
2nd Annual

Educational Outcomes Evaluation of the Colorado Division of Youth Services

Regarding Committed Youth

Discharged in

Fiscal Year 2017-18

July 1, 2019



COLORADO
Division of Youth Services
Office of Children, Youth & Families

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Statutory Reporting Requirements

Section 19-2-203(6), C.R.S.

The Colorado Department of Human Services (CDHS or Department), Office of Children, Youth and Families (OCYF or Office), Division of Youth Services (DYS or Division) has prepared a report on educational outcomes for discharged youth in response to Section 19-2-203(6), C.R.S.. Associated legislation (House Bill 18-1010) was signed into law on March 7, 2018.

On or before July 1st 2018, and on or before each July 1st thereafter, the Department of Human Services shall collect the recidivism data and calculate the recidivism rate and the educational outcomes for juveniles committed to the custody of the department who complete their parole sentences and discharge from department supervision.

Introduction

This report serves as the second annual report on educational outcomes, for committed youth served, and subsequently discharged from the Division of Youth Services. The inaugural report was released in July 2018.

Educational Programming in Juvenile Justice Settings

In 2015, the United States Department of Education and United States Department of Justice collaboratively published “Guiding Principles for Providing High-Quality Education in Juvenile Justice Secure Care Facilities” which indicates:

“on any given day in 2011 there were still more than 60,000 young people detained or committed to juvenile justice residential and secure care youth centers. Many of these youths have experienced abuse or neglect, unsafe neighborhood environments, homelessness, and/or involvement in the child welfare system. A large percentage of committed youths exhibit mental health conditions and have, historically, failed to receive mental health services. In addition, there are three to four times more students with disabilities who require special education and related services—such as those identified with emotional disturbance or specific learning disabilities—in the adjudicated youth population than among students in community schools.”

Furthermore, it is estimated that over half of justice-involved youth are below grade level in reading and math, that sixty percent (60%) have repeated a grade, and (as quoted above) one-third (1/3) require special education services. Another complicating factor was found in a 2008 study by Krezmien, Mulcahy, and Leone that cited eighty percent (80%) of incarcerated youth had been, prior to their incarceration, suspended from school, and 50% of youth had been expelled.

As these figures demonstrate, it is probable that incarcerated youth have experienced several negative school encounters prior to reaching the DYS school doors.

DYS Educational Programming

The Division of Youth Services (DYS) is responsible for the care and supervision of detained youth, committed youth and paroled youth. At each youth services center, juveniles are provided access to educational services; however, the oversight and implementation of the educational services is differentiated based on the specific population that is served by the youth center. The Division operates three general youth center types: detention-only, commitment-only, and multi-purpose youth centers.¹

YOUTH CENTERS SERVING DETAINED YOUTH

Per the Children's Code, "the school district in which the facility is located [will] cooperate to ensure that each juvenile who is in **detention** is offered educational services at the grade level identified for the juvenile" (Section 19-2-402 (3), CRS 2016). [bold font added for emphasis]

Detention education is managed and staffed by the school district which works in cooperation with the Division of Youth Services youth center administration. The youth are enrolled in the school district until their release from the detention facility. The detention youth at each youth services center are provided education services as follows:

¹ Assessment centers are included in the "multi-purpose" youth center category; however, not all multi-purpose youth centers provide assessment services.

- Adams Youth Services Center: Brighton 27J School District
- Gilliam Youth Services Center: Denver Public Schools
- Grand Mesa Youth Services Center: Mesa County School District 51
- Marvin Foote Youth Services Center: Cherry Creek School District
- Mount View Youth Services Center: Jefferson County School District
- Platte Valley Youth Services Center: Weld County 6 School District
- Pueblo Youth Services Center: Pueblo 60 School District
- Spring Creek Youth Services Center: Harrison School District 2

YOUTH CENTERS SERVING COMMITTED YOUTH

Committed youth are also provided access to educational services. The oversight and implementation of those services is the responsibility of the Division of Youth Services, as opposed to local school districts. DYS either contracts with educational providers or hires state teachers and staff at the following secure, state-owned and operated youth centers serving committed youth:

- Grand Mesa Youth Services Center
- Lookout Mountain Youth Services Center
- Mount View Youth Services Center
- Platte Valley Youth Services Center
- Zebulon Pike Youth Services Center

Once a youth is committed to the Division of Youth Services, they undergo a battery of assessments at one of two assessment centers. Following the assessment period (on average, less than a month), most youth are placed in a secure, state-owned and operated commitment facility, which is overseen by DYS; a smaller percentage of youth are placed in a contract program and enrolled in a Facility School overseen by the Colorado Department of Education (CDE). CDE Facility Schools are overseen by the Office of Facility Schools, which is one of three offices under the Exceptional Student Services Unit at CDE. These schools are licensed by the CDHS Office of Early Childhood as Residential Child Care Facilities (RCCFs). Currently, there are forty (40) Facility Schools within the state of Colorado, which marks a decline from previous years.

During Fiscal Year 2017-18, following assessment, fifty-four percent (54%) of newly committed youth were placed directly into a secure, state-operated facility for their first treatment program, while 44% were placed directly into a contract program; this leaves 2% that were placed directly into the adult system, under the purview of the Colorado Department of Corrections².

² These are dual-sentenced youth, receiving both a youth sentence and an adult sentence.



IMPORTANT NOTE: The remainder of this report pertains to the educational outcomes of committed youth served by the Division. To provide a complete and clear picture of Division-wide educational programming, detention education services were briefly summarized on previous pages.

OVERLAPPING EDUCATION SYSTEMS, INFORMATION SYSTEMS, REPORTING REQUIREMENTS, PRIVACY LAWS, AND DATA SHARING LIMITATIONS

The overlap between public (or traditional) education, alternative school education, and DYS education, in serving justice-involved youth is evident; however, the systems are trifurcated in their student information systems and reporting requirements, while also being bound by data and education privacy laws prohibiting some information sharing. These are just a few of the many challenges faced by the juvenile justice education systems nationwide, including those within Colorado.

TRANSIENT YOUTH

An added complexity is the inherently (highly) mobile nature of DYS youth; specific to this report's cohort, the average number of residential placements is 6.4 placements. This means that youth in this group experienced between six and seven placements, alone, while committed to the Division. On-going research continues to indicate that mobility impacts learning and education outcomes. A 2017 report released by CDE, titled "High Mobility Youth," indicates that students who change high schools *only once* are less than half as likely to graduate as their peers.

COMPLEX POPULATION

The DYS committed population mimics national trends as it relates to the youth served in commitment youth centers. These youth are, in general, committed at older ages, and are under-credited upon arrival, when compared to their similar-aged peers attending traditional public/private schools. Generally, a secondary student earns five to six credits per school year, with students earning less considered under-credited and at-risk of not graduating in a four-year time frame. Those same traditional schools serve approximately 13% of their students who have Individual Education Programs (IEPs) necessitating special education services, whereas **over 30% of the youth in DYS schools have IEPs** and require special education services. The demonstrated complexities of this population only continue when examining mental health and substance abuse treatment needs. For instance, when examining youth newly committed to DYS during fiscal year 2017-18, **sixty-four percent (64.4%) had mental health treatment needs** requiring professional health intervention (as measured by the Colorado Client Assessment Record or CCAR), and **86.4% were assessed as having substance abuse needs** that required treatment (as measured by the Juvenile Automated Substance Abuse Evaluation or JASAE).

HIRING AND RETAINING QUALITY STAFF

The gaps in youth education and learning, the need for additional supports to learn effectively and access content, coupled with the need to address social emotional learning within the classroom, requires highly qualified teachers. DYS hiring practices include assuring core content teachers are content experts and are Highly Qualified as defined by the No Child Left Behind Act of 2001 (NCLB). However, there is a noted teaching shortage in Colorado, which has created ongoing struggles impacting the Division's ability to hire in a timely fashion. In fiscal year 2017-18, DYS had a 22% vacancy for classroom teachers. In one school, a hard-to-fill position for Science was open for the entire school year.

This ongoing state-wide teaching shortage prompted CDE to collaborate with Colorado Department of Higher Education (CDHE) to respond to legislation (Colorado House Bill 17-2003), concerning a strategic action plan to address teacher shortages in Colorado. Part of this work resulted in data indicating:

- *“Approximately 81 percent of urban/suburban districts, 60 percent of rural/small rural districts, and 63 percent of BOCES ... had vacant educator positions unable to be filled at the beginning of the 2017- 2018 school year.”*
- *“Approximately 66 percent of urban/suburban districts said they had filled vacancies with long-term substitutes at the beginning of the 2017-2018 school year. Forty percent of rural/small rural districts and 25 percent of BOCES said they had staffed vacancies with long-term substitutes.”*

Specific to DYS, only 24% of current classroom teachers and Special Education coordinators were hired before 2016. Additionally, sixty percent (60%) of the current principals were new to their positions in FY 2017-18, and 75% of the current DYS Education Central Office staff possessed one year or less of experience in their respective positions.

DYS Educational Reporting - Challenges

EDUCATIONAL COHORTS VS. DISCHARGE COHORTS

A cohort, by definition, is a group of people who have something in common. In the field of education, the term more explicitly describes a group of students that progress through an academic program together; start together, end together, and look to achieve a similar end-result. In the research field, however, the term “cohort” often reverts back to the more basic sense of simply sharing a commonality. The cohort studied for this report is not an educational cohort, but rather a group of youth that discharged from the Division of Youth Services during the same fiscal year (FY 2017-18). The cohort is defined by having discharge dates in a common time frame. Table 1 outlines the factors that differentiate an educational cohort from a discharge cohort.

Table 1: Educational Cohorts vs. Discharge Cohorts

Factors that Differentiate	Educational Cohort	Discharge Cohort (used in this report)
Cohort Formulation	Dependent upon start date and grade entered	Dependent upon end date (discharge date)
Age	Largest differential is 1 year	Varies drastically
Expected Graduation Year	Same for all students in cohort	Varies drastically
Cohort Meaning	A group of students that progress through an academic program together, sharing a similar end goal.	A group of youth that merely share the same discharge date (1 year time frame)
Time Spent Progressing Towards Goal	Same/similar for all students; most often aligning with academic calendar year	Varies drastically

When educational outcomes are calculated and reported (i.e., progress, growth, achievement), the most common approach utilizes educational cohorts. The literature, norms, and resources available to conduct a study using an educational cohort is vast; and very much to the contrary when using a discharge cohort. Due to many factors and complexities that make DYS educational outcomes reporting different than traditional public/private schools and districts, the Division must report outcomes using a discharge cohort approach. The committed youth served by DYS, and their case circumstances, do not allow for an educational cohort study design.

Specific challenges to educational outcomes reporting by discharge cohort include, but are not limited to, the following:

- Youth age varies drastically at start date (youngest was 13.2 years old; oldest was 20.0 years old);
- Youth age varies drastically at end date (youngest was 15.2 years old; oldest was 21.0 years old);
- Many youth reached DYS already multiple grade levels (or credits) behind, with expected graduation years varying drastically--even within the same age groups;
- Time spent progressing towards an educational goal varies drastically (minimum time spent with DYS was 1 month for a youth in the cohort; maximum time spent with DYS being 6.8 years for a youth in the cohort).

In addition to these four examples, justice system-involved youth pose additional and unique challenges which not only impact educational reporting (record tracking, data collection, analyses, comparisons), but also have a real impact on programming and learning. As the youth demographics are conveyed in the following section, the connection between serving a complex population and reporting issues is apparent.

In summary, three main topics contribute to the difficulty relating to reporting on the educational outcomes of committed youth:

- Discharge cohort complexities;
- Youth-level complexities; and
- System-level complexities (as cited in the previous section) including various student information systems that do not interface, privacy laws, and inter-agency data sharing limitations.

Knowing and understanding these reporting difficulties prompted the Division to seek and obtain expert advice for recommended reporting options. The experts, the adopted advice, and outcomes are described fully, starting in the MAP Assessments: Methodology & Analysis section of this report.

Youth Demographics (Youth Discharged in FY 2017-18)

Cohort Summary

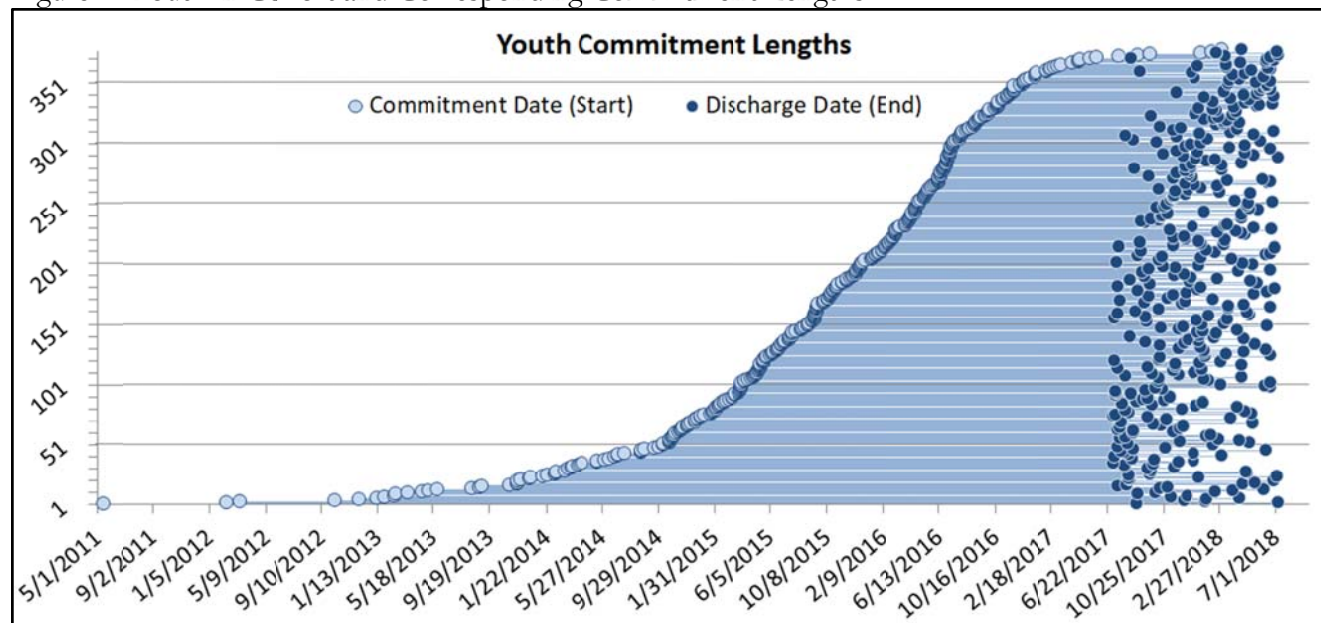
The Division of Youth Services serves three general population types: detained youth, committed youth, and paroled youth. This report focuses on three hundred seventy-six³ (376) committed and paroled youth who discharged from the Division's supervision during Fiscal Year 2017-18 (July 1, 2017 - June 30, 2018). These 376 youth most likely⁴ completed two separate court sentences: their commitment sentence and their parole sentence.

While this group of youth ended their supervision in the same one-year timeframe, the start dates for these youth vary drastically. For instance, one youth was committed (i.e., start date) in May 2011 while another youth was committed in February 2018; however, since both youth were discharged (i.e., end date) in FY 2017-18, they are part of the same discharge cohort. Figure 1 helps to illustrate the variation in cohort start dates, end dates, and length of time spent under DYS supervision.

³ Cohort size is 376 unique youth, but 377 discharges, as 1 youth discharged twice within the same FY.

⁴ Some cohort youth discharged without completing their commitment or parole sentences. Examples include: youth who were deported; youth that discharged to adult corrections mid-sentence; youth who had their sentences reconsidered by the court; youth who turned 21 years of age mid-sentence; youth who passed away.

Figure 1: Youth in Cohort and Corresponding Commitment Lengths



When the youth start dates (light blue circles), length of service (blue lines), and end dates (dark blue circles) are shown in the aggregate, the LOS variations are apparent, as well as the commonality that defines this cohort; all the dark blue circles occur within the FY 2017-18 time span. Figure 1 shows that some cohort youth were committed to the Division in mid-2011, while some cohort youth were not committed until 2017 or 2018. This creates a marked difference in youth start dates, which in turn creates extensive variation in length of service or LOS. To reiterate from the previous section, one youth spent one *month* with DYS (cohort minimum), while another youth spent nearly seven *years* with DYS (cohort maximum).

While it is clear that time spent under DYS supervision varies immensely within the cohort, total LOS does not easily translate into the amount of time youth received DYS educational services. As summarized in earlier sections, the Division is directly responsible for educational services provided to committed youth residing in secure, state-operated youth centers. Time a youth spends in a secure, state-operated youth center does not equate to his/her total LOS as shown in Figure 1. In fact, these youth (on average) spent 37% of their total LOS in secure, state-operated care⁵. The remaining time was spent in less secure, residential placements operated by contractors (10.1 months, on average) and in the community on parole (6.9 months, on average).

⁵ Thirty-seven percent (37%) equates to 9.9 months out of a total 26.9 months.

YOUTH DEMOGRAPHICS

Of the youth in this reporting cohort, the vast majority were male (84%), with females representing sixteen percent (16%). In terms of ethnicity and race, 35% were Caucasian youth, while 65% were minority youth (Hispanic 43%, African American 20%, American Indian/Native American 1.3%, Asian 0.5%, Native Hawaiian/Other Pacific Islander 0.5%). On average, youth were 16.9 years old at time of DYS commitment, and 19.1 years old at the time of discharge. Tables 2 and 3 contain a summary of this demographic information.

Table 2: Cohort Demographics (N=376)

Demographic	Percentage of Cohort (or Average for Age)	Number of Youth
Gender	Male:	83.8%
	Female:	16.2%
Minority Status	Minority:	65.4%
	Caucasian:	34.6%
Ethnicity/Race	Hispanic:	43.1%
	White:	34.6%
	African American:	19.9%
	American Indian/Native American:	1.3%
	Asian:	0.5%
	Native Hawaiian/Other Pacific Islander:	0.5%
Age at Commitment	16.9 years (youngest 13.2 years; oldest 19.9 years)	See Table 3
Age at Discharge	19.1 years (youngest 15.2 years; oldest 21.0 years)	

Table 3: Cohort Age at Commitment

Age at Commitment (Years Old)	Percentage of Cohort	Number of Youth
13	1.6%	6
14	6.6%	25
15	16.8%	63
16	23.1%	87
17	37.0%	139
18	12.0%	45
19	2.9%	11
Total	100%	376
Average Age at Commitment: 16.9 Years		

YOUTH TREATMENT NEEDS

Youth committed to the Division arrive with an array of unique treatment needs. Often times, these treatment needs are complex, co-occurring, and relate to mental health, substance abuse, offense(s) committed, and specific risk factors of re-offending. Table 4 provides a summary of these treatment needs, for youth in the cohort examined.

Table 4: Cohort Treatment Need Summary

Area of Treatment Need	Percentage of Cohort		Number of Youth
Mental Health	Formal Intervention Required:	51.1%	192
	Formal Intervention not Required:	48.9%	184
Substance Abuse	Treatment Required:	85.4%	321
	Treatment Not Required:	14.6%	55
Co-Occurring Treatment Needs (Mental Health and Substance Abuse)	Co-Occurring Treatment Needs:	44.7%	168
	Non Co-Occurring Treatment Needs:	55.3%	208
Sex Offense (SO) Specific Treatment	Youth Requiring SO-specific Treatment:	9.3%	35
	Youth not Requiring specific treatment:	90.7%	341
Commitment Offense Type	Person:	43.9%	165
	Property:	32.7%	123
	Weapon:	9.0%	34
	Drug:	6.9%	26
	Other:	7.4%	28
Commitment Offense Category	Felony:	60.1%	226
	Misdemeanor:	39.9%	150
Risk to Recidivate*	High Risk:	91.0%	342
	Moderate Risk:	7.2%	27
	Low Risk:	1.6%	6

*Valid percentages shown.

YOUTH SYSTEM INVOLVEMENT AND PLACEMENT HISTORY

In addition to demographics and treatment needs, another defining factor of youth served by the Division is prior “system” involvement and out-of-home placement history. System involvement, for purposes of this report, includes juvenile justice system involvement (e.g., probation, diversion, detention and commitment) and child welfare system involvement (e.g., social services). For this cohort of youth that discharged from DYS in FY 2017-18, a majority had previous child welfare out-of-home placements (64.6% or 243 of 376 youth). Of the 243 with prior placements, the average number of placements was three (2.93).

In terms of juvenile justice system involvement, nearly all cohort youth (98%) had prior DYS detention admissions, with the number ranging from 0 to 22 admissions, and an average of 5.5 prior detention admissions per youth. A majority of youth also experienced probation (81%) prior to

their commitment, with an additional 2% having experienced some form of diversion. Lastly, relatively few cohort youth (6.6%) had served a prior DYS commitment sentence (25 youth).

During their commitment, youth are served at various residential programs with varying security levels, depending on their individual treatment needs, case circumstances, and treatment progression. As such, most youth experience several placements and programs while serving their commitment sentence. In fact, for this group of youth, the **average number of residential placements experienced was 6.3** (maximum was 23 placements; minimum was one). This 6.3 average is conservative, as it excludes stays in jail, parole placements, and escapes that may have landed a youth in another state or country.

Within each placement, all youth receive a free and appropriate education. Educational services are provided at all residential programs, regardless of security level. The commitment continuum consists of state-operated and privately-operated youth centers (maximum security), staff-supervised programs (medium security, run by contractors), and community programs (minimum security, run by contractors). Ideally, as youth progresses through his/her commitment sentence, they “step down” to residential programs that are less secure than the previous program level. While stepping down may be beneficial to youth in some ways (community re-integration, parole transition, behavioral benefits), it’s problematic when it comes to ensuring that educational records are transferred and shared appropriately. As cited earlier in the report, mobility has been shown to negatively impact learning and education outcomes, with youth who change schools being less likely to graduate, when compared to their peers who have not changed schools.

