students receiving DDA services). This resulted in a study population of 1,667 students.

### Total First Time 12th Grade Special Education Students in AY 2005/06 Served by DSHS between SFY 2006 and 2008

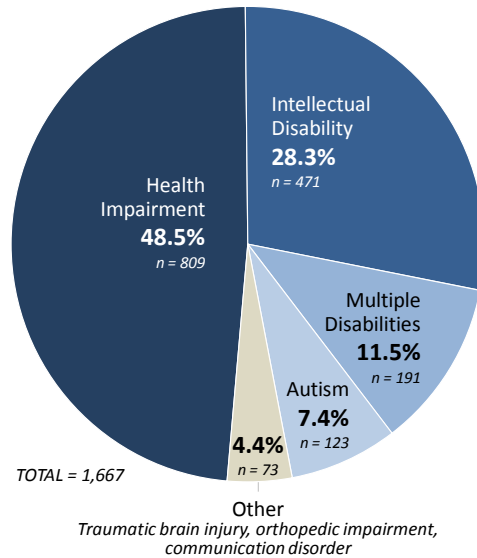
<b>Column D. Percent of students in each disability category that received DDA services</b> <i>Column B divided by Column A</i>				
<b>Column C. Percent of all DDA Service Recipients by Disability</b> <i>Column B divided by 720</i>				
<b>Column B. Number of Students Receiving DDA Services by Disability</b> <i>n = 720</i>				
<b>Column A. Number of Students by Disability</b> <i>n = 3,994</i>				
<b>Groups EXCLUDED from study population</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Unknown qualifying disability	31	0	0.0%	0.0%
Emotional/behavioral disorder (EBD)	260	3	0.4%	1.2%
Specific learning disability	1,951	22	3.1%	1.1%
Sensory disability (deaf, blind, visually impaired, or hearing impaired)	85	4	0.6%	4.7%
<b>TOTAL (excluded groups)</b>	<b>2,327</b>	<b>29</b>	<b>4.0%</b>	<b>1.2%</b>
<b>Groups INCLUDED in study population</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Orthopedic impairment	25	13	1.8%	52.0%
Health impairment	809	121	16.8%	15.0%
Intellectual disability	471	306	42.5%	65.0%
Multiple disabilities	191	161	22.4%	84.3%
Communication disorder	25	4	0.6%	16.0%
Autism	123	80	11.1%	65.0%
Traumatic Brain injury	23	6	0.8%	26.1%
<b>TOTAL (included groups)</b>	<b>1,667</b>	<b>691</b>	<b>96.0%</b>	<b>41.5%</b>

<sup>2</sup>The INVEST database is a cross-agency limited data set linking individual-level data from the Washington State DSHS Integrated Client Database (ICDB) to individual-level data from the P-20 education data warehouse in the Washington State Education Research and Data Center (ERDC) of the Office of Financial Management (OFM).

## Primary Qualifying Disability

**The most common qualifying disability for special education was a health impairment, followed by intellectual disabilities.**

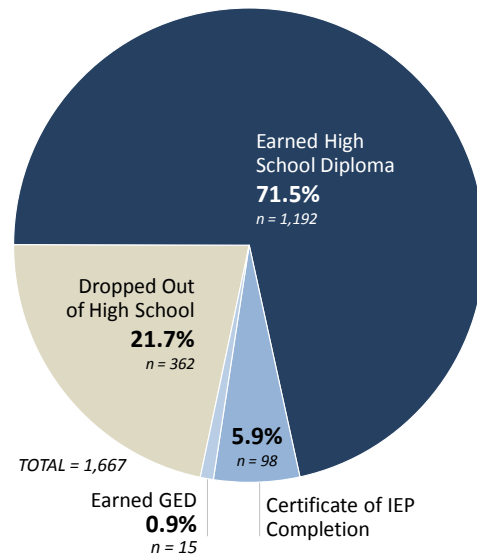
Students enrolled in special education services are identified as qualifying for these services with one of 14 possible disabilities as authorized by the 2004 Individuals with Disabilities Education Improvement Act (IDEA) (Public Law 108-44).<sup>3</sup> School data shows that almost half of the study population qualified for special education services based on an educational diagnosis of a health impairment,<sup>4</sup> 28 percent with an intellectual disability, 11.5 percent with multiple disabilities, 7.4 percent with autism, and the remainder with orthopedic impairments (usually referring to cerebral palsy), traumatic brain injuries, or a communication disorder. If students had more than one qualifying disability listed in a given year (a rare occurrence), they were categorized based on the most commonly-cited disability (*please see Technical Notes on page 8*).