Students with an Individualized Education Program (IEP)

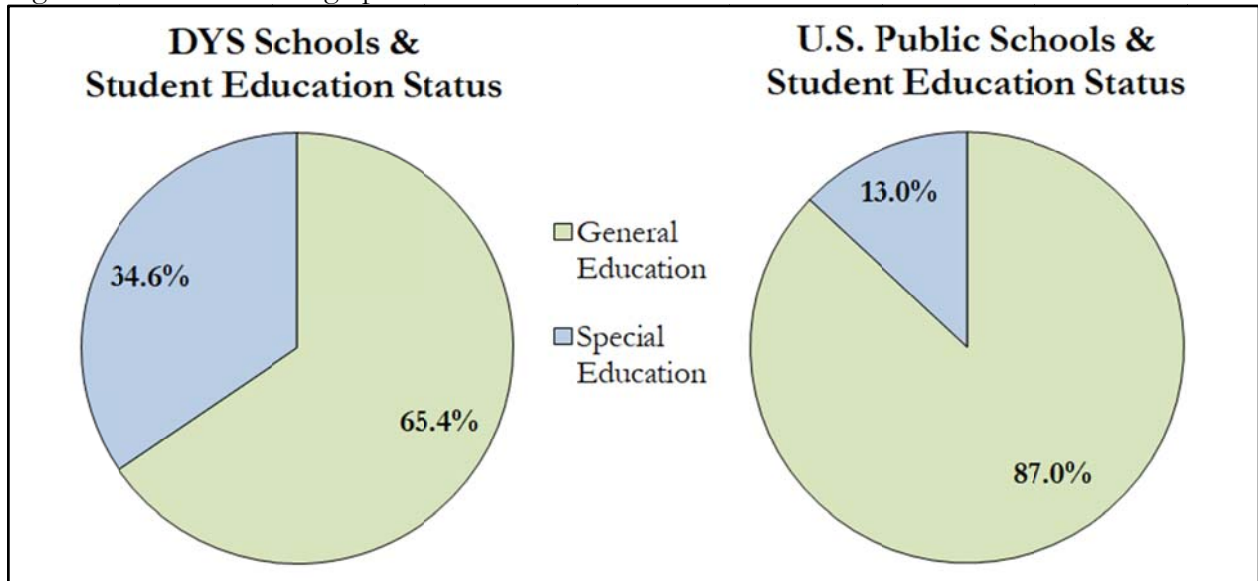
The vision of the Division of Youth Services Special Education Team is to provide individualized support and rigorous education opportunities, utilizing a holistic approach in order to develop resilient, independent, lifelong learners achieving their best personal outcomes. The Individuals with Disabilities Education Act (IDEA) and Colorado’s Exceptional Children’s Education Act (ECEA) have established the Individualized Education Program (IEP) as the structure for planning and implementing goals and objectives for children with disabilities.

Each IEP indicates a primary disability that is impacting the youth’s ability to access general education, and the IEP may include a secondary disability. The Colorado Department of Education (CDE) recognizes fourteen disabilities that have been identified under Exceptional Children’s Education Act.

Of the 376 cohort youth, 130 were involved in Special Education programming (34.6%) and had an Individualized Education Program (IEP). For context, the National Center for Educational Statistics reports 13% of all public school youth as being provided special education supports and

services. This means that DYS schools have nearly three times the amount of students requiring special education programming in public schools. This comparison is illustrated in Figure 2 that follows.

Figure 2: Youth Receiving Special Education Services



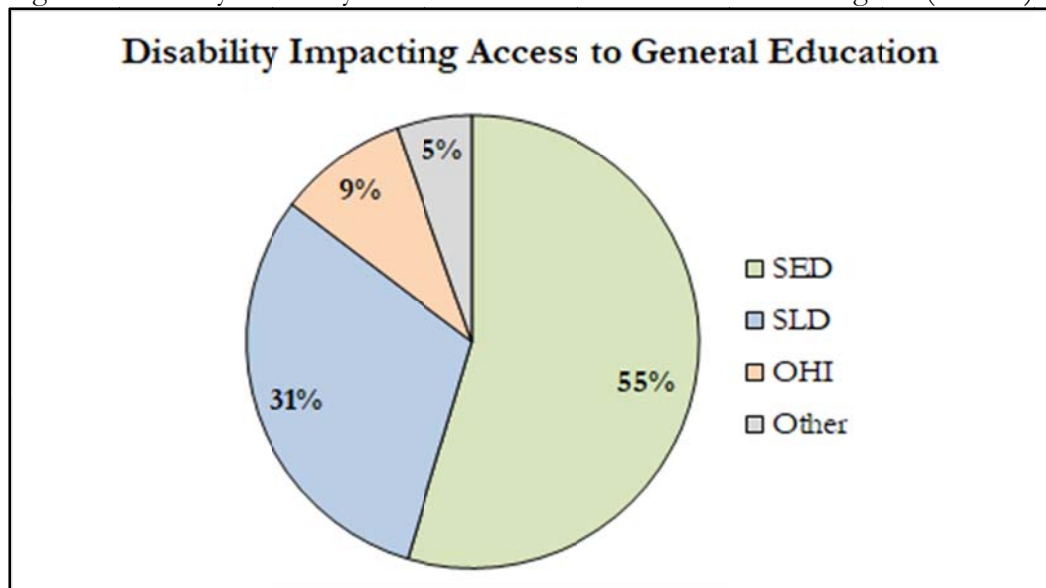
Among those receiving special education services nationally in public schools, the most predominant disability category is specific learning disability (SLD). However, among this specific cohort of DYS youth (N=130 with an IEP), the data show that serious emotional disability (SED) is the predominant disability, with seventy-one (71) youth or 54.6% having this listed as the primary disability on their IEP. Forty (40) youth or 30.8% had a specific learning disability (SLD), twelve (12) youth or 9.2% had an other health impairment (OHI), and seven (7) youth or 5.4% had another type of disability. In addition to these primary disabilities, many youth had a secondary disability listed on their IEP.

For a count of cohort youth, listed by the primary disability found on individual IEPs, see Table 5. To view a more general breakdown of primary disabilities within the cohort, refer to the Figure 3 pie chart.

Table 5: Disabilities Recognized by the Exceptional Children’s Education Act

Disability Category	Number of DYS Special Education Youth with Primary Disability	Percent of DYS Special Education Youth with Primary Disability
Autism Spectrum Disorder (ASD)	1	0.8%
Deaf-Blindness	0	0.0%
Developmental Delay (DD)	0	0.0%
Hearing Impairment, Including Deafness	0	0.0%
Infant/Toddler with a Disability	N/A	N/A
Intellectual Disability (ID)	1	0.8%
Multiple Disabilities (MD)	2	1.5%
Orthopedic Impairment (OI)	0	0.0%
Other Health Impairment (OHI)	12	9.2%
Serious Emotional Disability (SED)	71	54.6%
Specific Learning Disability (SLD)	40	30.8%
Speech or Language Impairment (SLI)	1	0.8%
Traumatic Brain Injury (TBI)	2	1.5%
Visual Impairment, Including Blindness	0	0.0%
TOTAL	130	100%

Figure 3: Primary Disability Listed on Individualized Education Program (N=130)



Average Age at Commitment and Expected Grade-by-Age

As described in the demographic section, the average age for this cohort of students, at the time of their DYS commitment (start date), was 16.9 years old (youngest 13.2 years old; oldest 19.9 years old). For that age average, the corresponding expected grade-by-age was 11th grade. Generally speaking, the expected grade-by-age can be thought of as the grade level at which a student would typically be expected to perform, based *solely* upon age. In general terms, this usually amounts to a youth's age minus five. So, a 16 year old would be expected to be in the 11th grade.

Educational Pathways for DYS Committed Youth

An array of assessment data are synthesized to understand each youth's unique circumstances upon DYS entry (or commitment), and those circumstances guide the development of their education plans. One tool utilized by DYS educational staff is the "DYS Educational Pathways" flowchart. Please refer to Appendix B for a visual depiction of this tool.

The goal of the DYS Educational Pathways tool is to help standardize and determine appropriate educational paths for youth newly committed to the Division of Youth Services. The resulting pathway is based on previous educational attainment, applicable IEP plans, scores on national standardized educational tests, and a youth's age at commitment. The pathway is specifically designed for youth committed to secure placement, but is considered best practice for all youth committed to the Division. The educational pathway that best fits a youth's circumstances upon

commitment is used *only* as a guideline; individual needs of youth are always considered, and youth may (and do) change paths as they progress through the commitment continuum. The three (3) educational paths available to DYS youth are the Post-Secondary Path, the High School Diploma Path, and the GED Path.

EDUCATIONAL OUTCOMES

The mission of DYS educational programming is to assure students have the skills and aptitudes to access the lives they dream of having, while concurrently supporting DYS' vision to achieve youth success and safer Colorado communities. In order to meaningfully measure the educational outcomes of committed youth, two indicators are presented in the following pages: one measure of academic achievement, and one measure of academic growth.

Academic achievement and growth are both important in the education realm, but each provides different information. Achievement shows a student's point-in-time accomplishment, measured against a specific standard, while growth shows student progress made over time. When achievement and growth are measured and reported together, it lends deeper insight into the impact educational programming has on student learning (2013; Emily Douglas).

The data used to determine the educational outcomes for youth, who have been committed to the Division, complete their parole sentences, and discharge from department supervision, includes two quantifiable measures:

(1) Academic Achievement Measure:

Academic Achievement in the form of a High School Diploma (HSD) signifying that high school requirements have been completed, or in the form of a General Education Diploma (GED) signifying the successful completion of the suite of GED tests. Meeting this end-result promotes access to the workforce and access to college for youth.

(2) Academic Growth Measure:

Academic Growth in the form of standardized test score results acquired from the Measures of Academic Progress (MAP) assessments. The DYS Education Program uses these standardized test scores from the MAP assessments to better understand student strengths, and areas of need in the classroom, while also monitoring for educational growth.

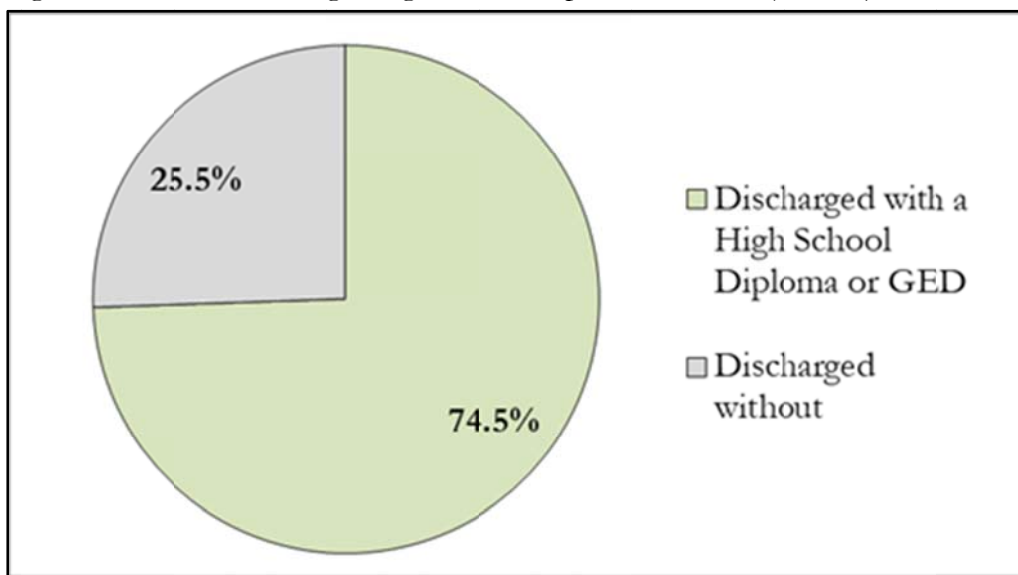
While all DYS commitment schools prepare students for and offer students state-mandated testing (e.g., the ACT - now replaced by the SAT; the PARCC - which is no longer given in Colorado; and the CMAS), the refusal rate for these tests is high, and the high mobility of students often prevents the testing results from being used in meaningful ways. As such, these tests are not used to measure student educational outcomes, nor are they used for internal accountability purposes.

ACADEMIC ACHIEVEMENT: High School Diploma (HSD) or General Education Diploma (GED) Attainment

For the 376 youth that discharged in fiscal year 2017-18, the following results emerged in regard to educational attainment.

- Nearly seventy-five percent (74.5%) discharged with a High School Diploma or a General Education Diploma (280 in total; 132 with a HSD and 148 with a GED)
- Twenty-six percent (25.5%) discharged without a High School Diploma or a General Education Diploma (96 in total)

Figure 4: Youth Achieving a High School Diploma or GED (N=376)



Of the 96 youth that did not attain a HSD or GED prior to Division discharge, eighty-five (85) met circumstances to be considered and discussed. These circumstances pertain to age at discharge, school/class enrollment upon discharge, discharge placement, and discharge type.

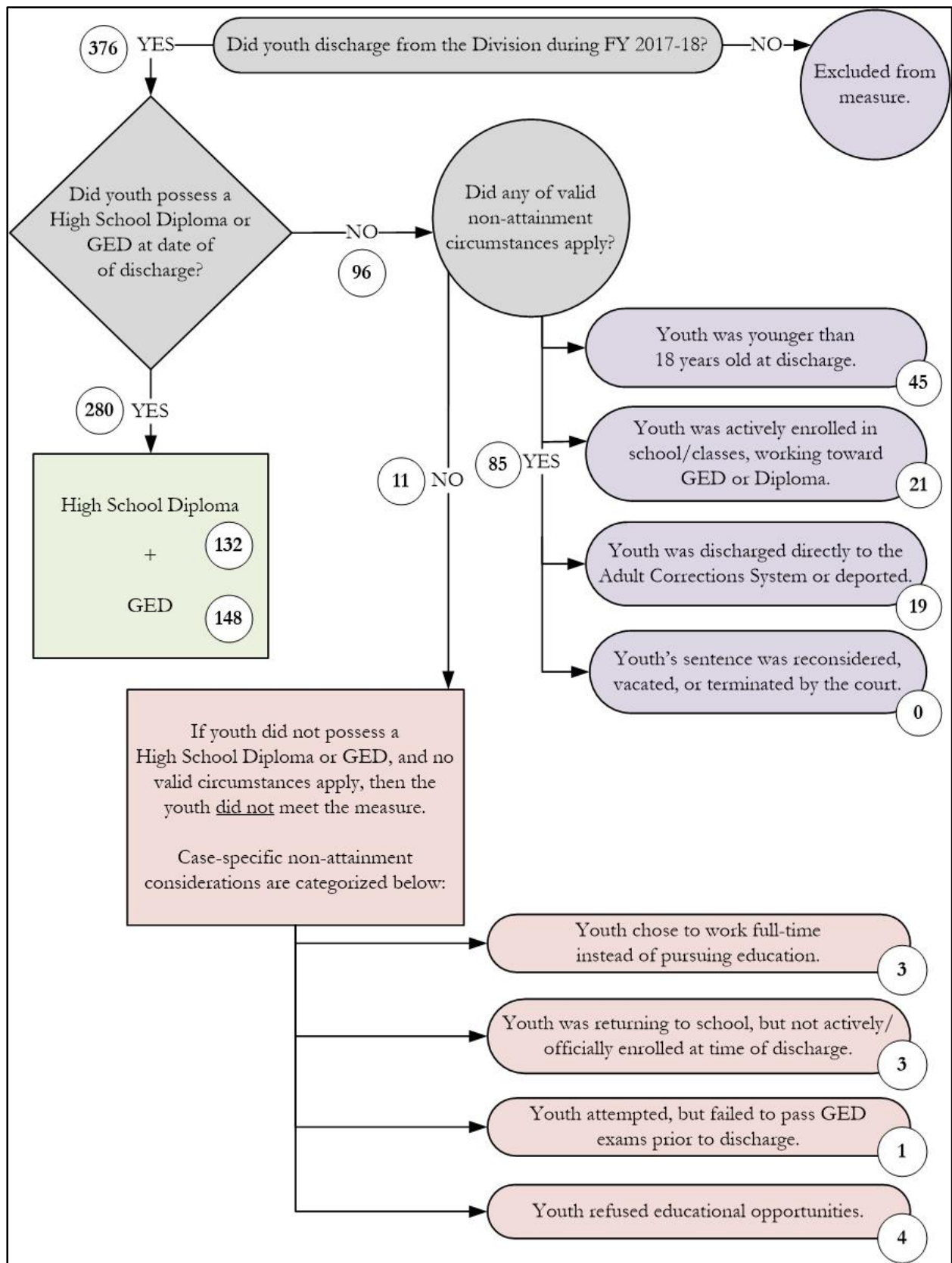
- **Age:** a youth would generally be too young to possess a High School Diploma or GED if younger than 18 years of age. In the U.S. public school system, the majority of students are age 18 at time of high school graduation. On average, youth in this cohort were 19.1 years old at the time of discharge (youngest in cohort was 15.2 years old; the oldest in cohort was 21.0 years old).
 - 45 (of 96) youth were under the age of 18;
- **School or Class Enrollment:** many youth are actively working towards their High School Diploma or GED at the time of discharge. Youth often discharge back into traditional schools, alternative schools, or are enrolled in college courses.
 - 21 (of 96) youth were actively enrolled in school or classes, working towards HSD/GED attainment;
- **Discharge Placement:** in the days and months leading up to either an adult system transfer (e.g., DYS discharge) or deportation, youth often reside in detention or jail placements awaiting movement. In these circumstances, the Division has reduced opportunity and access to youth to provide educational services that would meaningfully impact educational attainment. Furthermore, youth who discharged directly into the adult corrections system (Department of Corrections, or DOC), or have been deported, are not released back into the community; where educational attainment directly influences successful reintegration.
 - 19 (of 96) youth were discharged directly to adult corrections system;
- **Discharge Type:** youth who had their sentences reconsidered, vacated, or terminated by the court are generally not under the Division's custody long enough to have attained a High School Diploma or GED.
 - Zero (0 of 96) youth in this cohort.

Taking these circumstances into account, eighty-five (85 of 96) youth had valid reasons for non-attainment. The remaining 11 youth that discharged without a HSD or GED did not fall under the same aforementioned circumstances. Their case-specific considerations, in relation to non-attainment, are as follows:

- Three (3) youth chose to work full-time instead of pursuing an education;
- Three (3) youth were returning to school, but were not actively enrolled at the time of discharge;
- One (1) youth attempted but failed to pass the GED exams prior to discharge; and
- Four (4) youth refused educational opportunities.

Figure 5 that follows provides a visual flowchart of educational attainment results and non-attainment considerations.

Figure 5: Academic Achievement Flowchart



Another factor for consideration is youth that entered DYS commitment with a High School Diploma or GED already in-hand. This was true for nineteen (19) of the 376 cohort youth. With attainment already achieved, each one of the 19 students went on to complete career and technical education (CTE) programs while under the Division's care. Career and technical education programming gives students an opportunity to prepare for college and careers. It provides the students who have already attained a High School Diploma or GED with additional skills, knowledge and training to be successful in future careers. CTE program participation widens career choices for these individuals as well.

Of the nineteen students, four completed specific certificate programs. These certificate programs included WorkKeys Career Readiness, Telecommunications, Copper-Based Systems, Fiber-Optic-Based Systems, and American Hotel and Lodging Educational Institute (AHLEI) Guest Service Professional. The remaining 15 students each completed an average of three (3) classes, and 14 students participated in on-campus work experiences. One student was enrolled in an Adams State University "Introduction to Psychology" course.

CTE classes available to this cohort of DYS youth included the following:

- Bicycle Repair
- Business Ethics
- Business Principles and Management
- Business and Personal Finance
- Career Orientation
- Construction Trades Program
- Culinary Arts Program
- Decisions in Everyday Living I and II
- Driver's Education
- Financial Literacy
- Graphic Arts
- Hairstyling
- Horticulture/Landscaping Program
- Introduction to Home Entertainment:
Residential Audio/Video Systems
- Introduction to Network Cabling:
Copper-Based Systems
- Introduction to Network Cabling:
Fiber Optic-Based Systems
- Introduction to Careers
- Introduction to Culinary Arts
- Introduction to Telecommunications
- Life Choices
- Life Skills
- Marketing
- NCCER Foundations of Construction
- Photojournalism
- Transition Preparation
- Screen Printing/Graphics Program
- ServSafe
- Welding

Post-Secondary Student Opportunities

The Division had four (4) students in the cohort of interest who participated in post-secondary education opportunities.

- Student 1: This student, as stated in the previous section, was enrolled in the “Introduction to Psychology” course at Adams State University, and working toward course completion while under DYS care.
- Student 2: Graduated from high school while at Lookout Mountain YSC, and while on parole, began working at a nursing home that offered Certified Nursing Assistant (CNA) training. This student completed the training and was in the process of taking his final certification exam upon DYS supervision discharge.
- Student 3: This student earned a high school diploma prior to paroling, and enrolled at Red Rocks Community College.
- Student 4: This former DYS client achieved a high school diploma and was attending Kansas State University in Lawrence, Kansas following discharge. In addition to attending college, this youth was working full time at Sherwin Williams; also in Lawrence, Kansas.

The number of students in future reporting cohorts enrolled in college courses appears to be growing. For instance, in fiscal year 2017-18, the Division had twenty-two (22) youth who were enrolled at Adams State University and working toward completing college credits; however, none of these 22 youth were part of the current discharge cohort of interest.

MAP Overview

Academic growth for students served by the Division is measured using the Measures of Academic Progress (MAP) Growth assessments from NWEA™. These assessments “offer educators efficient and very accurate estimates of student achievement status within a subject.” The test results “compare achievement status—and changes in achievement status between test occasions—to students’ performance in the same grade at a comparable stage of the school year.”

In concert with the Division’s decision to centralize assessment centers⁶ in the spring of 2013, the Woodcock Johnson (WJ III or WJ) educational assessment was retired from use and the MAP was adopted and implemented in its place. The decision to replace the WJ with the MAP assessment was based on data correlation and continuity. The WJ data, which was collected during a youth’s initial assessment phase, did not directly correlate to the MAP data, which was collected at various intervals throughout a youth’s commitment. Continuity, with any assessment, allows for correlation and comparison between initial and subsequent re-assessments, which in turn, allows for academic growth to be measured appropriately.

The Division chose the NWEA MAP product for a variety of reasons, chief among them being that the tool is recognized by CDE for Colorado-identified Alternative Education Campuses (AECs) as a means of reporting student growth. Additionally, NWEA MAP assessments are widely used and understood by education providers. Lastly, DYS schools and the education system overall must provide annual data to CDE for Title 1 Delinquency funding received. This federal funding comes to DYS through CDE and is used to “improve educational services for children and youth who are neglected (N) or delinquent (D) so that they have the opportunity to meet challenging State academic content and achievement standards.” Annual Title 1 reporting requirements include grade-level improvements for youth who are in the facility for 90 days or more, as determined by a pre- and post-test in both reading and mathematics. Utilizing NWEA MAP assessments fulfills this reporting need.

While DYS has been using NWEA MAP assessments since 2013, other education providers throughout the state do not use the same interim measures. CDE Facility Schools began mandating the use of the iReady assessment suite in 2017 for interim monitoring at their schools, in addition to the state-mandated testing required of all Colorado public schools. Ultimately, as Colorado schools have local control and their own budgetary considerations influencing tools purchased and implemented, the choice of assessments varies and creates a disconnect in the ability to compare student growth, in and between systems.

⁶ DYS went from four (4) assessment centers prior to spring of 2013 to two (2) from spring 2013 forward. The two assessment centers are Mount View Youth Services Center and Grand Mesa Youth Services Center.

To assure connection and continuity at DYS, the MAP assessment (subsequently referred to as “test” or “exam”) is administered to all newly committed youth at the youth centers which provide initial assessment services, as required by the Colorado Children’s Code and the Child Find process. The Division’s assessment centers are located at Grand Mesa Youth Services Center (GMYSC) in Grand Junction, CO; and at Mount View Youth Services Center (MVYSC) in Lakewood, CO. The tests given have included three subject areas: (1) Reading, (2) Language Usage, and (3) Mathematics.

Expert Consultation

For purposes of this report, coupled with the agency’s overall ability to relay student academic growth outcomes to various audiences, DYS sought the expert advice of several entities. These entities included NWEA (MAP tool authors); leading researchers at New America Schools in Denver, CO; the Colorado League of Charter Schools; Momentum Strategies and Research; and the Colorado Department of Education. In consultation with these experts, the Division received advice in regard to recommended MAP data usage, analysis approach, methodology, comparative data sets, and results presentation.

In terms of placing DYS student MAP growth in context with other student populations, two primary comparisons were recommended:

- 1) Student growth comparisons using norms generated from national Alternative Education Campuses (AEC norms); and
- 2) Student growth comparisons using norms generated from national traditional public schools (NWEA norms).

In general terms, the DYS committed population more closely mirrors the “high risk students” or alternative school population (i.e., AEC), which may arguably allow for a more valid and defensible comparison. Through consultation, DYS was able to obtain and utilize national norms for AEC students, developed in 2009⁷. While traditional school growth norms may not be as relevant, the Division presents *both* comparisons within this report.

⁷ DYS was advised to rely upon these 2009 norms for comparison purposes, as will all other Colorado AEC schools this year. AEC norms were updated recently using 2015 data; however, these updated norms have not been released by the CDE and are not publicly available to DYS or Colorado AEC schools.

MAP Assessments: Methodology & Analysis

This section provides the methodology used by the Division of Youth Services to prepare the academic growth results presented in this report. MAP calculations and comparisons require a variety of statistical techniques (see: J. Ernst, 2012; J.L. Ernst, n.d.; NWEA, December, 2018). Therefore, a detailed Technical Methods section is available in the report appendices (Appendix D).

The DYS educational services programming conducts ongoing testing of students using the MAP. All MAP assessments completed by DYS youth are stored in the online MAP Administration and Reporting Center (MARC) system, maintained by NWEA. The MARC system represents the central exam administration and collection site for all DYS student exams. DYS staff conduct regularly scheduled downloads of all data from the MARC system, and transfer data to an intra-organizational database to support internal data tracking, and reporting.

Academic achievement and growth calculations shared in this report include data stored in the NWEA MARC system, extracted between the dates of February 5th and February 11th, 2019. As aforementioned, the select population for this report cohort includes 376 committed youth discharged from the Division during Fiscal Year 2017-18. A total of 16,386 exams were collected from academic years 2013-14 to 2017-18, of which 2,640 exams were specifically associated with the cohort youth. These exams were completed in six (6) Youth Services Centers (YSC):

- Grand Mesa YSC
- Lookout Mountain YSC
- Mount View YSC
- Platte Valley YSC
- Spring Creek YSC
- Zebulon Pike YSC

RIT NORMS

How are RIT scale norm scores calculated?

MAP exams are comprised of several concepts. For example, when completing a Math MAP exam, a student may be required to demonstrate knowledge in concepts like algebraic methods, data analysis, and probability, along with other concepts. RIT student status scale scores are the foundation of MAP Growth exam, and they are available for grades K-11 in Reading Information (Reading), Mathematics, and Language Usage. MAP Growth National Achievement Norms are not available for 12th graders and DYS coded all RIT scores exceeding 11th grade proficiency to indicate the RIT score projected proficiency at or above the 12th grade. For the purposes of this report, the Division relinquished use of 2008 and 2011 RIT scale norms, and solely used 2015 RIT scale norms to prepare this report, as advised by NWEA. The Division used proportional rate

growth logistic regression computations to extrapolate grade proficiency using RIT scale norm scores. The goodness of fit for calculations, used to determine grade level proficiency for each academic subject, was strong⁸.

How are RIT scale norm scores used by DYS educators?

DYS educational staff members use academic proficiency references to determine the appropriate curriculum for youth, a standard method utilized by Alternative Education Campuses.

When is the initial MAP exam given to students?

Per statute, the initial educational assessment (i.e., MAP exam) must take place within 45 days of commitment. To standardize, and expedite the MAP assessment administration process for all newly committed youth, administrators assign an *initial* designation of school grade, utilizing birthdate and academic year. Student grade level is essential to the process of determining the MAP Growth achievement norm for each student upon commitment, as well as categorizing growth within a national context for each youth during their time in Division of Youth Services custody. Without an accurate baseline grade level, it is impossible to place student growth in a national context. School transcripts are not universally-available at the time of the initial MAP assessment.

As outlined in Table 6 that follows, and using academic year 2017-18 as a reference point, DYS educational staff would indicate all youth born on or after August 15th, 2003, but before August 15th, 2004, as 9th graders in the MARC data system.

⁸ Language Usage ($R^2=.9929$, $F(2, 12)=325.6$, $p<.001$); Math ($R^2=.9865$, $F(2, 12)=218.6$, $p<.001$); Reading ($R^2=.9873$, $F(2, 12)=232.3$, $p<.001$).

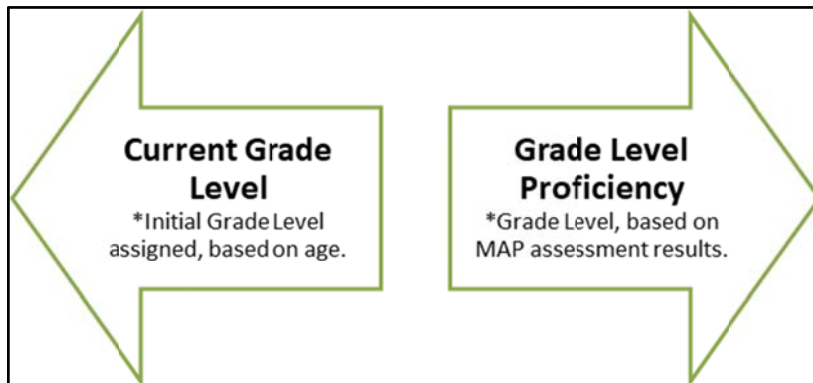
Table 6: Initial Grade Assignment by Dates and Age

Grade	Grade Start Date	Grade End Date	Age
K*	8/15/2012	8/14/2013	5
1*	8/15/2011	8/14/2012	6
2*	8/15/2010	8/14/2011	7
3*	8/15/2009	8/14/2010	8
4*	8/15/2008	8/14/2009	9
5	8/15/2007	8/14/2008	10
6	8/15/2006	8/14/2007	11
7	8/15/2005	8/14/2006	12
8	8/15/2004	8/14/2005	13
9	8/15/2003	8/14/2004	14
10	8/15/2002	8/14/2003	15
11	8/15/2001	8/14/2002	16
12	8/15/2000	8/14/2001	17

*Grade assignments not applicable to DYS committed youth, per the age of population served.

For purposes of this report, the initial grade assigned to students is referred to as the “current” grade level. This is not to be confused with a student’s grade level proficiency. A student’s grade level proficiency is determined by his/her performance on the MAP assessment.

Figure 6: Grade Level References



Quality Assurance Indicators

An evaluation of the Division's education processes, coupled with technical support provided by Northwest Evaluation Association in 2013, generated a series of data quality assurance recommendations employed by DYS. The Division incorporated the following data quality assurance recommendations into the cleaning, coding, and review process. For additional insight into the application of these indicators, please see the Technical Methods write-up, available in Appendix D. In addition to data preparation measures applied by the Division's Data Management & Analysis team, DYS teachers also receive regular follow-up and quality assurance reminders from the DYS Educational team, who are responsible for tracking and communicating student re-testing needs. Quality control processes are designed to examine the following indicators, which ultimately ensure the validity of MAP exam data collected and reported by DYS:

- **Low Performance**
MAP exams with 40% or fewer test questions answered correctly do not represent accurate measures of growth and were removed from analysis.
- **Brief Duration**
MAP Language Usage exams completed in less than 20 minutes, and MAP Reading and Math exams completed in less than 25 minutes are not likely to represent accurate measures of growth. MAP exams were flagged for retest due to insufficient exam duration, and exams completed in less than 20-25 minutes are not included in this report.
- **Significant Decline from Prior Maximum Measured Achievement Level**
A decrease in the RIT scale score of more than eight points, within a school subject, from a preceding RIT scale score, indicates the student did not show adequate effort, or engagement, and does not represent an accurate measure of growth.⁹

ADDITIONAL DATA CONSIDERATIONS

In addition to the aforementioned quality control indicators, subsequent data structuring and decisions made during the production of this report are described under the following headings.

Commitment Date & Discharge Date

Only those MAP exams associated with youth discharged in FY 2017-18 are included in this report. Additionally, exam data beyond the range of the DYS commitment and parole window were excluded from analysis.

⁹ Due to the sequential nature of student growth measurements, the Division evaluated drastic decreases in RIT scale scores sequentially by removing all successive exams within each discipline demonstrating a decrease of more than eight points from a previous maximum RIT scale score achievement level.

Academic Terms Defined

The Division's Data Management & Analysis staff re-coded all MAP exams according to the following academic timeline (i.e., terms):

- Fall term: August 15th - November 30th
- Winter term: December 1st - February 28th
- Spring term: March 1st - June 15th
- Summer term: June 16th - August 14th

To address changes to term time point designations employed by NWEA in 2015, all MARC system-defined academic terms were re-calculated and re-coded according to this term schedule. The Division also constructed academic year designations (i.e., 2014-15, 2015-16) to ensure accurate calculations across all years of MAP exam collection.

Summer Exams

Initial exams completed during the summer months can be used to gauge academic achievement; however, exams collected in the Summer term do not represent valid measures of growth and must be excluded from the matched analysis (per NWEA). Initial exams completed by students beginning their commitment during the Summer term were retained for reporting of cohort-level academic characteristics, but not included in academic growth results analyses (i.e., the “matched analysis” section).

Analysis Software and Data Storage

DYS Data Management & Analysis staff reviewed, coded, and conducted all computations, merges, and data re-structures in IBM SPSS 25.0 (statistical software). The results include all valid data retained for analysis. The initial MAP exam results, or pre-tests, for each student are available in the NWEA MAP database and are included with a grade equivalency in the universal education assessment report designed by and completed by the Division of Youth Services Education staff.

MAP RESULTS

The MAP assessment results are presented in four distinct ways: (Section A) by all youth in the cohort with *one* valid exam, which allows for a general presentation of student academic characteristics and status; (Section B) by a subset of youth in the cohort that have at least *two* valid exams, which allows for growth to be measured and presented; (Section C) as compared to the national norms, which allows DYS student growth to be presented in context with student growth norms witnessed within other populations; and (Section D) as compared to the national norms, which allows DYS school growth to be presented in context with school growth norms witnessed within other populations.

Table 7: MAP Results Presentation and Interpretation Guidance

Results Section	Referenced As	Exams included in Section analysis	Youth associated with Exams included	Purpose of Section
Section A	Discharge Cohort	1,024 exams	359 youth	General presentation of student academic status
Section B	Matched Exams	359 exams	157 youth	Growth measurement results
Section C & Section D	National Comparisons (also used matched exams)	N=359 exams Exam N size varies depending on exam validity, by school term, and by length of time between exams.	N=157 youth Youth N size varies by norms employed (alternative school and traditional school norms differ on calculation criteria).	DYS <u>student</u> growth contextualized using national student growth norms from traditional & alternative schools (Section C) DYS <u>school</u> growth contextualized using national growth norms from traditional & alternative schools (Section D)

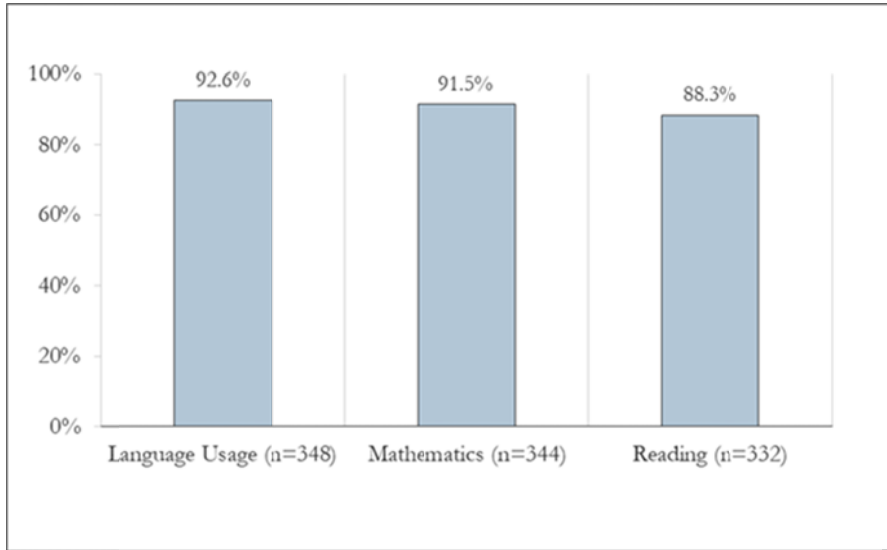
SECTION A: DISCHARGE COHORT & ACADEMIC STATUS/CHARACTERISTICS (N=1,024 EXAMS; N=359 YOUTH)

This section of the results presentation provides a summary of the academic characteristics presented by all students discharged from DYS commitment in FY 2017-18. All data presented in this section of the report include valid MAP exams completed by the youth as an initial assessment, and also designed to generally identify and understand the needs of committed youth. Of the 376 discharged students, 359 students completed an initial exam that was deemed valid (95.5%)¹⁰. As detailed in Figure 7 that follows, the number of valid initial exams ranged across academic subjects.

¹⁰ 360 students completed an initial exam; however, one (1) student had multiple exams, all determined to be invalid. Therefore, 359 students had a valid, initial exam.

In Language Usage, 348 students from the discharge cohort completed an initial exam (92.6%), 344 students from the discharge cohort completed a Math exam (91.5%), and 332 students completed a Reading exam (88.3%).

Figure 7: MAP Exams by Academic Subject | Discharge Cohort



Unfortunately, some students in the cohort did not have a valid initial MAP exam (n=16). The students without a valid initial exam included those who:

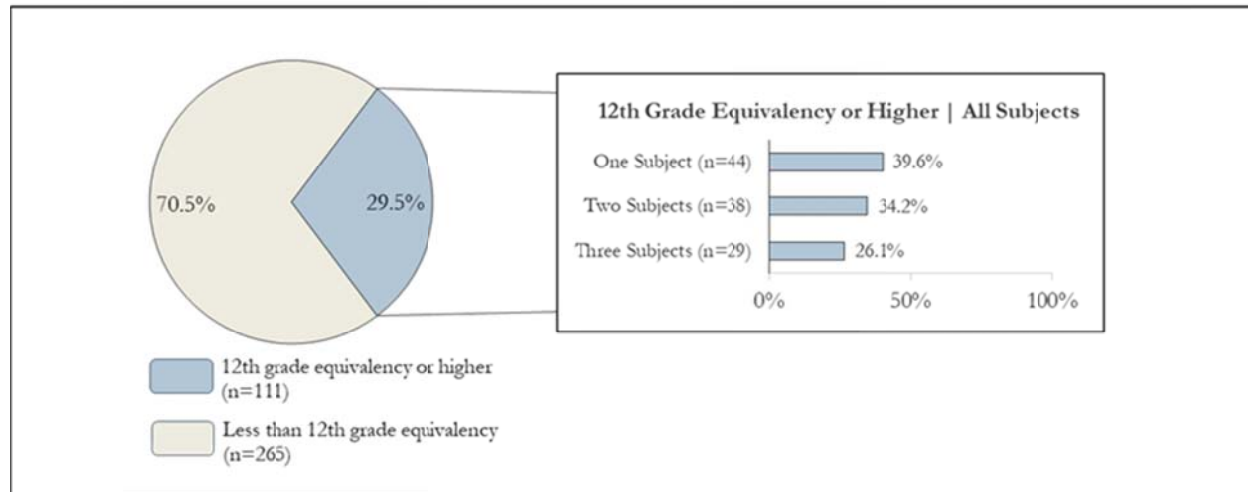
- had a verified HSD or GED;
- had scored at a 12th grade equivalency or above;
- had consistently refused testing.

In future reporting, collaboration with CDE will allow the Division to more closely examine the educational growth of these students absent valid MAP data. For additional details on the CDHS-CDE data sharing agreement, see the report section titled “Educational Programming Improvements at DYS,” subsection titled “Partnership Between CDHS and CDE.”

As described earlier in the report, 21.4% of students had already attained a High School Diploma (HSD) or General Equivalency Diploma (GED) at the time of DYS commitment. As of the 2017-18 fiscal year, students that tested into the 12th grade or higher were technically considered exempt from additional MAP exam testing. However, students currently falling under these circumstances are still offered additional testing and are included on exam rosters; ultimately though it is the student’s decision to participate or refuse. In total, the initial exams of 111 youth, or 29.5% of the

cohort, 'tested out' of further MAP exams in at least one subject. As displayed in the following chart, students often demonstrated proficiency at or above the 12th grade level in more than one subject.

Figure 8: Students Demonstrating 12th Grade Equivalency or Higher | Discharge Cohort

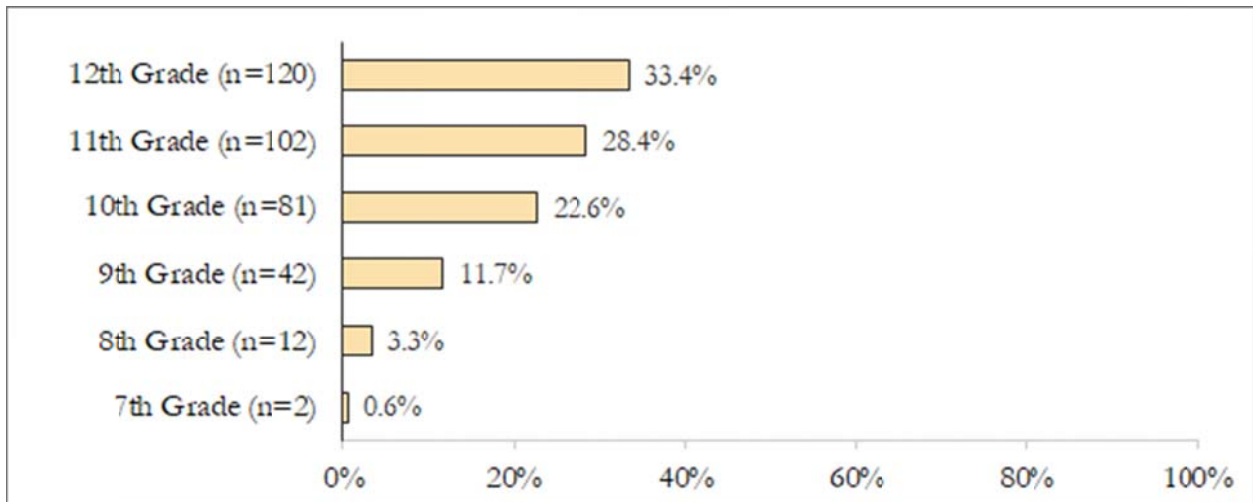


Among students demonstrating 12th grade equivalency or higher, 39.6% conveyed proficiency in one subject, 34.2% in two subjects, and 26.1% demonstrated proficiency in all three subjects (Reading, Math, and Language Usage).

Student Grade Level Proficiency

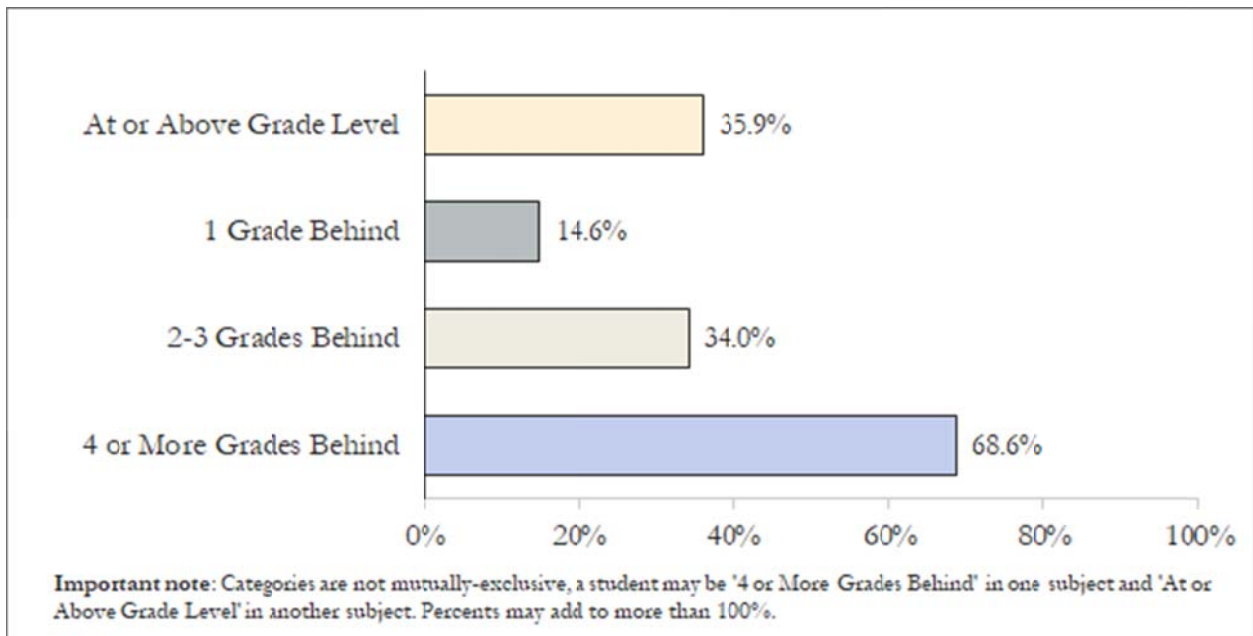
To calculate student grade level proficiency, DYS used the grade level each student demonstrated upon completion of their initial MAP growth exam (the earliest-dated exam, across school subjects). After completing their initial exams, students in the FY 2017-18 discharge cohort spanned from the 7th to 12th grade or higher, in terms of subject matter proficiency. As Figure 9 illustrates, a majority of cohort students (61.8%) were in the 11th and 12th grade upon completion of their initial exam.

Figure 9: Student Grade Level Proficiency | Discharge Cohort



Across all academic subjects, nearly 70% of youth in the discharge cohort (258 of 376 youths; 68.6%) presented a deficit of four or more grade levels behind their current¹¹ grade level, in at least one subject. Overall, less than 40% (35.9%) of students tested at or above grade level across all subjects. See Figure 10 for a visual.