## High School Outcomes

**The majority of students—78 percent—received a high school diploma, certificate of IEP completion, or GED.**

The majority of the 1,667 students in the study population (71.5 percent) graduated from high school with a regular diploma, and an additional 5.9 percent received certificates of Individualized Education Program (IEP) completion.<sup>5</sup> An additional 21.7 percent dropped out of high school. Although Washington State public schools report General Equivalency Diploma (GED) earners as drop-outs, they were considered separately in this analysis. We identified 15 individuals (less than 1 percent of students in the study population) who went on to earn their GED at a community college. Due to data limitations, we do not know the year in which these students earned their GEDs.



<sup>3</sup>For more details on the educational diagnoses and special education in Washington State, please see Coker, L., et al. (2013). "Educational Disabilities among at-risk students: The overlap between social service use and special education participation among school-aged children in Washington State," Olympia, WA: WA State Dept. of Social and Health Services, Research and Data Analysis Division, <http://publications.rda.dshs.wa.gov/1480/>.

<sup>4</sup>A health impairment is defined as an impairment in educational performance due to chronic or acute health problems, including, for example, attention deficit hyperactivity disorder, epilepsy, or Tourette's syndrome ([www.nichcy.org](http://www.nichcy.org)).

<sup>5</sup>A certificate of Individualized Education Program (IEP) completion indicates that the student has met a set of standards specific to his or her level of ability rather than a general benchmark of achievement.

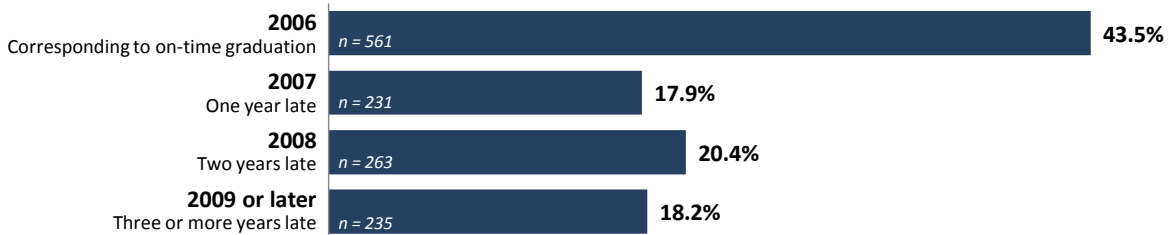
## Delayed Graduation and Individualized Education Program (IEP) Completion

*Less than half of students who graduated or received a certificate of IEP completion finished high school in the year they first entered 12<sup>th</sup> grade.*

Students who receive special education services are entitled to public schooling until the age of 21, with a particular focus on transition services and skill-building that will lead to post-high school employment or further education. Among the 1,290 individuals in the study who received a high school diploma or certificate of IEP completion, fewer than half (43.5 percent) completed high school in AY 2005/06, corresponding to on-time graduation. Another 17.9 percent completed one year late, 20.4 percent completed two years late, and 18.2 percent took three or more years to complete high school.

### High School Graduates and IEP Certificate Completers Only

TOTAL = 1,290



The average age in the last year of high school enrollment for both graduates and drop-outs was just under 19 years-old (18.9 and 18.7, respectively). By contrast, individuals who received certificates of IEP completion were slightly older, with an average age of 19.8 years-old.