Figure 10: Academic Proficiency Across Subjects | Discharge Cohort

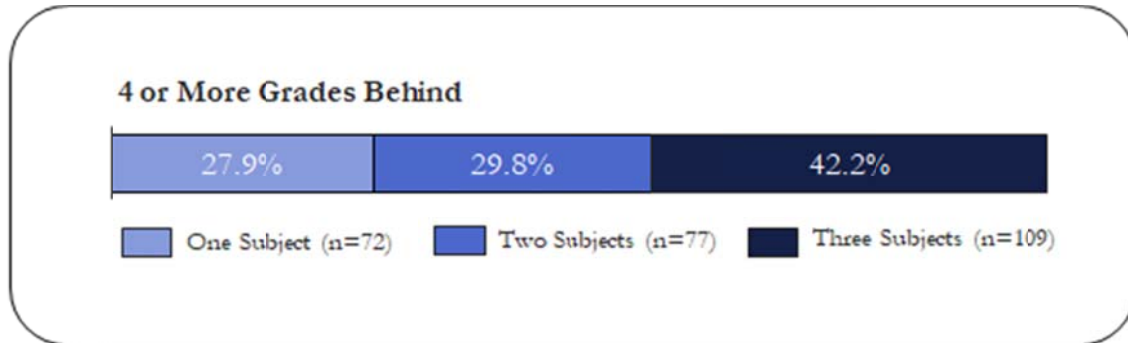


¹¹ Initially assigned grade level, based on age.

Details on Deficits (Below Grade Level)

For those students demonstrating a deficit of 4 or more grades behind (across subjects), many demonstrated a deficit in all three subjects (42.2%), and 72% had a grade-level deficit in more than one subject (42.2% plus 29.8%). These results relay that youth with large grade level deficits are likely to have deficits across multiple subjects, not just one.

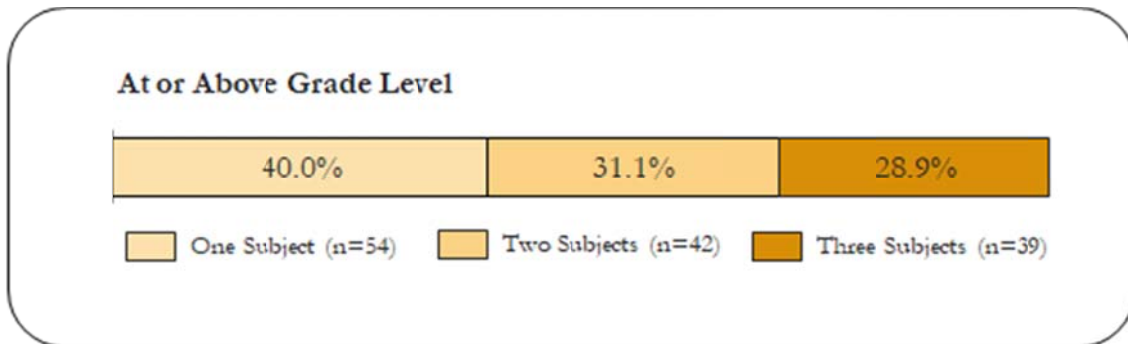
Figure 11: Academic Deficit of 4 or More Grades Behind | Discharge Cohort



Details on Proficiency (At or Above Grade Level)

Of the 35.9% students that demonstrated proficiency at or above grade level, in at least one subject, across all exams and academic subjects, the majority of students (60%; or 28.9% plus 31.1%) were proficient in more than one subject.

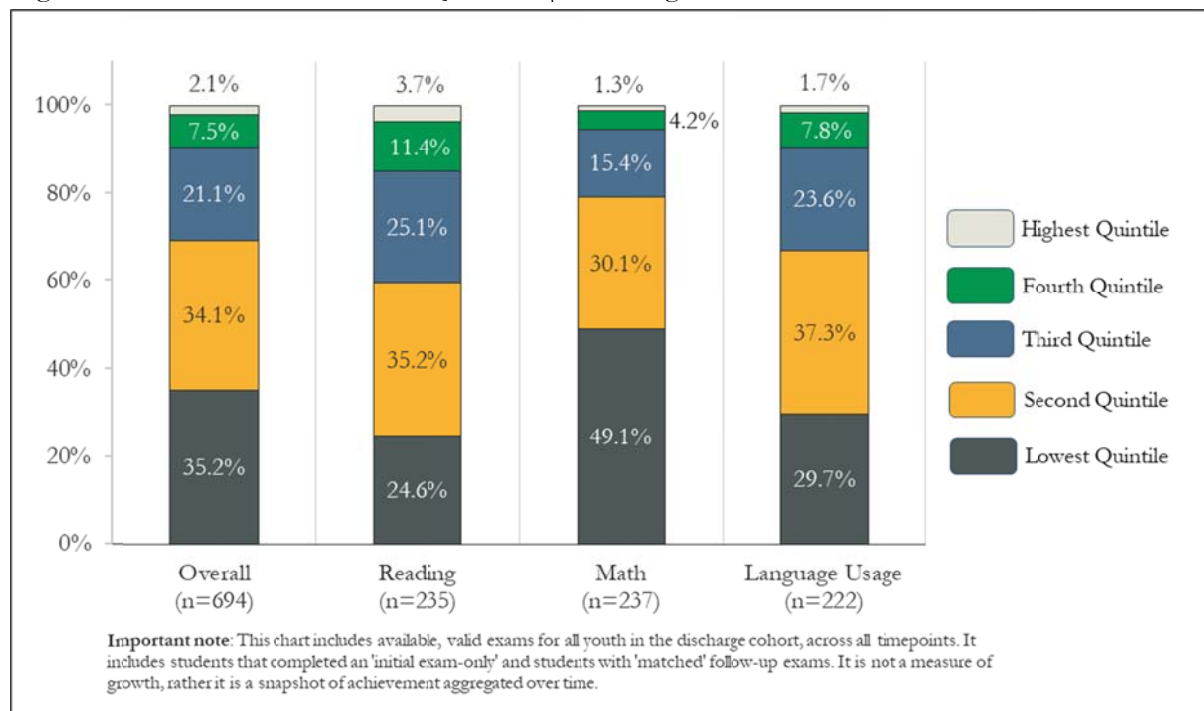
Figure 12: At or Above Grade Level | Discharge Cohort



Median Achievement Percentile

Of the 1,024 exams completed by youth in the discharge cohort¹², the MARC system reported a national achievement percentile for a total of 694 MAP exams (67.7%). Presented in quintiles in Figure 13, twenty-one percent (21.1%) of all exams represent a MAP score within a range considered ‘about average’ (40th to 60th percentile), and 9.6% of median scores collected for all youth during their commitment to DYS demonstrated academic proficiency above the 60th percentile (7.5% in the fourth quintile, and 2.1% in the 80th to 99th percentile). A majority of student scores (69.3%) fell in the lowest set of quintiles, representing tests scoring in the 40th percentile and lower. MAP Math scores represented a particularly challenging academic subject for students, as more than three-quarters (79.2%) of the cohort fell within the lowest two median achievement quintiles, or stated otherwise, within the 1st to the 40th percentile.

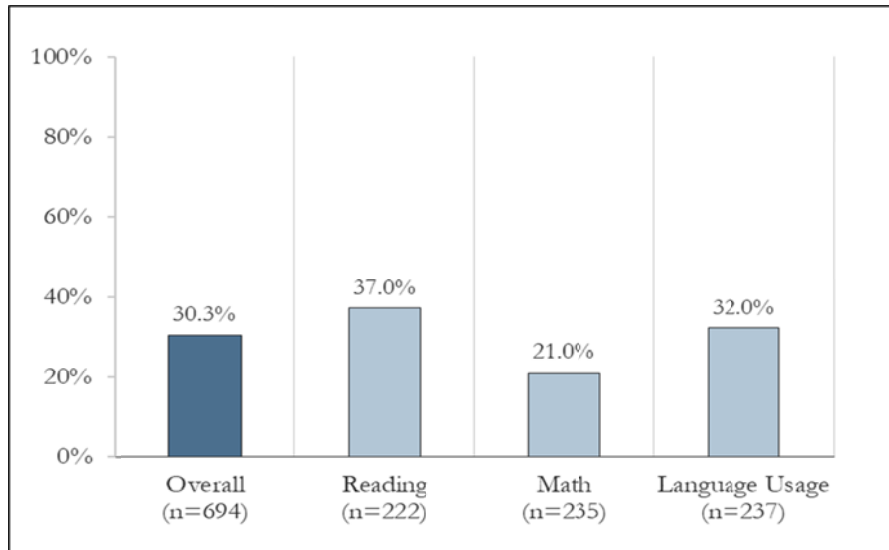
Figure 13: Median Achievement Quintiles | Discharge Cohort



Across all students, subjects, and school years, as shown in the following figure, the median achievement percentile was the 30th percentile (see Figure 14). Student achievement in Reading approached the middle quintile with the median achievement percentile falling in the 37th percentile.

¹² Depending on the youth, some students had one valid exam, some students had as many as eight.

Figure 14: Median Achievement Percentile | Discharge Cohort



SECTION B: MATCHED EXAMS & ACADEMIC GROWTH (N=359 EXAMS; N=157 YOUTH)

Data Consideration: Defining the Initial Exam

Data presented in Section B details the matched analyses conducted, and include youth with (at least) two valid exams: an initial valid exam and a subsequent valid follow-up exam. Importantly, the earliest *valid* exam completed by each student, whether it represents the initial MAP exam (completed during the assessment process, when first committed to the Division of Youth Services), or a subsequent exam completed when students were admitted to a Youth Services Center, may represent a valid initial exam. When possible, the initial MAP exam administered *during assessment* was deemed the “initial” exam and used as such for analysis. However, if invalid, the next valid MAP exam was deemed the initial exam.

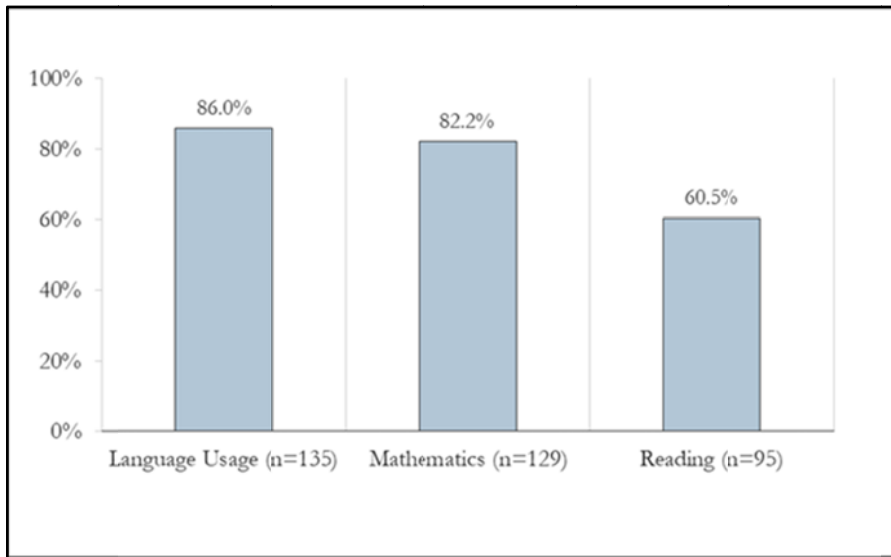
Following the exclusion of initial exams completed in the Summer term, DYS matched all remaining time points in the sample and removed exams without a successive exam in the same subject.

Results

Of all youth included in the FY 2017-18 discharge cohort, the initial and follow-up exams of 157 students (41.8% of cohort) met sufficient validity standards for inclusion in calculations of student academic growth.

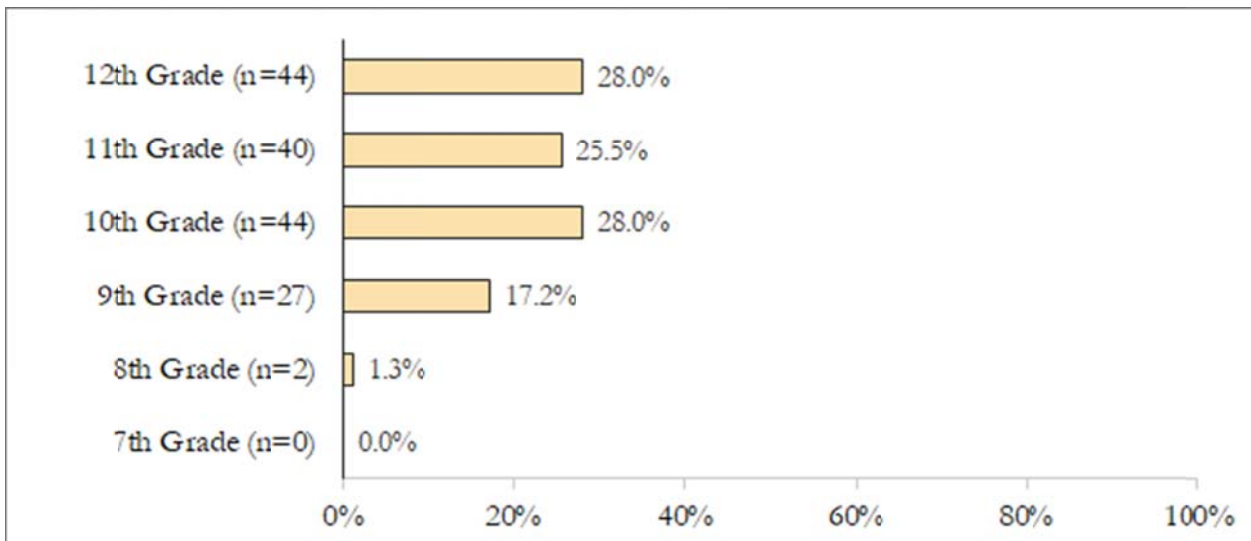
The number of exams completed by students ranged from two paired exams, to a total of six valid MAP exams completed over the course of academic years 2013-2014 through 2017-18. All paired data are included in analysis. Distributed across subjects, the Division collected valid, matched MAP exams for 135 youth in Language Usage (86.0% of the 157 students with matched MAP data), 129 youth with matched Math exams (82.2%), and 95 youth with matched Reading exams (60.5%).

Figure 15: MAP Exams by Academic Subject | Matched Exams



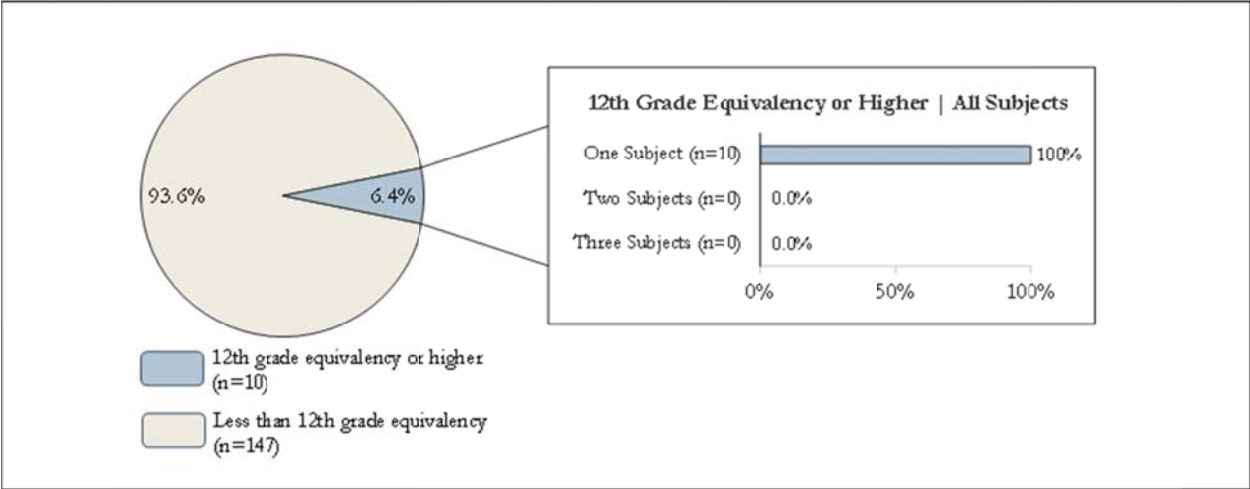
Valid matched exams were available for students ranging from the eighth grade to 12th grade. More than 80% of students with matched data were in the 10th grade and higher (81.5%).

Figure 16: Student Grade Level Proficiency | Matched Exams



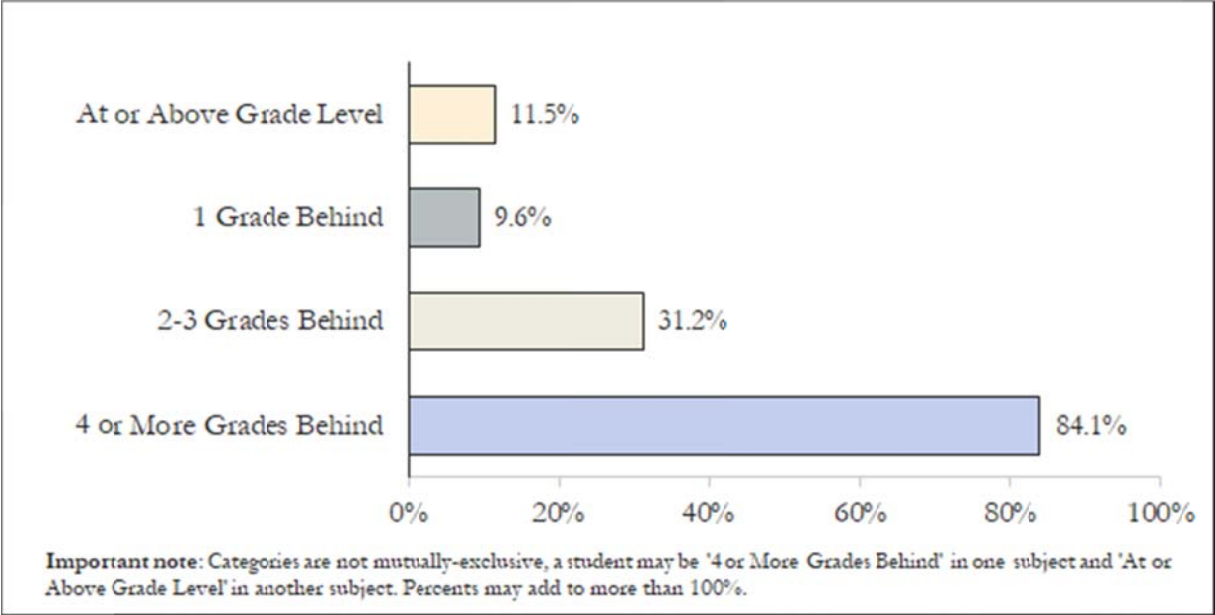
Few students performed at the 12th grade or higher on their initial MAP exam. Ten students demonstrated 12th grade equivalency or higher in one subject (6.4%). Despite this level of proficiency, none of the students sustained scores indicating 12th grade proficiency or higher in more than one subject (see Figure 17).

Figure 17: Students Demonstrating 12th Grade Equivalency or Higher | Matched Exams



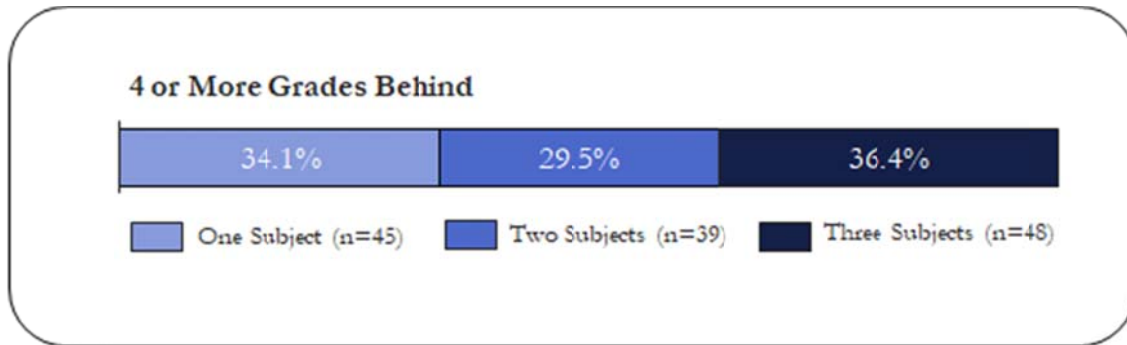
Of students for whom matched data were available, only 11.5% of exams demonstrated proficiency at or above grade level. In contrast, 84.1% of exams showed students were 4 or more grades behind when entering commitment.

Figure 18: Academic Proficiency Across Subjects | Matched Exams



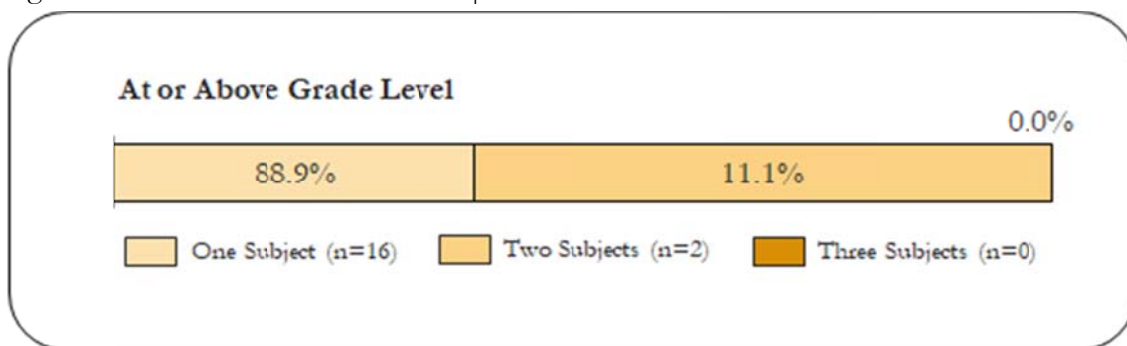
Of those students with matched exams that performed more than 4 or more grades behind on their initial exam, many were likely to show similar deficits in more than one subject. Nearly two-thirds of students with at least one exam four or more grades behind their peers demonstrated a similar deficiency in another school subject (65.9%).

Figure 19: Academic Deficit of 4 or More Grades Behind | Matched Exams



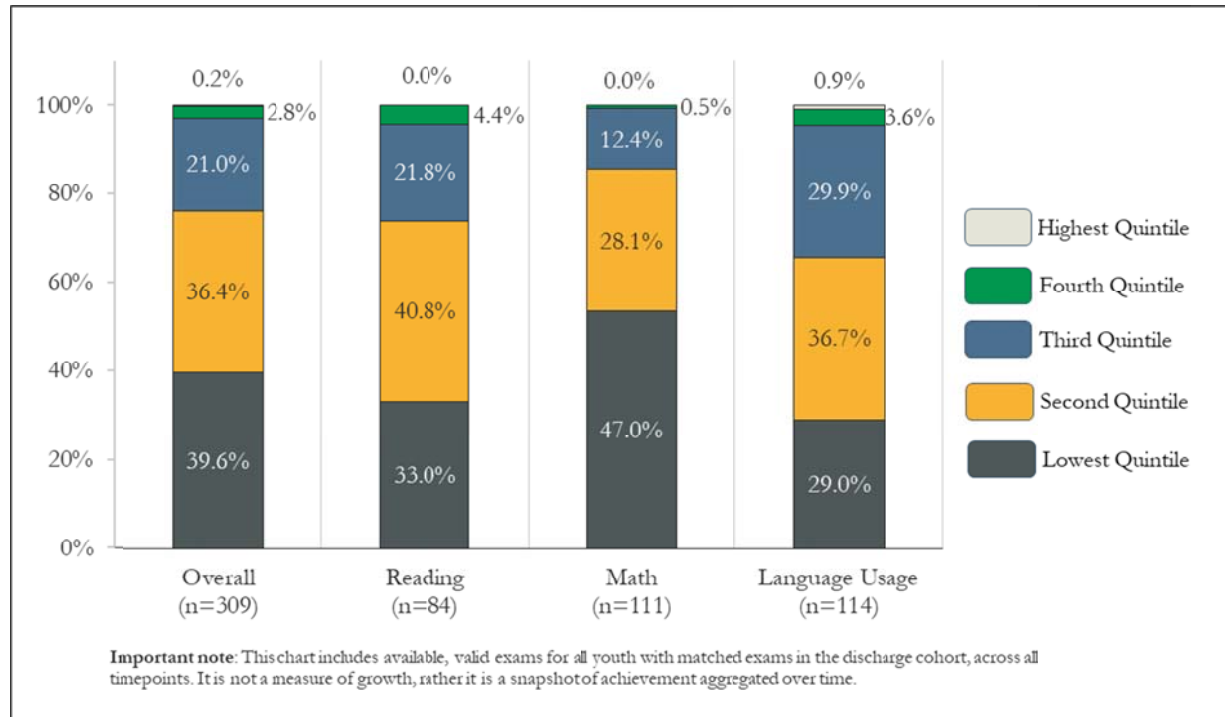
Of the few youths that performed at or above grade level on the initial exam (n=18), 88.9% performed at or above grade level in one subject. No students with matched data performed at or above grade level on their initial exam in all three subjects.

Figure 20: At or Above Grade Level | Matched Exams



More than three-quarters of all exams fell in the lowest or second quintile (76%). No students performed in the highest quintile in Math (0.0%) or Reading (0.0%). Overall, less than 5% of exams demonstrated performance in the highest or the fourth quintile (2.8%).

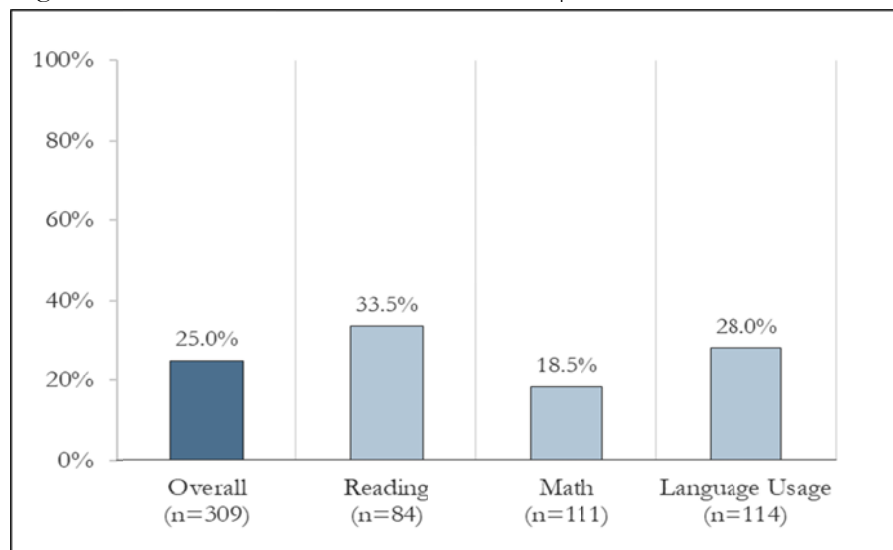
Figure 21: Median Achievement Quintiles | Matched Exams



Median Achievement Percentile

Overall, students in the matched sample performed poorly. Across subjects, exams, and time points students performed in the second quintile, specifically the 25th percentile. Performance in Mathematics was lowest, not exceeding the 20th percentile, meaning more than 80% of peers in a traditional academic setting performed as well or better in Math. In comparison to peers in traditional schools, students performed in the 33rd percentile in Reading.

Figure 22: Median Achievement Percentile | Matched Exams



SECTION C: HOW DOES DYS STUDENT GROWTH COMPARE? (TO ALTERNATIVE SCHOOL STUDENT GROWTH & TO TRADITIONAL SCHOOL STUDENT GROWTH)

Data Considerations for Comparisons

Matched Analysis¹³

As recommended by NWEA, the Division employed a series of additional reporting steps aligned with standardized methods utilized by the NWEA and their partners. The Division's calibration of MAP data analyses to existing standards applied in the field of education provides multiple benefits: a broader insight into the characteristics of youth committed to the Division of Youth Services; greater comparability to traditional school populations; and increased rigor for determining outcomes of committed youth during their time with DYS. Steps taken to measure student academic growth through the analysis of matched data points is described throughout Sections B and C.

¹³ Students included are those with both a valid initial exam (pre-test) and at least one valid follow-up exam (post-test or post-tests).

Time Periods

Valid initial exams and follow-up exams may cross academic quarters, and academic years. Further, the exclusion of Summer term MAP exams from matched analysis creates additional data gaps, hindering the provision of accurate insight into the breadth of academic success shown by this target population (report cohort). Following the removal of all MAP exams completed during the Summer term, all exam time points were re-coded in successive order, by subject and academic year, and re-designated as initial (pre-) and follow-up (post-) exams. To address changes to term time point designations employed by NWEA in 2015, all MARC system exam term identifiers were also re-coded to reflect successive time points of exam administration. For the purposes of this report, the initial exam represents the starting RIT student status score, in alignment with a traditional school model. However, each successive exam represents both a time point for measuring growth from the initial exam, and a starting point for measuring continued growth. Each point is assessed separately, and student growth is determined according to the expected growth associated with each successive score.

NWEA Adaptations to 2015 Standardized Calculation Methods

In 2015, NWEA extended the reach of annual academic growth measurements to include Fall-to-Fall, Winter-to-Winter, and Spring-to-Spring. Matched exams crossing academic years, and meeting these criteria were incorporated into these analyses. When annual and quarterly growth were available for the same exam (i.e., Fall-to-Winter growth was available, and Winter-to-Winter growth was available), in accordance with recommendations available from AECs to utilize the longest academic period of growth available, DYS utilized *annual* academic growth. For comparison, academic growth within a school year provides context regarding periodic growth. However, aggregate growth for the cohort, incorporating all available measurements of growth, is also included in this report.

NWEA Growth Calculations

(National Traditional School Norms for Comparison Purposes)

DYS utilized all available NWEA norms, including standard deviation calculations developed for the normally-distributed population of data. Standard deviation varies by academic subject and grade. The Division incorporated the range of RIT scale scores to define upper- and lower-limits of academic growth, then combined and indexed the items in SPSS 25.0, according to RIT scale scores, academic term, student grade, and academic subject. All norm projections were merged into MAP exam data for comparison. Similar to AEC norms described later in this report, projected growth differs by academic subject, and academic period. Student status growth norms and growth targets were calculated using the current grade of each student, rather than grade proficiency demonstrated by the student during the initial exam.

AEC Growth Calculations (National Alternative School Norms for Comparison Purposes)

The Division used student growth norms developed by administrators supporting Alternative Education Campuses to understand growth relative to typical academic growth for youth in a non-traditional setting. Student growth norm scores were measured from the beginning of the academic year (Fall term) to the second term of the school year (Winter term), and subsequently, to the third term (Spring term). Analysis consisted of identifying growth for each student, across each of the academic periods, and comparing academic growth to the standardized growth norms developed in 2009 and supplied by AECs. All available norms were combined and indexed in SPSS 25.0, according to RIT scale scores, academic term, and student grade. To ensure uniformity in comparisons with NWEA norms, student growth norms and growth targets were calculated on the current grade of the student (assigned initially, based on age), rather than the demonstrated grade level proficiency.

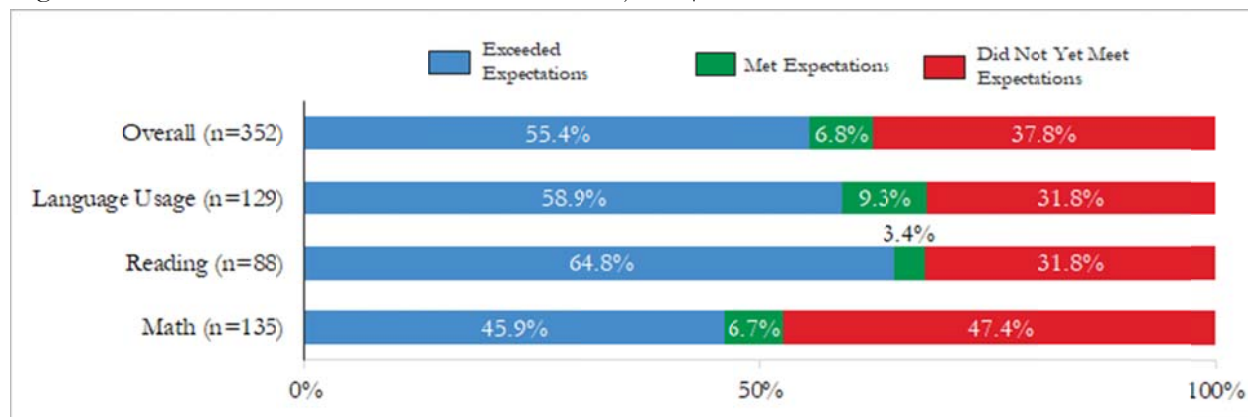
COMPARISON RESULTS

Following the process of validating, and excluding invalid MAP exams, the Division of Youth Services removed all records deemed inappropriate for this report, including Summer term records and general science records. Following the removal of invalid exams completed by youth, retained records were re-coded according to time point across academic subjects, academic years, and other parameters. Of the 994 MAP exams included in the matched sample (90.5% of valid exams), 359 exams collected across each school subject (36.1%) included an initial MAP exam and subsequent follow-up exam(s) sufficient for inclusion in this report's comparative data section.

ALTERNATIVE SCHOOL STUDENTS (AEC NORMS)

In aggregate, across all years and subjects, 166 of 352 matched exams (62.2%) collected across 157 students met or exceeded AEC expected growth. Across participants, 119 of 157 students (75.8%) demonstrated growth on at least one exam, which met or exceeded AEC norms. Across subjects, students demonstrated the highest levels of growth in Language Usage and Reading.

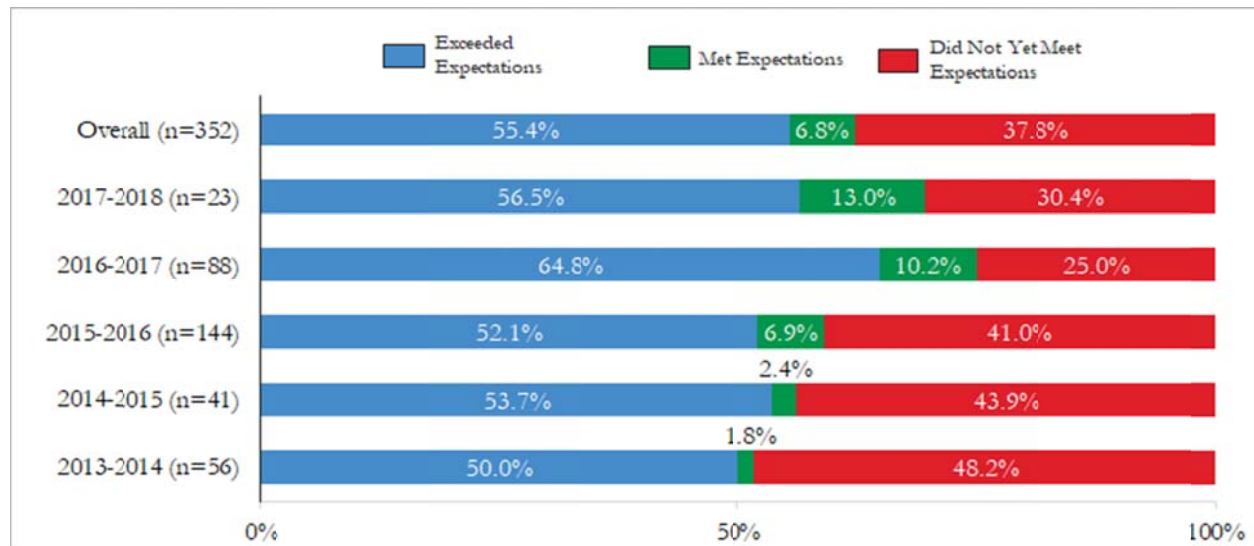
Figure 23: Student Growth Across Academic Subjects | AEC Norms



Overall, across all exams and academic years, 62.2% of exams met or exceeded expectations, including 55.4% of exams which exceeded expectations, and 6.8% that met expected growth. This varied across exams completed in each subject, with an equal portion of exams meeting or exceeding the threshold of expected growth in Reading and Language Usage over the years (68.2%). Exams exhibited consistent movement towards the typical growth targets in Reading, 64.8% exceeded expected growth, and 3.4% matched the AEC growth standard. While exams met or exceeded AEC expected growth targets in Language Usage and Reading, 47.4% of exams did not yet meet expected growth in Math (n=135).

Across academic years, and including both quarterly and annual growth totals, growth was most pronounced for students in academic years following 2013-14. As shown in the following chart (Figure 24), exams most frequently approached MAP growth typically shown by students in the 2016-17 academic year, a year in which 75% of 88 exams completed during the year met or exceeded typical growth (64.8% exceeded typical growth, and 10.2% met this level of growth). With regard to the fluctuation of the cohort population over time, the number of valid matched MAP exams for this cohort peaked in 2015-16 (n=144), which was also the year in which the largest number of exams (85) met or exceeded expectations; 6.9% met expectations (10), and 52.1% exceeded expectations (75).

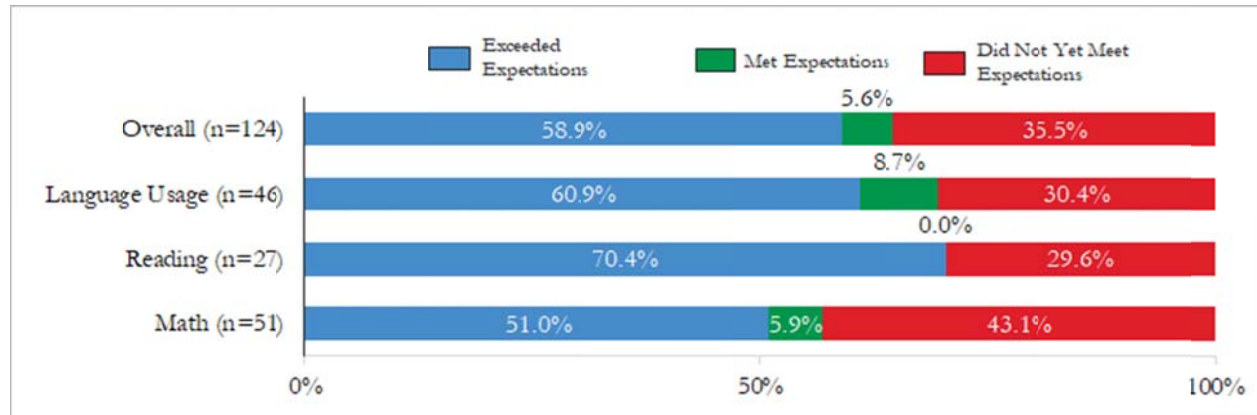
Figure 24: Student Growth by Academic Year | AEC Norms



Since initial implementation of the MAP in 2013-14, trends found in discharge cohort data indicate student growth across the cohort has increasingly moved towards meeting expected targets across school years. Results show consistent measurable increases in the proportion of exams approaching expected growth, with a plateau towards later academic years. While this is commonly indicative of increased levels of growth, relative to students served by Alternative Education Campuses, a variety of factors are central to the interpretation of these results. Nearly 70% of all exams were completed in the 2015-16 and 2016-17 academic years (65.9%; n=352), while a smaller proportion of this cohort was served in the earlier years of the evaluation. The average length of service for the commitment cohort discharged from DYS was 29 months, indicating the average youth discharged from commitment in 2017-18 began receiving DYS educational services in the 2015-16 and 2016-17 academic years. Further, this outcome is particular to the defined population. It is not generalizable or reflective of student growth trends across all students served during the same period by the Division of Youth Services.

Importantly, annual measurements of growth collected over the span of one academic year (i.e., Fall-to-Spring, Spring-to-Spring, etc.) showed similar patterns of academic growth, with 64.5% of exams meeting or exceeding growth expectations (n=124). This included 58.9% of exams, which exceeded expectations, and 5.6% that met expectations.

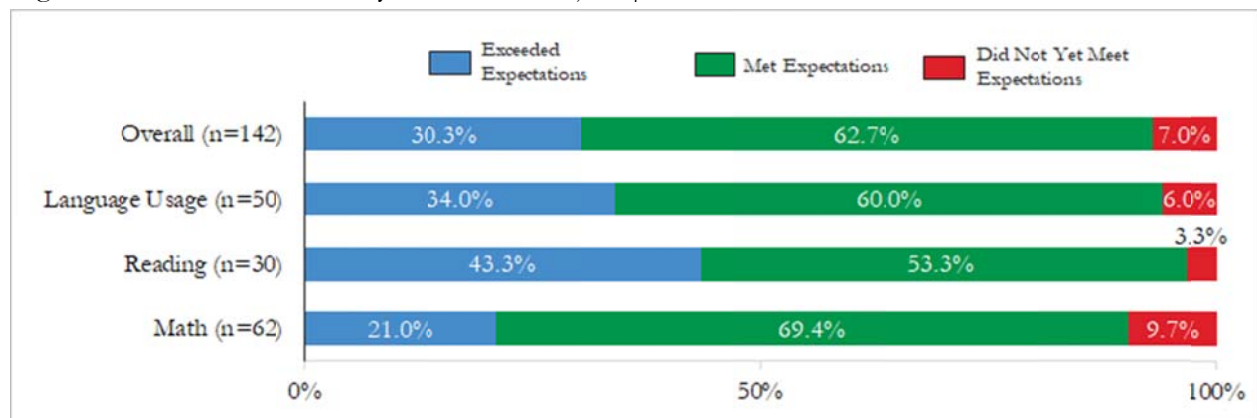
Figure 25: Student Growth | AEC Norms (Annual Growth Only)



TRADITIONAL SCHOOL STUDENTS (NWEA NORMS)

Across 157 students, a total of 142 of 352 matched exams (40.3%) collected over the course of five academic years and across all subjects met were valid for growth calculations. All students included in this sample were in the 10th grade or lower when completing the initial matched exam. A majority of exams met or exceeded expected growth (93%; n=132). The level of performance demonstrated by students was commensurate with findings in other areas of this report, as shown in the following figure (Figure 26). Exams most frequently met or exceeded NWEA expected growth in Reading (96.7%; n=30).

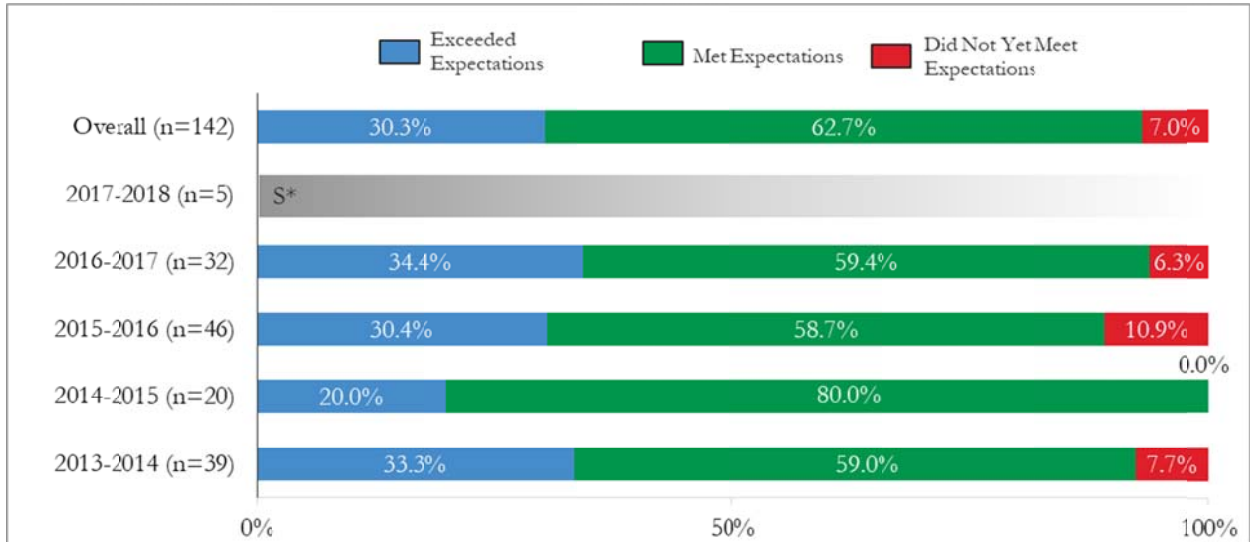
Figure 26: Student Growth by Academic Subject | NWEA Norms



Across Language Usage exams, 94.0% of exams met or exceeded what is considered typical growth (n=50), and MAP Math exam data reflect similar trends, with a smaller portion of exams (90.4%; n=56) meeting or exceeding typical growth of youth in traditional schools.

Academic growth was consistent across academic years; from 2013-14 to 2017-18, with few years in which exams did not yet meet academic expectations.

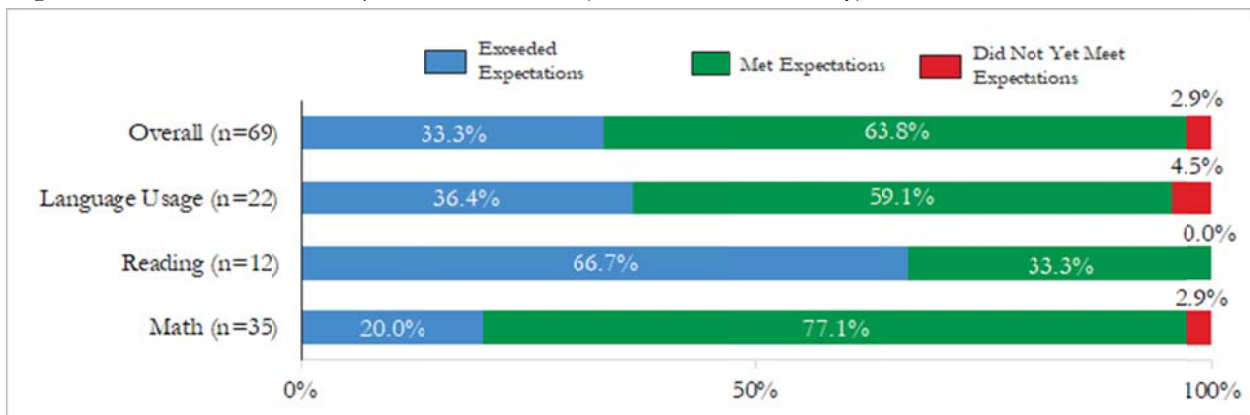
Figure 27: Student Growth by Academic Year | NWEA Norms



* Data suppressed due to lack of generalizability attributable to small sample size, and to protect youth confidentiality.