### Average age on January 1 of high school completion year

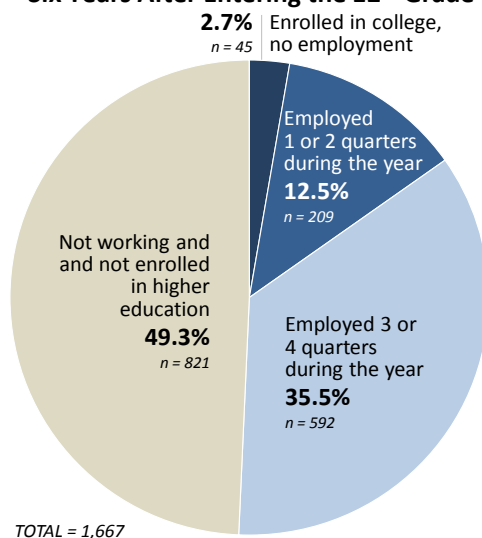
Average age on January 1 of graduation year	18.9 years
Average age on January 1 of IEP completion year	19.8 years
Average age on January 1 of dropout year	18.7 years

## Connecting to Employment and Education

*About half the students were working or in college six years after entering 12<sup>th</sup> grade for the first time.*

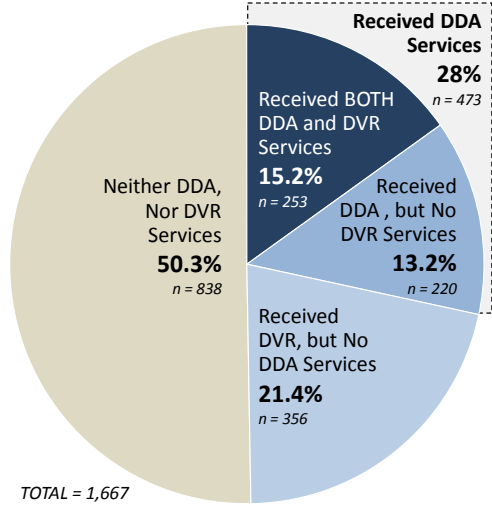
A measure was created that placed students into one of four categories six years after entering 12<sup>th</sup> grade: 1) not working and not in college, 2) enrolled in college and not employed, 3) employed 1 or 2 quarters during the year, and 4) employed 3 or 4 quarters during the year. Slightly under half of the study population (49.3 percent) was neither working nor enrolled in higher education. Over a third (35.5 percent) were working fairly regularly (at least 3 of the 4 quarters in SFY 2012), while 12.5 percent worked half the year or less. The remainder (2.7 percent) were enrolled in college in AY 2011/12 and not working. The analyses that follow present the outcome as a binary measure (connected to work/school or not).

### Employment and College Enrollment Six Years After Entering the 12<sup>th</sup> Grade



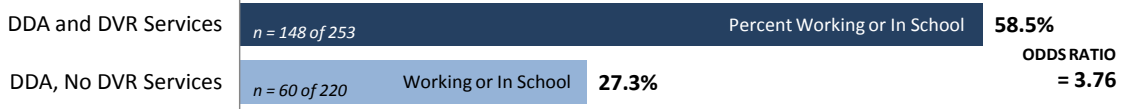
**DDA and DVR Services During High School**  
**DDA clients who received DVR services during high school were more likely to be connected to work or college six years after entering 12<sup>th</sup> grade.**

Services provided through the DSHS Division of Vocational Rehabilitation (DVR) during high school were likely part of a school-based transition plan. All 609 students who received DVR services (including non-DDA clients) received vocational case management (see Table 2 on page 6). Common DDA services received while in high school also include personal care, respite, or therapy. DDA clients who received DVR services during high school were almost four times more likely than non-DVR recipients to later be connected work or college (Odds Ratio = 3.76; please see page 7 for Odds Ratio definition).



**DVR Services During High School for DDA Clients and Later Connection to Work or School**

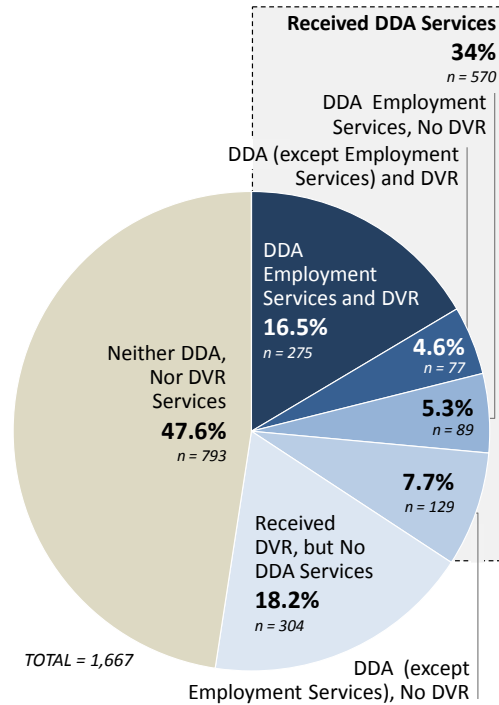
Only those in the study population who received DDA services during high school • TOTAL = 473