Isolating only those exams completed over the course of a one-year term, results were consistent, with less than five percent of exams not yet meeting typical growth.

Figure 28: Student Growth | NWEA Norms (Annual Growth Only)

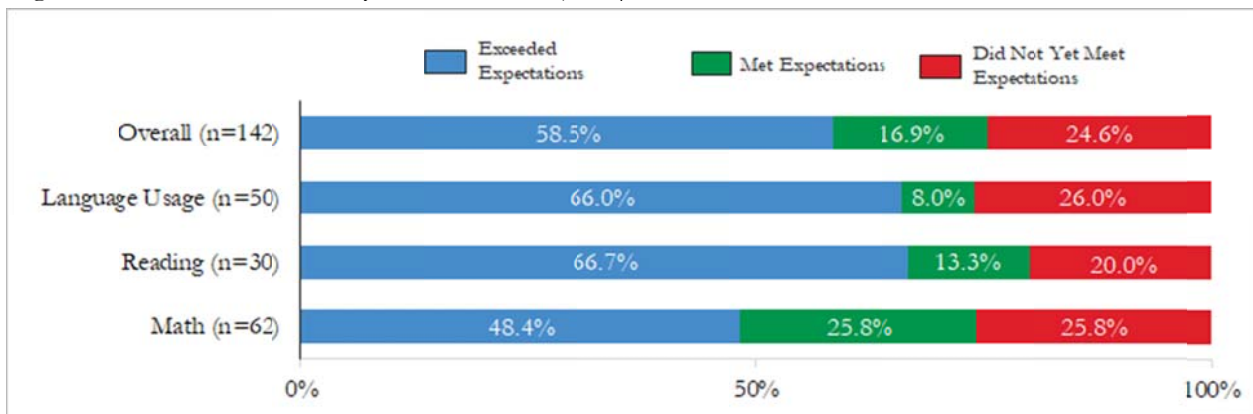


SECTION D: HOW DOES DYS SCHOOL GROWTH COMPARE? (TO ALTERNATIVE SCHOOL GROWTH & TO TRADITIONAL SCHOOL GROWTH)

School Performance

As described earlier, to provide important insight into **school** performance (as opposed to student-level performance), the Division of Youth Services incorporated school status norm calculations to evaluate the level of academic growth shown by students. Importantly, similar to previous charts presented in the comparative section of this report, growth reflects the magnitude of change recorded across exams. Exams that did not yet meet expectations do not indicate that an exam did not reflect academic growth. Rather, the growth did not parallel typical growth on that particular exam. Further, depending on the student, and ultimately reflective of the evaluation design, all available exams were included in this section. Therefore, a youth may have shown less growth in one academic year, and more growth in another. The following school status norm calculations show a consistent picture of student growth. Utilizing the 142 matched exams, described earlier, 75.4% of exams collected across all subjects met or exceeded typical school growth (n=107). By subject, and across students 74% of Language Usage MAP exams (n=50), and 80% of Reading exams (n=30) either met or exceeded expectations. The particularly pronounced growth demonstrated across Reading exams was comprised of 66.7% of exams surpassing Reading standards, and 13.3% of exams meeting academic standards in Math.

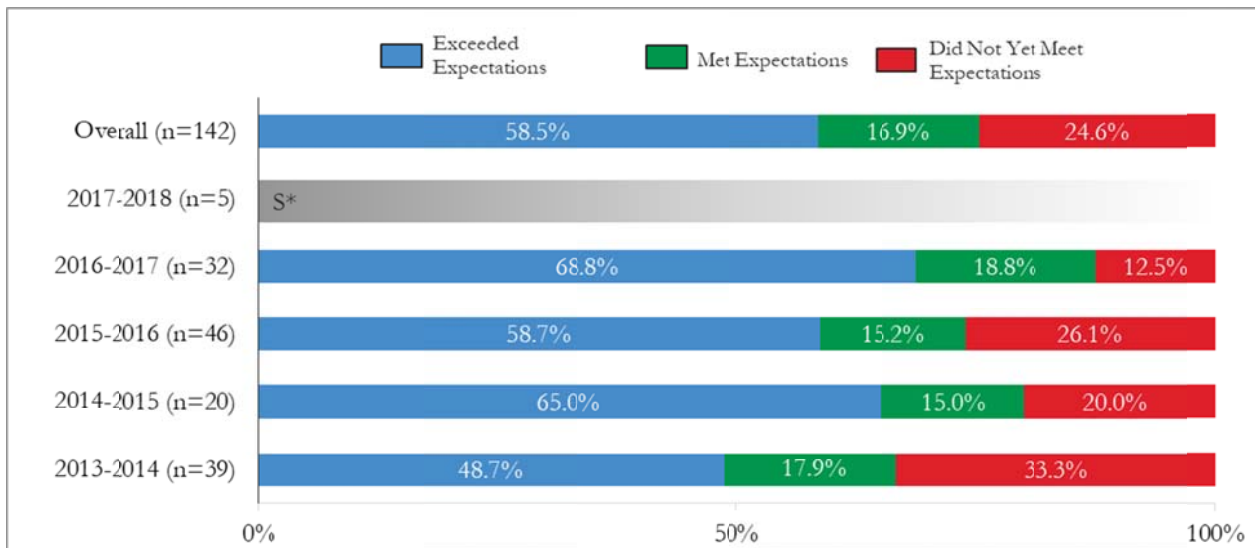
Figure 29: School Growth by Academic Subject | NWEA Norms



Across all Math MAP exams, 73.2% of Math exams met or exceeded typical growth standards (n=62).

Across academic years, growth trends aligned closely with AEC measures of academic growth, described earlier in this report. Growth was most pronounced in the 2016-17 academic year, and the initial year of MAP data collection by the Division of Youth Services (2013-14) reflected the annual period in which exams were least likely to approach results typically seen by students in traditional settings.

Figure 30: School Growth by Academic Year | NWEA Norms

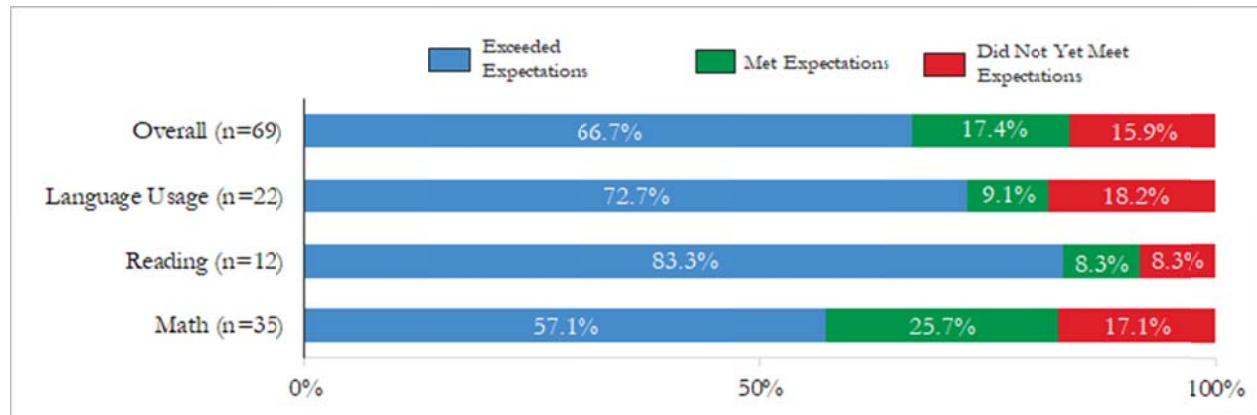


* Data suppressed due to lack of generalizability attributable to small sample size, and to protect youth confidentiality.

Isolating school status growth within defined annual growth periods, and examining data across a wider window of academic instruction in an effort to gauge academic growth over a longer span of time, 84.1% of matched exams (n=69) demonstrated performance meeting or exceeding growth expectations. This included 66.7% of exams, which exceeded expectations, and 17.4% that met expectations. As described earlier, students presented deficits in Math during the initial exam, however school status growth in Math approached Reading and Language Usage growth patterns when the number of students that exceeded expectations and the number of students that met expectations, both, are taken into consideration.

When compared to exams completed in a traditional academic setting, 82.8% of students met or exceeded projected Math MAP growth standards (n=35). Parsed, this included 57.1% of Math exams that exceeded expectations, and 25.7%, which met expectations. While the magnitude of growth in Math reflects a desirable growth pattern for students served by DYS, steps to mitigate academic deficits commonly identified among the cohort may be emboldened through a more detailed understanding of the population presenting deficits and students exceeding expected proficiency. Compared to other subjects, 72.7% of Language Usage exams exceeded expectations in Language Usage, and 83.3% of Reading exams exceeded expectations.

Figure 31: School Growth | NWEA Norms (Annual Growth Only)

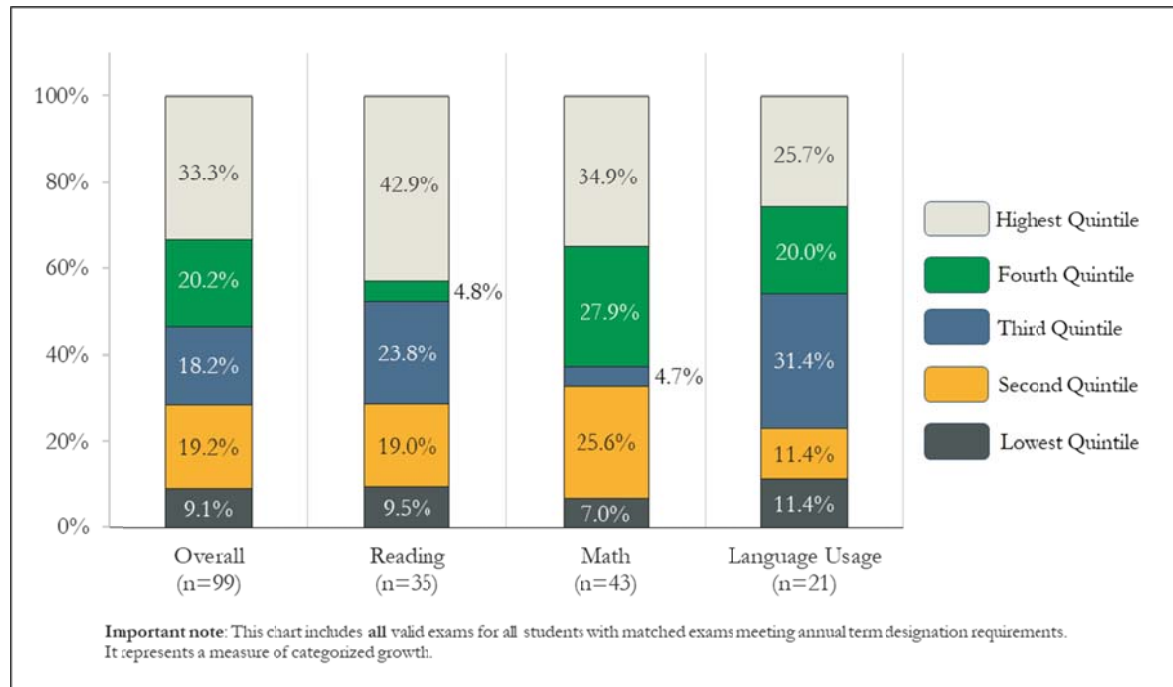


Revisiting Student Growth, Using AEC Growth Percentile

Overall, academic growth exhibited by students is best examined through shifts in percentile growth. To paraphrase the Colorado Department of Education, “A student growth percentile defines how much relative growth a student made. [It] compares each student’s current achievement to students in the same grade...It is **not** about how that recent test score compares to all the other test scores. Even students with test scores that are very low can receive high **growth** scores” (Colorado Department of Education, 2016). Similar to other data points presented for comparative purposes, growth percentiles denote the magnitude of change in RIT scale score. In contrast, growth percentiles expound growth according to traditional growth.

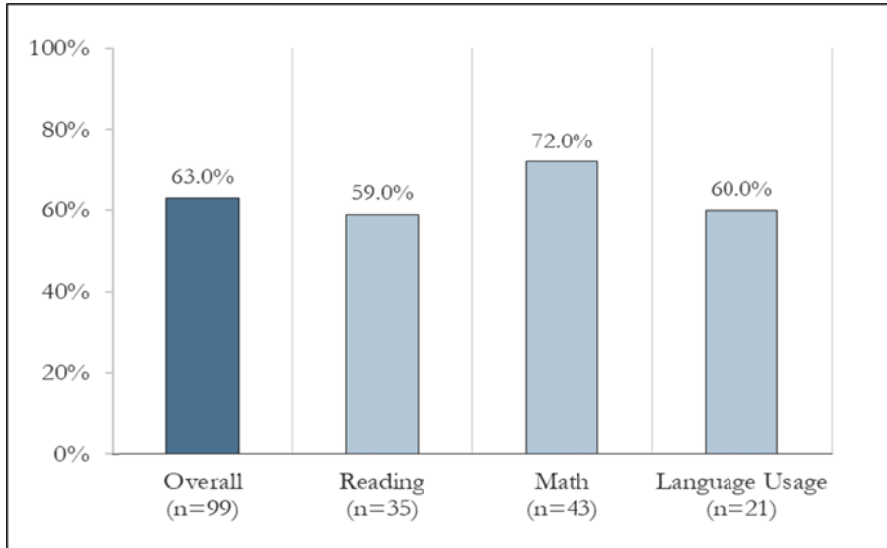
Developed in 2009 by AECs, growth percentiles provide insight into each student's level of growth relative to students exhibiting comparable levels of risk, youth served by Alternative Education Campuses. In total, 53 students completed a total of 85 matched exams. Also included in the sample are 14 additional matched exams completed over the course of commitment by these students during terms following their first year with DYS, and comprising a total of 99 exams. Each of the following exams met the necessary conditions for inclusion in percentile growth analysis. Across subjects, a total of 31 students completed Language Usage exams (58.5%), 38 students completed Math exams (71.7%), and 16 students Reading exams (30.2%).

Figure 32: Percentile Growth Quintiles by Academic Subject | AEC Norms



Despite the perceived challenges associated with serving the academic needs of the described population, results were promising, with more than half of all exams demonstrating above average growth. The academic growth demonstrated by this group of students far exceeded growth described thus far in the report. Many students showed growth in the highest and fourth quintile, ranging from the 60th to the 99th percentile.

Figure 33: Academic Growth Percentile by Subject | AEC Norms



Overall, students demonstrated growth approaching high levels of growth across subjects, presented in Figure 33 in the 63rd percentile. Growth in Math was particularly high. Median student growth in Math was in the 72nd percentile.

Summary

In summary, educational outcomes are measured in two ways: academic achievement and academic growth. Importantly, results shared in this report represent the statewide aggregate of a discharge cohort of students.

Achievement Results:

- 75% of youth discharged from the Division with either a High School Diploma or GED in-hand.
- For the 25% that did not achieve a HSD/GED, a vast majority (85 of 96) had circumstances that provided valid reasoning for non-attainment.

Growth Results:

- Although new measures of academic growth were incorporated into this year's report, results aligned with those published in July 2018, in the inaugural DYS Educational Outcomes report (using a Fiscal Year 2016-17 discharge cohort).
- Employed for the first time by DYS, median percentiles, which represent a point of centrality across the range of RIT student status scores, provided additional insight into the level of success demonstrated by students. A majority of exams collected for the entire cohort of youth were in the 40th percentile or lower (69.3%; n=481 exams).
 - As defined by the Colorado Department of Education, performance below the 35th percentile is commonly considered “low performing” in a traditional school population (Colorado Department of Education, 2016).
 - Growth within the 35th-65th percentile is commonly considered typical in a traditional school setting (Colorado Department of Education, 2016).
- In aggregate, students committed to DYS were most often several grade levels behind their peers in at least one subject and, in many cases, lagged behind their peers in all academic subjects.
- Academic achievement percentiles ranged broadly, from the 1st percentile to the 99th percentile; and this range spanned across all factors examined.
- Matched data showed similar patterns of dispersion across student achievement, and academic subject. Students performed at lower levels during their initial exams, indicating high academic need, and had higher levels of projected growth when received by DYS.
- Matched results are promising, and align with academic outcomes reported in the previous year (published July 2018), using a Fiscal Year 2016-17 discharge cohort.

How do DYS **student** growth results compare nationally, with other populations?

Alternative School Students (AEC norms)

- The addition of AEC norms offered an essential point of reflection of progress shown by students in the custody of DYS, utilizing comparable growth targets, and employing percentile ranks developed for a similarly academically-situated population demonstrating similar deficits.
- Importantly, many of the students served by the Division of Youth Services are also served by Alternative Education Campuses.

Traditional Public School Students (NWEA norms)

- Similar to the interpretation of data incorporating AEC norms for comparison, NWEA norms must be interpreted with caution.
 - Lack of available norms for 11th and 12th grade students prevents robust insight into the educational growth patterns for a population skewed towards higher grade levels.
- Student growth is often closely related to where students begin.
 - If a student starts below grade-level, there is much more room to grow.
 - As described by NWEA (August, 2015), “Growth norms developed for the 2015 RIT Scale Norms Study reflect the common observation that the rate of academic growth is related to the student’s starting status on the measurement scale; typically, students starting out at a lower level tend to grow more” (p. 4).
 - Conversely, if a student starts above grade-level (those that excel beyond their peers), there is less opportunity to show improvements, and thus show lower rates of growth.
 - As described by NWEA (August, 2015), “Students with starting scores above the grade level mean would typically show less growth on average” (p. 4).

How do DYS **school** growth results compare nationally, with other populations?

- School growth norms demonstrate consistent patterns of growth towards typical growth; however, there are many limitations to interpreting data.

Recommendations

General Recommendations

- While similar patterns and findings exist across discharge cohorts, more data are necessary to understand the extent of these trends.
- Incorporating population-level statistics collected over the course of all years of MAP administration, will provide comparable statistics and necessary context regarding slight shifts and changes in the academic characteristics of students committed to and discharged from the Division.

Academic Status at Time of Commitment:

- The demonstrated academic needs of students at time of commitment, is crucial as a diagnostic measure. Continue to monitor these baselines closely.
- Findings shared in this report indicate consistent academic deficits persist for students entering the DYS commitment.
 - These findings are consistent with findings detailed in the inaugural report published in July 2018, including *pronounced* academic deficits found in MAP Math exams.
- The percentage of students assessed as having academic deficits indicate a need for more intensive support, and structured learning plans designed to support accelerated academic growth in an effort to get students 'up-to-speed' with their peers.

Educational Improvements at DYS

The DYS Education services team and staff are responsible for ongoing improvements that result in improved outcomes for youth. To achieve this, various program improvements have begun implementation in alignment to the Division’s strategic plan and education objectives.

STATE AUDITOR RECOMMENDATIONS

The Colorado Office of the State Auditor (OSA) made multiple recommendations in the January 2019 Performance Audit of the Division of Youth Services Reporting of Education Outcomes, and the inaugural report published in July 2018. Recommendation 1A stated that DYS enforce “policy and contract requirements that youth centers operated by contractors measure and report in the educational outcomes of youth in their custody.” To accomplish this, DYS Education reviewed contract policy specific to education which residential placements, including some CDE facility schools, were required to adhere to. This resulted in an updated 17.8 policy for contract providers (or policy C17.8, Education Programs; see report Appendix E for policy language), which replaced antiquated language and expectations with those mirroring outcomes reporting for DYS commitment schools. The policy effective date is June 1, 2019, and accordingly, contract providers will begin adhering to the new policy expectations to report on the DYS youth placed in their care.

Additional OSA recommendations included offering MAP testing to youth whose initial assessment scores correlate to the 12th grade level (indicating some level of mastery of the tested content) while also determining another method for measuring continuing growth. The steps to implement this recommendation include assuring youth with these 12th grade test scores are included on all testing rosters for fiscal year 2020 and beyond, while also determining additional evidence that bests indicates achievement and growth while in a DYS education program.

INFORMATION SYSTEMS

Additional education program improvements, which will result in better and more comprehensive data reporting and monitoring, include the implementation of a student information system (SIS) for all commitment schools. This will allow a more robust tracking system of all youth. Infinite Campus (IC) is a popular SIS within Colorado school districts and is a tool in the early implementation phase for DYS, that will allow for easier record transfers and verification of credits within the DYS schools and overall. DYS Education will also use this system to monitor credits earned, grades, and grade point averages to have more timely interventions and celebrations.

LEGISLATIVE SUPPORTS

During the 2018 71st General Assembly for the State of Colorado, Representative Leslie Herod authored House Bill 18-0524, concerning the transfer of academic credits from DYS placements. This bill became a law and requires all local Colorado school districts to recognize and appropriately transfer credits from DYS to the traditional or alternative school settings and to subsequently apply those credits towards graduation requirements. This allows students to retain the credits earned in their out-of-home placement in the content in which it was earned while transferring to a different school or district and helps maintain motivation and the pathway to successful high school completion.

STAFFING IMPROVEMENTS

Staffing considerations were addressed in a 2018 CDHS Decision Item for Special Education. This decision item allowed DYS Education to (a) allocate a full-time school social worker at each site, (b) assure there was a designated Special Education Coordinator at each site, (c) reduce the caseload of special education teachers by adding staff, and (d) hire a full-time school psychologist. These additional supports for youth will ensure on-going compliance with both federal and state special education law, as well as promote equitable access to school content for students.

Additionally, as positions were vacated in 2017 and 2018, the new DYS Education Director, hired June of 2016, reallocated and revamped positions to better support teaching and learning. Added responsibilities included instructional coaching, implementation and monitoring of data-driven, multi-tiered systems of support (MTSS), and creating whole system and site-based professional development.

STAFF PROFESSIONAL DEVELOPMENT AND AWARDS

Additionally, in 2017, DYS Education began annual state-wide, collaborative teacher professional development to establish a community of practitioners across contents and youth centers. The purpose of this on-going professional development was tri-fold: (a) necessary for improved student outcomes, (b) provides beneficial teacher development and advancement, and (c) to meet a recommendation pursuant to a 2017 external review of DYS education programming.

These education-focused professional development days have presented juvenile justice related content including trauma-responsive classroom practices, high-leverage skills for short-term youth, assessment and planning for high needs youth using data, and collaboration on the DYS instructional model. On-going support has been embedded in these sessions and throughout the year for the award-winning implementation of Chromebooks for youth and technology-enhanced instruction in all five commitment sites. As mentioned, the Education OIT team was honored at the 2016 Colorado Public Sector IT conference as the 2016 CIMA IT Team of the Year; this award “recognizes an innovative, efficient, effective, high caliber team of IT technicians/professionals that

have achieved outstanding implementation success or process improvement which has resulted in a substantial improvement in operational performance and service delivery capacity.”

PARTNERSHIP BETWEEN CDHS AND CDE

Inter-Departmental support and cooperation continues to impact efforts to monitor student outcomes and develop opportunities. The Colorado Department of Education (CDE) and CDHS are in the last stages of finalizing a data-sharing agreement to monitor the educational outcomes of youth in out-of-home placements throughout the state, including those served by DYS and those served by the county departments of human services (i.e., foster-care youth). This agreement has been in process for over a year, and once finalized, will bring all participating entities a step closer to accessing and maintaining more comprehensive educational information.

GRAND MESA YOUTH SERVICES CENTER (GMYSC) VOCATIONAL OPPORTUNITIES

Mobile welding program gives GMYSC youths workplace skills

Posted by CDHS Communications

The Division of Youth Services, in partnership with the Pueblo Community College, recently brought a unique hands-on learning experience to six youths at Grand Mesa Youth Services Center in Grand Junction. The college brought its welding mobile learning lab onsite to GMYSC and offered students a five-week program, resulting in industry-recognized credentials in welding and Occupational Safety and Health Administration (OSHA) certification.

Youths wrote an essay to be selected to participate in the program. They then completed virtual welding training modules. Five students finished the program, while one decided welding was not for them. Students said the following about their experience:

“The welding program was a great opportunity for me. It taught me a lot, and I am very grateful for the opportunity.”

“It is a cool experience, and it is a learning opportunity for us to step outside of our comfort zones and learn something new.”



GMYSC youths set sights on college careers

Posted by CDHS Communications

Grand Mesa Youth Services Center (GMYSC) recently took four female youths to Colorado Mesa University in Grand Junction for a Women's Career Fair. The young women have consistently gone above and beyond at GMYSC, showing leadership on the unit as well as in school and other areas. They have either graduated or are working on getting their high school diplomas, and are eager to further their education.



The career fair allowed the ladies to explore 16 different career paths and learn how to obtain scholarships to several universities. Each of the ladies was able to converse with female professionals in their chosen career fields. The youths were introduced to a college environment, and spent the day exploring the campus and planning their futures there.

One of GMYSC's goals is to prepare and help provide youths with the best possible future. For these four ladies, that means moving on to life as college students. They plan to pursue nursing, paramedic studies and graphic design. GMYSC can't wait to see these ladies reach their goals!

Hats off to Grand Mesa YSC graduates

Posted by CDHS Communications

They say it takes a village, and that couldn't be more true. Last week, the staff and students at Grand Mesa Youth Services Center celebrated the graduation of six students who earned their high school diploma (one was discharged after the graduation so we only have five students shown in the photo). Through their dedication, hard work, and the support of their teachers and staff, the youth achieved something they never thought possible. There were 15 youth at Grand Mesa who walked with their high school graduating class in May.



YOUTH CENTER CULINARY PROGRAMS ~ AWARDS & ACHIEVEMENTS

Youth Achieve “Black Wolf” Level in the Kitchen

Congratulations were in order when Platte Valley Youth Services Center residents both achieved their Black Wolf level in the kitchen’s Culinary Catering Program within the same month. Both youth completed the unit test, which consisted of: kitchen safety, sanitation, equipment use, standardized recipes, and proper receiving and storage of food. This allowed them to wear white chef jackets, custom embroidered with their names. One youth also completed the Italian Gray Wolf level, passing this unit requires advanced knowledge of Dairy & Eggs, Bakery products and Breads, Pasta, Grains, & Potatoes, Fruits, Vegetables & Salads, Meats & Fish, as well as knife skills. Resident #1 (names withheld to protect their identity) passed his final exam with an impressive 98% accuracy. Resident #2 passed the final exam with an impressive 99%. Achieving a ninety-nine percent puts her in elite company, an accomplishment she was proud of. The hard work and commitment of both youth, in achieving these levels within the culinary catering youth work program, earned them chef coats, a presentation, and accolades from the Division’s Food Services Director.



Chef Jacket Celebration at Platte Valley Youth Services Center



Two youth within the culinary catering program at Platte Valley Youth Services Center graduated recently. As part of the celebration, both youth created three dishes each: a soup, a main entree and a dessert. This was part of their final test to showcase the skills they had learned in the program. It was nothing short of amazing, as the dishes were prepared with little to no direction from the kitchen staff. The Division’s associate director of operations participated in the celebration and presented the chef jackets to the youth.

The first chef jacket recipient prepared coconut lime soup, Jamaican jerk chicken with mango chutney and coconut rice, and fried banana egg rolls with chocolate and toasted coconut.

The second chef jacket recipient prepared Zuppa Toscana soup (Olive Garden version), Chicken and bacon fettuccine alfredo, and zepole with vanilla crème filling and strawberry coulis.

Platte Valley Youth Services Center's lunch catering program serves Weld County judges



The youth in the culinary catering program at Platte Valley Youth Services Center recently treated the judges of Weld County Judicial District 6 to a specially prepared lunch.

Applying what they learned through the program's grocery store and budgeting curriculum, the youth were able to feed approximately 20 people for \$80. After creating a shopping list for the event, the youth learned how to cost out, or calculate the cost of, each plate per person. The project was facilitated by Dustin Tallman, who introduced the youth to budget and plate costing,

giving them a base of knowledge to build from in their futures, either in the restaurant business or feeding a family meal in their own homes.

So what was on the menu for this delicious and cost-calculated meal? The youth prepared and served a mixed greens salad with balsamic vinaigrette, homemade alfredo and marinara sauces over fettuccine noodles, Italian marinated chicken breast, and Italian sausage with sautéed tri-colored peppers. All this was topped off with a butterscotch trifle for dessert.

Please see Appendix C for a complete description of three outstanding DYS Culinary Programs at Platte Valley Youth Services Center, Marvin Foote Youth Services Center, and Spring Creek Youth Services Center.

DYS Client Manager/Parole Officer Perspective



"A lot of DYS youth have opportunities for various certifications: Adams State College through DYS, online college courses, culinary certificates, etc. Most youth on my caseload have completed school, yet are still engaged in other growth opportunities. One of my parolees (who recently left Platte Valley YSC) earned her diploma, plus achieved various hospitality certificates offered there, and got a job at the Marriott. Another youth (at Platte Valley) is about to earn his Chef's jacket. I have a youth that has earned his Chef's coat at Lookout Mountain YSC, just stepped down to Ridge View YSC, and we are looking into culinary schools for him now. I had

one girl, a couple years ago, that earned her Associate's Degree while at Marler YSC. I've also had a few youth take classes with Adams State College. There are a lot of opportunities!"

~Stephanie Fumia, DYS Client Manager

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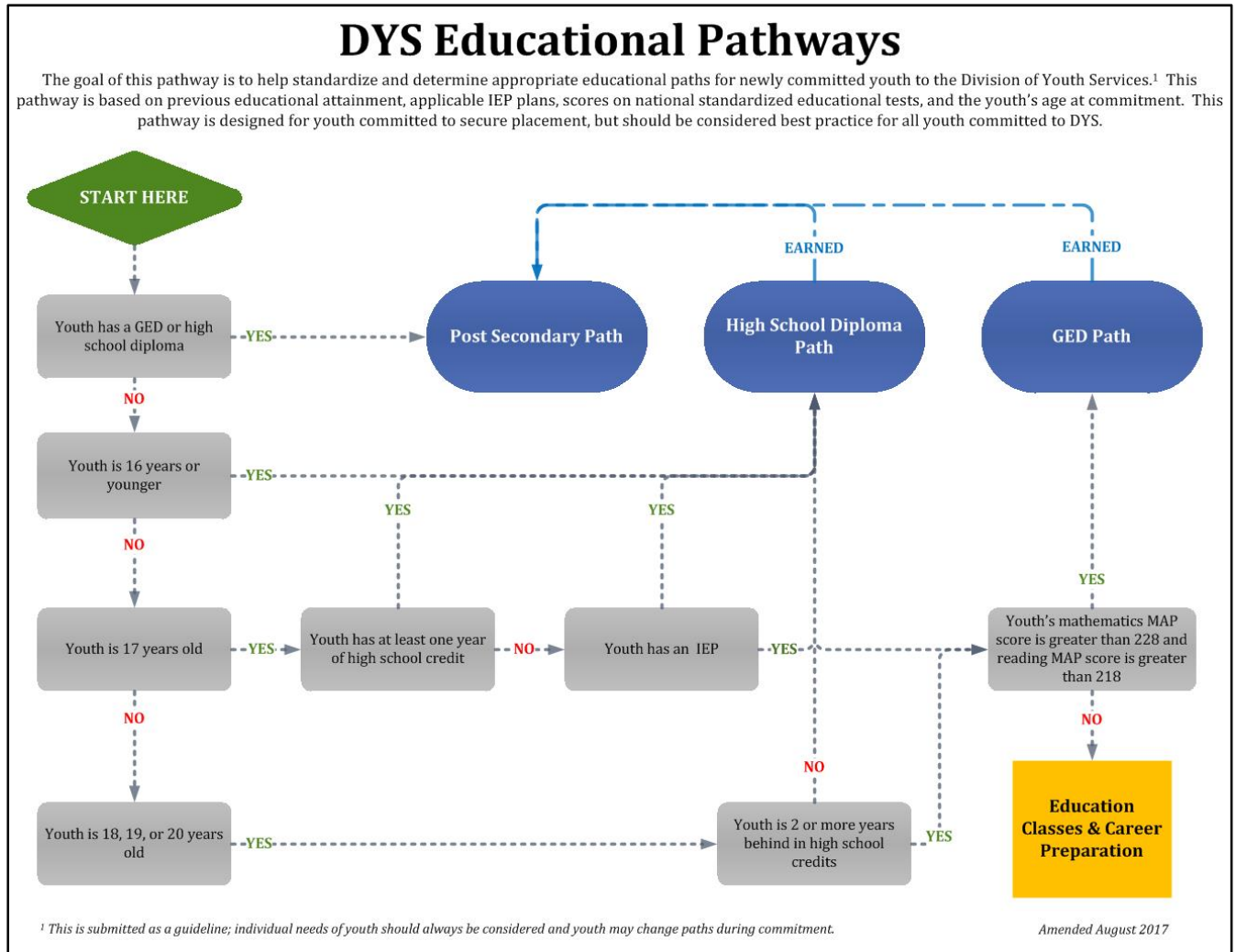
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Appendix B: DYS Educational Pathways Flowchart

Figure A: DYS Educational Pathways Flowchart



Appendix C: DYS Culinary Programs

Platte Valley Youth Services Center's Wolf Pack Culinary Catering Youth Program

Platte Valley YSC has an active, comprehensive and collaborative culinary-catering youth work program. Not only does the program educate and reward youth in culinary arts arena, the participating staff and students regularly cater meals at internal and external events, plan and host cooking competitions, and collaborate with other organizations as well. A program overview, including recent competition and catering events, are detailed in the following sections.

Culinary-Catering Program Summary

- The program is comprehensive and progressive, based upon educational progress through a curriculum, units, exams, and participation in other culinary-related activities. There are rewards built into the program, including chef jackets awarded for completing certain levels.
- The program has a curriculum, clearly outlined expectations and guidelines for the youth, complete with a youth handbook. The curriculum consists of 12 units, with testing schedules that align with the material. After the first test (kitchen safety, sanitation, equipment usage etc.), youth can earn a white chef jacket to wear (Tundra Wolf level or “Chef”). After the second test (breads, bakery, soups, meat, etc.), youth can earn a grey chef jacket (Italian Gray Wolf level or “Sous Chef”). After the third and final test, youth can earn a black chef jacket with their name embroidered (Black Wolf level or “Head Chef”). To attain this final level, a youth must also participate in all planned catering activities and competitions, pass a practical exam, and pass a written test.

Cooking Competitions

- The program plans and hosts an Iron Chef Competition twice a year, based upon the level achievements of the current youth enrolled in the program. A different theme is incorporated with each competition. Examples of themed competitions recently held are:
 - Farm to Table
 - By partnering with a local farm, the program participants were able to spend four hours at the farm. The farm pays its volunteers in vegetables. The participants helped the farm harvest food, and in-return, the vegetables received went toward the competition ingredients.
 - One youth designed and prepared an eight course menu for the judges as part of his final test. He was also offered a job at a local restaurant after, as one of the competition judges was a chef from the offering restaurant.

- Cupcake Challenge
 - Two youth created cupcakes with secret ingredients, which were strawberries, balsamic vinegar, and bacon. The resulting cupcakes were delicious!

Internal Catering

- The Junior/Senior Meal
 - This is a meal specifically put together for the Juniors and Seniors residing at the youth center. Culinary program youth who are eligible for passes assist with the purchase of meal ingredients with a grocery list and participate in a grocery store shopping trip. Youth are educated through the “grocery store and budgeting” unit curriculum. Youth are also responsible for preparing the food. The budget allotted is \$50 to feed up to 20 youth for this meal.
- The Special Meal
 - The newest program element is called “Passport to the World,” and consists of twelve meals from twelve different countries. Each month the program youth prepare and serve the facility youth and staff a “Passport Meal” from another country. The program youth make a presentation during the lunch meal, relaying how the food relates to the culture and beliefs of the specific country.

External Caterings and Collaboration

- The culinary program caters to the Weld County District 6 Judges once a month. This involves program youth prepping meals and serving lunch to 20 judges.
 - To prepare these catered meals, youth (if eligible to leave the youth center on a pass) will accompany staff to the grocery store with a list and learn to shop on a budget. The budget allotted is \$80 to feed 20 customers. The program has developed a curriculum and utilizes a unit called “grocery store and budgeting.” Youth who are eligible for passes will also assist in the delivery of food for the catered event.
- Catering services provided at the ground breaking event for the new Adams Youth Services Center
- A catered lunch award ceremony was provided for the medical team at PVYSC
- Provided homemade cookies and hot chocolate at Greeley Lights the Night parade
- Christmas dinner provided for Habitat for Humanity
- Christmas dinner for volunteers provided for Habic Youth Center
- Multiple caterings and fundraising event assistance provided for the Free Our Girls organization, which raises awareness for human trafficking and trafficking prevention.
 - This organization created a "Taking Flight" program for human sex trafficking victims and sex worker survivors. PVYSC’s culinary program director has assisted this program by sharing the grocery store and budgeting curriculum, which educates participants on the importance of food cost. With the culinary program’s help,

“Taking Flight” participants were also able to receive meal boxes from the local food bank, created with planned ingredients and a menu, so that participants could prepare a healthy and flavorful home-cooked meal for their families.

- A female resident from PVYSC’s culinary program is scheduled to conduct a cooking class for the “Taking Flight” participants, teaching them to cook healthy meals at home.

Marvin Foote Youth Services Center’s Food Service Work Program

The Marvin W. Foote Youth Center serves detained youth; therefore, youth length of stay in this detention program is relatively short (averaging 16 days). Although the majority of residents are short-term, this does not impact the many benefits that the culinary program provides for the participants. Three staff positions manage the program with great enthusiasm, teaching, coaching and interaction with the youth on a daily basis. The youth in the program learn work-related skills, gain work-related experience, all while learning life skills and social skills as well.

To qualify for the program, youth must fill out an application (very similar to a job application). They are held accountable and expected to complete the application to the best of their ability, including obtaining signatures from school staff, medical staff, and a youth services supervisor as support. Youth then turn the application in to food services staff for approval. The approval process occurs weekly at review board meetings. The meeting participants include the food services supervisor, several facility supervisors, representatives from the center’s school, mental health specialists, as well as various facility administrators. Applications are evaluated based upon the youth’s behavioral history and recent behaviors, and consideration is given to the youth’s safety and risk factors. If the youth is determined to be a good candidate for the program, the board and representatives sign the application in approval. The approved applicants are referred to the culinary program staff that manage and operate the program.

Youth are first led through an orientation process (module #1). The youth receive a certificate of achievement for each learning module completed. There are ten (10) total learning modules. Culinary program managers and staff work with the youth center school and housing units to create an effective work schedule for the youth participants. The program is very popular among youth in the detention center, keeps youth engaged in programming, gives participants a feeling of accomplishment, and also provides an incentive to do well.

The program has existed for many years and boasts many success stories. On several occasions, former participants in the program have approached youth center staff at food service businesses in the community. These staff members find it very rewarding to see these youth, out in the public, succeeding in life, outside of detention.

Periodically and in specialized circumstances, Marvin Foote will serve committed youth. Though it is not the norm for the youth center, serving committed youth has its success stories too. Recently, two youth were approved to participate in a work release program, given they were able to gainfully find employment. One youth, through the help of the culinary program and skills learned therein, was able to attain a position at the Garlic Knot restaurant. The second youth attained employment at Walmart. Both program participants listed the culinary program and instructors on their application, in response to work experience and references, and completed their sentences while on work release. The Marvin Foote culinary program staff and managers feel partially responsible for, and proud of, these real-life success stories.

Spring Creek Youth Services Center's Culinary Program

As part of Spring Creek Youth Services Center's (SCYSC) Youth Work Program (YWP), a certification process exists in many areas, including culinary arts. The staff members at SCYSC are trying to offer youth as many relevant certificates as possible, along with a resume construction class and the opportunity to experience an abbreviated interviewing class, which prepares them for job interviews and ultimately aids youth in successful community reintegration. The Spring Creek culinary program has a goal this year to develop and solidify several contacts with actual restaurants, where youth can interview for jobs once they are eligible.

In terms of programming, the culinary arts program requires youth to apply for the program, and if accepted, youth must sign and submit a "Student Work Agreement Form" and a "Juvenile Health and Hygiene Reporting Agreement Form." Once all formalities and policies are met, youth program participants embark upon a curriculum that (on average) takes 300 hours or less to complete, and includes the six (6) following units:

1. Orientation
2. Sanitation
3. Kitchen Safety
4. Standardized Recipes
5. Equipment Usage
6. Receiving & Storage

Upon completion of each unit, exams are administered to assess competency and skill mastery. Scoring is pass/fail or determined using a graded basis, depending upon the requirements of the associated school district. Students must show proficiency in all units to complete the culinary program, and the amount of school credits earned is based-upon the hours spent participating. Finally, youth achievements in the culinary arena include certificates of achievement (for each unit completed, or one for all units completed), the "Dining Hall Award," and the "Certified Cook Award."

Upon completion of the curriculum and exams, students proceed to prepare and polishing their resumes, and practice for job interviews.

Appendix D: Technical Methods

As recommended by the Office of the State Auditor (OSA), this appendix provides technical guidance detailing the data considerations, data parameters, and to inform external parties on the steps necessary to replicate calculations performed and resulting outcomes presented in this report.

Exam Types and Rasch Unit (RIT)

The MAP assessment consists of testing in four primary academic subjects: Reading, Math, and Language Usage. Student growth norm scores, which provide projections to assess student growth in comparison to a nationally-normed sample, are available for grades K-10 in Reading, Math, and Language Usage. Historically, NWEA has released new RIT norms on a fluctuating triennial and quadrennial schedule, beginning with the first release in 1996 (NWEA, 2011). As of the date of publication, the most recent release of RIT norms publicly-available was 2015.

2015 RIT Norms

Past reports on educational outcomes supplied by the Division of Youth Services have relied on RIT status scores to assess the grade level proficiency of students received by the Division. RIT status scores released by NWEA in 2008, and 2011 were central to assessing current grade for exams completed previous to August 2015. Per recommendation from NWEA, and as described in the 2015 NWEA Measures of Academic Progress Normative Data release, “Slight differences between 2008, 2011, and 2015 RIT norms; each potentially attributable to student demographics, methodological improvements, and the adoption of the Common Core State Standards, solicit the use of one set of norms for all exams” (NWEA, 2015, p. 1). In addition, due to limitations associated with previous 2015 RIT scale norms extrapolated by the Division of Youth Services, RIT scale norm calculations utilizing the 2015 RIT scale norms reference table are not included in this report. DYS staff members use grade level proficiency in practice to determine the appropriate curriculum for youth by translating RIT scale norm scores to an estimated grade proficiency.

Initial MAP Exam

As aforementioned, all committed youth complete a series of initial MAP assessments in Reading, Language Usage, and Mathematics. Students are tested in one of two designated assessment YSCs: Mount View, and Grand Mesa. Following screening, and completion of the first MAP assessment, students tested in Mount View YSC will transfer to another YSC, and students tested in Grand Mesa **may** transfer as well. Therefore, almost all subsequent exams, following the initial admission exam, are completed at a Youth Services Center other than the original assessment facility. Due to two-fold concerns regarding the current testing process: concerns about the quality of academic data collected during a challenging and stressful time of transition, and the impact of assessment fatigue, DYS is in the process of shifting to a decentralized testing process.

Low Performance

MAP exams are adaptive; meaning each correct item response is followed by a more difficult item, while each incorrect response is followed by an easier item (Northwest Evaluation Association, 2013, p. 6). Recommendations shared by NWEA specify it is appropriate to assume that students will answer at least 50% of the questions correctly. All exams, including initial and follow-up exams with fewer than 40% correct responses are used as a measure low engagement. Students may test and retest more than once. Each flagged exam is retained in the NWEA MARC system, as well as the DYS Data Management Database.

Brief Duration

While it is possible to obtain a valid score in less than 20 minutes on Language Usage exams, and less than 25 minutes on Reading and Math exams, data reviewed by NWEA show validity is unlikely (see NWEA, August, 2018).

ADDITIONAL DATA CONSIDERATIONS

11th and 12th Grade Norms

As described in the Youth Demographics section of this report, the average grade of youth in the cohort aligned with the 11th grade ($\mu=16.9$ years-old; range: 13.2 - 20.0 years-old). NWEA provides student growth norms for students up to, and including, the 10th grade. As described by NWEA (2013),

Since MAP measures student's achievement levels in General Reading, Mathematics, Language Usage, and Science, the content assessed does not align well to typical high school junior and senior-level content-based courses (e.g., English literature, Pre-calculus)...Since this population is not representative of the overall population across the country, 11th and 12th grades are not included in the NWEA norming studies. (p. 4)

Time Periods

Student growth norms employed by AECs are dependent on the time period during which the student completes the initial and follow-up exams. In a traditional school setting, growth is calculated from the initial exam of the school year to the end of the first academic period (Fall-to-Winter). If a student is expected to increase by five RIT student status norm points in the first academic period, and five in the second academic period (Winter-to-Spring), total expected academic growth for the year would be ten RIT points (Fall to Spring). This model evaluates academic growth according to the highest level of academic achievement, rather than current grade targets specific to

initial achievement within an academic period. This differs from traditional methods and requires a more intensive demonstration of academic growth to meet AEC student status growth targets.