**DDA and DVR Services After High School**

**Recipients of DDA employment services who also received DVR services after high school were more likely to be connected to work or school.**

After completing high school, some students continue to receive employment services or become eligible for additional employment support. More than half of the study population received services from DDA, DVR, or both DDA and DVR after high school, and about one-third received DDA services. A focus on the 364 students who received DDA employment services after high school reveals that DVR services may continue to play an important role after high school. In particular, DDA employment services clients are more than twice as likely to be connected to work or college six years after entering 12<sup>th</sup> grade if they also receive DVR services (Odds Ratio = 2.43; 69.5 percent compared to 48.3 percent).



**DVR Services After High School for DDA Clients and Later Connection to Work or School**

Only those in the study population who received DDA employment services after high school • TOTAL = 364



## SUPPORTING TABLES

TABLE 1.  
Study Population Demographic Information, AY 2005/06

	TOTAL	PERCENT
<b>TOTAL N</b>	<b>1,667</b>	100%
<b>Gender</b>		
Female	647	38.8%
Male	1,020	61.2%
<b>Refugee or Immigrant</b>	9	0.5%
<b>Received bilingual education in 2006</b>	20	1.2%
<b>Race/ethnicity (based on K-12 education data)</b>		
American Indian/Alaskan Native	64	3.8%
Asian	77	4.6%
Black/African American	99	5.9%
Hispanic/Latino any race	137	8.2%
White	1,272	76.3%
2 or more races	12	0.7%
Not provided	6	0.4%
<b>Age on January 1, 2006</b>		
17 years	586	35.2%
18 years	778	46.7%
19 years	303	18.2%

TABLE 2  
Services provided by DDA and DVR *during* high school

	TOTAL	PERCENT
TOTAL	<b>1,667</b>	100%
<b>Developmental Disabilities Administration (DDA)</b>		
DDA – Any paid services	473	28.4%
<i>Types of DDA paid services (among those with paid services; n = 473)</i>		
Personal care services	416	87.9%
Professional services	167	35.3%
Employment and day services	9	1.9%
Other community services	235	49.7%
Residential Habilitation Center (RHC) <sup>6</sup>	22	4.7%
Residential program	82	17.3%
Individual family services	116	24.5%
<b>Division of Vocational Rehabilitation (DVR)</b>		
No DVR services in High school	1,058	63.5%
Any DVR services	609	36.5%
<i>Types of DVR services (among those with DVR services; n = 609)</i>		
Placement support	68	11.2%
Support services	87	14.3%
Training and Education support	28	4.6%
Medical and Psychological services	11	1.8%
Vocational Assessment	215	35.3%
Vocational Case Management	609	100.0%

<sup>6</sup> RHC services include respite services received in institutional settings and are not always permanent placements.

TABLE 3

**Services provided by DDA and DVR after high school**

	TOTAL	PERCENT
TOTAL	1,667	100%
<b>Developmental Disabilities Administration (DDA)</b>		
Any paid DDA services	570	34.2%
<i>Types of DDA paid services (among those with paid services; n = 570)</i>		
Personal care services	462	81.1%
Professional services	168	29.5%
Employment and day services	364	63.9%
Other community services	271	47.5%
Residential Habilitation Center (RHC)	19	3.3%
Residential program	84	14.7%
Individual family services	51	8.9%
<b>Division of Vocational Rehabilitation (DVR)</b>		
No DVR services after high school	1,011	60.6%
Any DVR services	656	39.4%
<i>Types of DVR services (among those with any DVR services; n = 656)</i>		
Placement support	275	41.9%
Support services	148	22.6%
Training and Education support	130	19.8%
Medical and Psychological services	32	4.9%
Vocational Assessment	154	23.5%
Vocational Case Management	651	99.2%

**Q. WHAT IS AN ODDS RATIO?****EXAMPLE: Calculating the Odds Ratio for Differences in the Probability of Being Employed or in College**

- Among special education students who received DDA employment services after high school, 69.5 percent of those who also received DVR services and 48.3 of those who did not receive DVR services were working or in college six years after first entering the 12<sup>th</sup> grade.
- Odds Ratio =  $(.695/(1-.695)) / (.483/(1-.483)) = 2.43$ .
- Interpretation: Among students who received DDA employment services after high school, the odds of being employed or in college are more than twice as high for those who received DVR services compared to those who did not.

## THE INVEST DATABASE

The Education Research and Data Center (ERDC) of the Office of Financial Management provided the data linkage between the DSHS client population and the information stored in the P-20 data warehouse, including all of the K-12 and postsecondary data. This included enrollment and completion records through AY 2011/12 for Washington State 2-year colleges from the State Board for Community and Technical Colleges (SBCTC) and for Washington State 4-year colleges from the Public Centralized Higher Education Enrollment System (PCHEES).

## STUDY POPULATION

The study population was selected from the population of all public school students in Washington State during the 2005/06 academic year who fulfilled the following criteria:

1. Received a DSHS service between SFY 2006 and 2008 and linked to data in the P-20 data warehouse.
2. Were enrolled in the 12<sup>th</sup> grade for the first time in AY 2005/06.
3. Received special education services through the public schools in AY2005/06, 2006/07, or 2007/08.
4. Were judged to be still alive and residing in Washington State at some point during SFY 2012 and/or AY 2011/12. An individual was determined to have in-state residence if he or she 1) had administrative records in any of the following systems in SFY 2012: DSHS, Health Care Authority, Employment Security Department, Washington State Patrol, Administrative Office of the Courts, or the Department of Corrections and/or 2) was enrolled in a Washington State public high school or institution of higher education in AY 2011/12.
5. Had a primary special education eligibility diagnosis that did *not* include emotional/behavioral disorders, specific learning disabilities, or sensory disabilities.<sup>7</sup>

## MEASURING CONNECTIONS TO EMPLOYMENT AND EDUCATION

Employment status six years after first entering 12<sup>th</sup> grade was obtained by combining two sources of data for SFY 2012: the Employment Security Department (ESD)'s Unemployment Insurance wage data and the County Human Resources Information System (CHRIS) data. CHRIS contains employment data for individuals receiving services through DDA employment and day programs and was used to supplement that ESD data. Enrollment in post-secondary education was measured for AY 2011/12 using SBCTC data on community college enrollment and PCHEES data on enrollment in public 4-year colleges in Washington State. The post-secondary enrollment measure for this study did *not* include data on attendance at private in-state colleges or public out-of-state colleges.

## PRIMARY QUALIFYING DISABILITY FOR K-12 SPECIAL EDUCATION SERVICES

Of the total population of AY 2005/06 first-time 12<sup>th</sup> graders enrolled in special education, a very small minority (less than .05 percent) had more than one qualifying disability recorded during the course of the academic year. In this case, the disability that was recorded most often was selected as "primary". A small portion of clients had an equal number of different disability labels during the year. In all cases, when a decision had to be made about a primary disability when two or more were listed with equal frequency, the following business rules were used:

- Emotional/behavioral disorder took precedence over health impairment, specific learning disability, and multiple disabilities (EBD is more specific and gives more information).
- Intellectual disability took precedence over health impairment, emotional/behavioral disorder, specific learning disability, and multiple disability (intellectual disability is more global, likely more long-lasting, descriptive, and relevant to educational outcomes).
- Health impairment took precedence over specific learning disability, hearing impairment, and communication disorder.
- Specific learning disability took precedence over hearing impairment, visual impairment and communication disorders.
- Multiple disabilities took precedence over health impairment and hearing disorder.

## RDA CONTACT

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Copies may be obtained at [www.dshs.wa.gov/rda/](http://www.dshs.wa.gov/rda/) or by calling DSHS' Research and Data Analysis Division at 360.902.0701.

Please request REPORT NUMBER 5.38

<sup>7</sup> Specific Learning Disabilities (SLD) made up 48.8 percent of the original special education population, with EBD characterizing 6.5 percent and sensory disabilities 2.1 percent of the total.