To ensure uniformity across all data points, the Division calculated academic quarter and academic year terms using exam dates retained in the MARC data system.

NWEA normative data, including growth norms are designed to support traditional school settings. The Division of Youth Services schools operate year-round, including during the Summer.

NWEA Growth Calculations (National Traditional School Norms for Comparison Purposes)

In academic year 2014-15, NWEA made available 66 additional referenced fields in the MARC data system extract file. These fields include a range of items, including: conditional growth indices; percentiles; and, observed and projected indicators of growth. While these fields are of utility, the calculations necessary to generate these data require the use of standardized exam administration windows, which is not feasible for ongoing initial assessments, and student re-examination. DYS staff complete re-examinations in the weeks following the initial exam, and the retest must meet all validation requirements to forego further retest, however, they lack sufficient NWEA calculations to include in matched analyses. Importantly, data collected during terms preceding the Fall term of 2014-15 similarly rely on defined testing windows for standardized calculation of RIT scale norm percentile, and educational growth.

A series of growth calculations available from NWEA were integrated into analyses to provide a point of comparison to AEC growth norm calculations. These included student growth norms, and school growth norms, each discussed separately below.

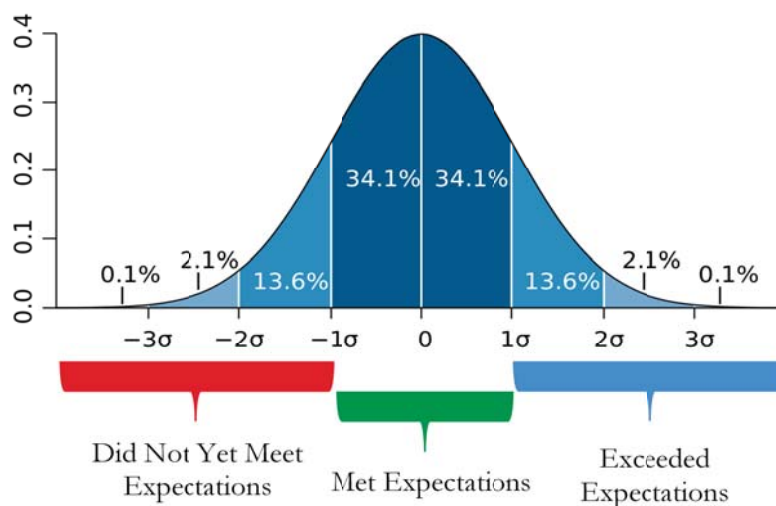
Student Growth Norms

To provide additional insight regarding the growth exhibited across timepoints, DYS explored the extent to which the growth of youth in the discharge cohort aligned with typical growth for students in traditional schools. **A series of student growth norms, available by academic subject and grade, provide detail regarding typical growth for students across terms. As described by NWEA, these tables show “mean growth when the mean grade level status score is used as the starting score. In each case, the starting score is treated as a factor predicting growth” (NWEA, August, 2015). Using a series of tables, per academic subject, similar to the following prepared by NWEA to describe typical Reading growth (NWEA, August, 2015) DYS evaluated the difference in RIT scores between each exam.**

2015 READING Student Growth Norms						
Grade	Begin-to-Mid Year		Mid-to-End Year		Begin-to-End Year	
	Mean	SD	Mean	SD	Mean	SD
K	10.3	6.01	6.81	5.46	17.1	8.11
1	10.8	6.00	5.99	5.46	16.8	8.09
2	9.5	6.05	4.52	5.49	14.0	8.20
3	7.3	5.79	3.02	5.33	10.3	7.59
4	5.4	5.56	2.33	5.19	7.8	7.05
5	4.2	5.60	1.97	5.21	6.1	7.15
6	3.2	5.62	1.54	5.22	4.8	7.19
7	2.5	5.58	1.25	5.20	3.7	7.11
8	1.9	6.05	0.99	5.49	2.8	8.19
9	1.1	6.35	0.60	5.68	1.7	8.87
10	0.6	6.72	0.17	5.91	0.7	9.66

To provide an example of each calculation, RIT scores reported at Winter term were subtracted from scores reported in the Fall term to understand student growth from the beginning of the year to mid-year. In accordance with steps recommended by Dr. Jody Ernst (2012, p.7), DYS prioritized annual measurements of growth, when available. This step was repeated across all terms described in the previous figure, for all youth, across all subjects, across all academic years.

Next, DYS integrated standard deviation calculations to construct broader measures of typical growth. For instance, over the course of an academic year, typical growth for a student may be 10.3 points, with a standard deviation of 7.59. The standard deviation was added and subtracted from the average/mean growth (i.e., 10.3 ± 7.59) to create a window of typical growth. One standard deviation from the mean for the normally-distributed sample utilized by NWEA means 68.2% of exam scores will fall within this range of growth projections. As shown in the following graphic, growth falling within this range was then coded as meeting 'typical' growth, and ranges exceeding, or not yet meeting typical growth, were coded accordingly.



It is important to consider that this technique for evaluating student growth was employed by the Division of Youth Services in lieu of the application of ‘instructional days’. Similar to a model for evaluating treatment in which the treatment outcomes vary by the amount of time a youth receives treatment, instructional days provide an added layer of context for understanding differences in outcomes. NWEA developed student growth norm means across a broad array of populations, and the number of instructional days across the populations differ. As described by NWEA (2015), “student growth norms are designed to be coupled with the inclusion of instructional days in computing growth for students, a process which better contextualizes reference for understanding MAP RIT scores” (p.4).

Fundamental changes to the DYS examination process and data administration tracking are necessary to integrate this level of exploration. DYS began implementing these changes in FY 2018-19. Although 15-week periods of instruction and testing are employed from Fall-to-Winter, and Winter-to-Spring, this does not accurately represent instructional days for students. As aforementioned, students move in and out of treatment, probation, facilities, and court during academic quarters. Instructional days must be tracked at the individual-level and integrated into analyses in a meaningful way to employ this level of rigor to the evaluation of academic outcomes.

School Growth Norms

The objective of exploring data using school growth norms was to apply comparatively rigorous standards of typical growth across the student body represented by the discharge cohort. As described by NWEA (2015), “The important difference between student and school growth is in the [standard deviation] columns. As the tables show, the growth of students at any grade level is understandably more muted than the growth of the individual students” (p.5).

2015 READING School Growth Norms						
Grade	Begin-to-Mid Year		Mid-to-End Year		Begin-to-End Year	
	Mean	SD	Mean	SD	Mean	SD
K	10.3	1.73	6.8	1.29	17.1	3.02
1	10.8	1.59	6.0	1.20	16.8	2.79
2	9.5	1.43	4.5	1.07	14.0	2.50
3	7.3	1.17	3.0	0.88	10.3	2.05
4	5.4	0.96	2.3	0.72	7.8	1.68
5	4.2	1.02	2.0	0.77	6.1	1.78
6	3.2	1.10	1.5	0.82	4.8	1.92
7	2.5	1.05	1.3	0.79	3.7	1.83
8	1.9	1.29	1.0	0.97	2.8	2.25
9	1.1	1.33	0.6	1.00	1.7	2.32
10	0.6	1.59	0.2	1.19	0.7	2.78

Similar to calculations described in methods for student status growth, DYS integrated standard deviation calculations to construct broader measures of typical growth. For instance, over the course of an academic year, typical growth for a student may be 10.3 points, with a standard deviation of 2.05. The standard deviation was added and subtracted from the average/mean growth (i.e., 10.3 +/- 7.59) to create a window of typical growth.

The use of School Growth norms will provide a contextual element for understanding growth patterns described in future reports, and better comparisons across cohorts. DYS utilized the same methods described for student growth norms, to integrate school growth norm calculations and standard deviation into the analysis. Importantly, DYS has adapted nomenclature commonly attributed to ‘school’ growth to represent the entire discharge cohort, across YSCs. Similar to data presented throughout this report, school growth norms were aggregated across facilities.

NWEA Median Percentile

Developed from extensive analyses of nationally-normed samples in traditional schools, exams completed by students in the MARC system within the defined testing windows generate a percentile score designed to support peer comparison. The median of all achievement scores generated by the MARC system, across all academic subjects, and school years provides valuable insight into the academic achievement level of students in the cohort. Students in traditional schools are expected to fall in the 50th percentile, or more accurately, normed data extend across a normal distribution and 68% will fall between the 40th and 60th percentile, which represents one standard deviation from mean scores collected across students completing the MAP.

Importantly, percentiles are not available for all valid MAP exams. MAP percentiles also represent the widely-preferred measure of student growth. As required by NWEA, testing windows must parallel standard testing schedules utilized by traditional schools. In other words, students must complete MAP tests on a regular schedule defined by school instruction periods (e.g., trimester, quarter, or a comparable schedule defined by each school). As discussed previously, DYS conducts testing on a quarterly schedule following defined periods of instruction. Currently, while a majority of exams are completed on this schedule, it is not feasible for all students to test on this schedule, including students received into assessment centers, and students in private secure facilities.

DYS administrative staff members collaborate with each Youth Services Center to define a testing week, and assign the weeks of instruction in the MARC system. Exams completed two weeks before the selected testing window, and two weeks after the window are considered valid and include percentile.

Student grade-level, expected grade-level proficiency, and other indicators of student status are included in this report as well, as each provides valuable insight and context regarding student achievement when each youth is received into commitment by the Division of Youth Services.

AEC Growth Calculations (National Alternative School Norms for Comparison Purposes)

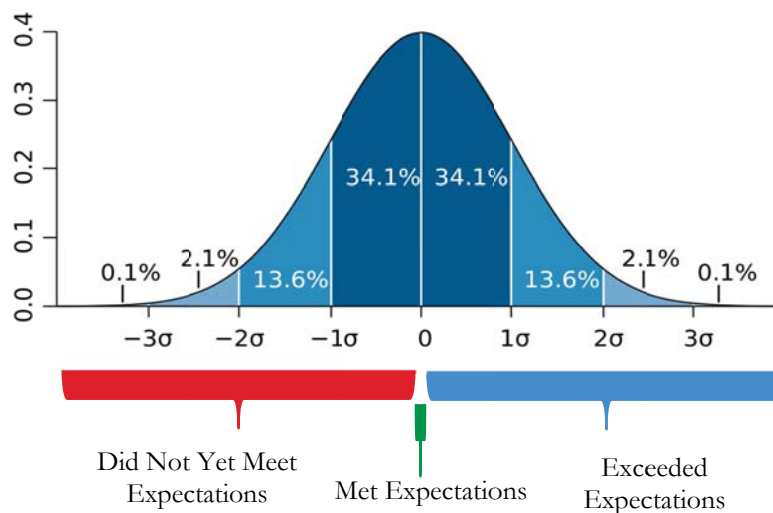
Paired exams completed in Spring followed by Fall, Winter followed by Fall, and other combinations spanning more than one year between initial and follow-up exam were not included in analyses. All available norms were combined and indexed in SPSS 25.0, according to RIT scale norm scores, academic term, and current grade. Importantly, as shown in the following table, expected growth

differs by academic subject, academic period, and the RIT score of the student's initial exam. For example, typical growth for a student presenting a 175 on the initial MAP exam is seven RIT points over the course of the Fall-to-Winter academic quarter. If the youth meets this growth target (182 points), expected growth of the student is particular to grade-level and the youth has not changed grades in the second academic term (Winter-to-Spring), so the growth target in the fall will be 4 RIT points in the second academic quarter.

Table 9. NWEA Growth Targets for AEC Students in Reading

Fall RIT Range	Fall RIT Grade Equivalent	Fall to Winter Growth Target	Winter to Spring Growth Target	Fall to Spring Growth Target
up to 146	K	5 RIT	4 RIT	9 RIT
147-160	1 st	7 RIT	6 RIT	13 RIT
161-179	2 nd	7 RIT	4 RIT	11 RIT
180-192	3 rd	5 RIT	3 RIT	8 RIT
193-201	4 th	4 RIT	2 RIT	6 RIT
202-208	5 th	3 RIT	1 RIT	4 RIT
209-213	6 th	2 RIT	1 RIT	3 RIT
214-217	7 th	2 RIT	1 RIT	3 RIT
218-220	8 th	2 RIT	1 RIT	3 RIT
221-222	9 th	1 RIT	1 RIT	2 RIT
223-226	10 th	1 RIT	1 RIT	2 RIT
227	11 th	1 RIT	1 RIT	2 RIT
228 and above	Above 11 th	0.5 RIT	0.5 RIT	1 RIT

These academic *targets*, developed by AECs under the guidance of the Colorado Department of Education, provide a set of norms to guide the interpretation of growth patterns of students with needs best served outside of a traditional school setting. Importantly, as shown in the previous table, upper- and lower-limits developed from standard deviation were not included in AEC growth norm calculations. As described by Dr. Ernst (2012), “These targets were determined using the differences between medians in the 2008 NWEA Norm Placement document, which also maps onto the average growth...but do not allow for negative growth in target setting” (p. 8). This is an important difference, and as detailed in the following graphic, there is less variance in what is considered ‘typical growth’, and students must surpass a single data point to demonstrate growth in line with typical student growth.




The AEC growth *calculations* were developed through determining the percentile ranks of observed MAP growth in AECs across the country.

In addition to the aforementioned growth measures, DYS utilized percentile growth developed by AECs to explore academic growth. The tool for assigning and evaluating growth percentiles included a series of percentiles designed to categorize the magnitude of change in RIT scale score from an initial exam to a subsequent exam. DYS aligned the categorization of all calculations prepared by AECs, indexed standard growth calculations, and assigned growth percentiles according to the shift in RIT scores across all matched exams, according to school subject, academic term, and current grade in SPSS 25.0.

Grade Application

For the purpose of this report, student status growth norms and growth targets were calculated on the current grade of the student, rather than the grade proficiency demonstrated by the student. Stated differently, an 11th grade student performing at a seventh grade level was expected to demonstrate growth commensurate with other 11th graders, rather than the growth of 7th graders. Importantly, RIT scores maintained by both AECs and NWEA decrease uniformly as students age. This means students initially exhibiting deficits at later stages in life (e.g., a 19-year-old student presenting 6th grade proficiency) have significantly lower growth thresholds to demonstrate successful academic growth.

Appendix E: DYS Policy C 17.8

<p>COLORADO DEPARTMENT OF HUMAN SERVICES DIVISION OF YOUTH SERVICES</p> 	POLICY C 17.8	PAGE NUMBER 1 OF 9
	CHAPTER: Programs and Services	
	SUBJECT: Educational Programs	
	EFFECTIVE DATE: May 1, 2019 REVIEW DATE: N/A	
<p>THIS POLICY RELATES TO:</p> <p>Residential Contract Programs</p>	<p>Anders Jacobson, Director</p>	

I. POLICY:

Each Division of Youth Services' residential contract program shall have a comprehensive educational program which includes opportunities for each youth to earn a high school diploma or General Equivalency Diploma (GED), AND OPPORTUNITIES TO enroll in a post-secondary education program, REMEDIAL SKILLS COURSEWORK, AND CAREER AND POSTSECONDARY WORKFORCE READINESS PROGRAMMING. Special education and all federally funded programs shall be in compliance with Federal Laws and State Statutes. Special education students shall have a current Individual Education Program (IEP) WHICH FOLLOWS ALL FEDERAL AND STATE LAWS IN ADDITION TO THE DISTRICT OR OVERSIGHT AND GOVERNING BODY COMPREHENSIVE PLAN.

II. KEY TERMS:

- A. Career and Technical Education (CTE): A program which prepares youth for careers by using manual, automated, or practical activities related to a specific trade, vocation or occupation.
- B. Education Program: A broad CREDIT EARNING educational program which meets all requirements set forth by the Colorado Department of Education that is suited to the participating youths' needs and abilities.
- C. Teacher: A person responsible for the instructional content, ENGAGEMENT, BEHAVIORAL management AND TEACHING of the ASSIGNED YOUTH IN THE classroom. All teachers assigned to a classroom instructing Division of Youth Services' youth shall be licensed by the Colorado Department of Education and assigned classroom duties commensurate with their license. OR HAVE EVIDENCE OF WAIVERS SOUGHT AND APPROVED FOR TEACHER LICENSING THROUGH CDE.
- D. Transitional Services: Educational transitional services provide assistance to youth in locating community services including education, employment preparation, and employment.

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III. ASSOCIATED FORMS:

1. DYS EDUCATION OUTCOMES REPORTING TEMPLATE

IV. PROCEDURES:

A. Educational Program Requirements:

1. THE RESIDENTIAL CONTRACT PROGRAM WILL HAVE AN OVERSIGHT AND/OR GOVERNING STRUCTURE WHICH MONITORS AND AUDITS THE PROGRAM AND WILL REPORT AUDIT, COMPLIANCE, AND LICENSING PERFORMANCE INFORMATION AND FINDINGS ANNUALLY TO THE DIVISION OF YOUTH SERVICES PROGRAM MANAGEMENT. RESIDENTIAL CONTRACT PROGRAMS MUST STAY IN COMPLIANCE WITH ALL OVERSIGHT AND GOVERNING STRUCTURE EXPECTATIONS AND LICENSING RULES.
2. All education classes shall have no less than one (1) teacher for every fifteen (15) youths assigned to a classroom.
3. Based on the information obtained through assessments, evaluations and documented observations, youth are placed in Educational or Career and Technical Education Programs as appropriate. The special education process shall be initiated when necessary.
4. Provisions shall be made IN ACCORDANCE TO STATE AND FEDERAL LAW for youth who require special services because of physical, cognitive, emotional or learning disabilities.
5. WHEN THERE IS A CHANGE OF PLACEMENT FOR A YOUTH, ALL STATE AND FEDERAL REQUIREMENTS AND DOCUMENTATION MUST BE FOLLOWED TO INCLUDE A BEST INTEREST DETERMINATION MEETING.
6. Programs up to the completion of high school and/or GED preparation shall be available at no cost to the youth.
7. There shall be incentives for educational participation and provisions for the formal recognition of specific educational accomplishments through credits, certificates and diplomas. Graduation ceremonies should also be conducted or made available, as appropriate.

B. Comprehensive Education Program:

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A Comprehensive Education Program shall be available to all youths. Counseling and other non-educational activities shall not conflict with a youth's participation in the education program. The Comprehensive Education Program shall include the following at minimum, WHICH WILL BE DOCUMENTED AND AVAILABLE FOR REVIEW:

1. Program description, and
 2. Education services as population dictates shall be provided that MAY include:
 - a. Middle School Education.
 - b. Secondary Education.
 - c. Post-Secondary Education.
 - d. Special Education.
 - e. Career and Technical Education.
 - f. English as a Second Language (ESL) and English Language Learner (ELL).
 - g. Transition services AND/OR PREPARATION FOR TRANSITION TO NEW EDUCATION SETTING OR EMPLOYMENT.
 - h. Title I FUNDED INTERVENTIONS.
 3. Open entry/open exit courses, and
 4. Written description of the Special Education Process and Service Delivery Model, and
 5. Brief descriptions for courses offered in academic, Career and Technical Education and technology areas, and
 6. The process for establishing youth and program schedules WHICH ARE documented in Colorado Trails Database where available AND A DIGITAL STUDENT INFORMATION SYSTEM WHERE AVAILABLE.
- C. Program Assessment/Evaluation:

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1. The education program shall establish annual and long-range performance objectives THAT SHALL BE MEASURED AND MONITORED ANNUALLY. OBJECTIVES SHALL BE SHARED WITH THE EDUCATIONAL PROGRAM'S OVERSIGHT AND GOVERNING BODY AND THE DIVISION OF YOUTH SERVICES DIRECTOR OF EDUCATION.
 2. ON A QUARTERLY AND ANNUAL BASIS, THE RESIDENTIAL CONTRACT EDUCATION PROGRAM SHALL SUBMIT TO THE DIVISION'S DIRECTOR OF EDUCATION, A REPORT ON THE EDUCATION OUTCOMES RELATED TO THOSE DIVISION OF YOUTH SERVICES' YOUTH SERVED BY THE RESIDENTIAL CONTRACT EDUCATION PROGRAM.
 3. THE RESIDENTIAL CONTRACT EDUCATION PROGRAM SHALL ELECTRONICALLY SUBMIT THE REPORT USING THE "QUARTERLY AND ANNUAL RESIDENTIAL CONTRACT EDUCATION PROGRAM OUTCOME REPORT" TEMPLATE PROVIDED BY THE DIVISION OF YOUTH SERVICES.
 - a. THE ANNUAL RESIDENTIAL CONTRACT EDUCATION PROGRAM OUTCOME REPORT SHALL BE DUE TO THE DIVISION OF YOUTH SERVICES' DIRECTOR OF EDUCATION ON OR BEFORE JULY 16TH OF EACH FISCAL YEAR.
 - b. THE QUARTERLY RESIDENTIAL CONTRACT EDUCATION PROGRAM OUTCOME REPORT SHALL BE SUBMITTED TO THE DIVISION OF YOUTH SERVICES' DIRECTOR OF EDUCATION NO LATER THAN TWO WEEKS FOLLOWING THE END OF EACH QUARTER OF THE STATE FISCAL YEAR.
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4. THE ANNUAL RESIDENTIAL CONTRACT EDUCATION PROGRAM OUTCOME REPORT SHALL INCLUDE THE FOLLOWING INFORMATION ON DIVISION OF YOUTH SERVICES' YOUTH WHO RECEIVED EDUCATIONAL SERVICES DURING THE FISCAL YEAR:
 - a. ANNUAL CENSUS OF YOUTH SERVED, AND
 - b. THE AVERAGE LENGTH OF STAY, AND
 - c. YOUTH INDIVIDUAL SASID AND TRAILS ID IF AVAILABLE, AND
 - d. TOTAL GED ATTEMPTS BY CONTENT AND GEDS EARNED BY CONTENT WITH DATE RECEIVED, AND

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- e. TOTAL NUMBER OF DIPLOMAS EARNED CATEGORIZED BY THE ACCREDITED SCHOOL DISTRICT OR ORGANIZATION, AND
- f. PERCENTAGE OF ALL DIVISION OF YOUTH SERVICES' YOUTH SERVED WHO EARNED A DIPLOMA AND PERCENTAGE OF THE SAME POPULATION WHO EARNED A GED, AND
- g. LIST OF EACH YOUTH WHO EARNED A GED OR DIPLOMA BY SASID AND TRAILS ID (IF AVAILABLE), AND
- h. TOTAL NUMBER OF YOUTH WHO HAD AN IEP AND PERCENTAGE OF TOTAL DIVISION OF YOUTH SERVICES' POPULATION, AND
- i. TOTAL NUMBER OF YOUTH WITHIN EACH PRIMARY DISABILITY CATEGORY, AND
- j. THE PERCENTAGE OF YOUTH WITH AN IEP WHO GRADUATED WITH A DIPLOMA, AND
- k. THE PERCENTAGE OF YOUTH WITH AN IEP WHO ATTEMPTED OR EARNED THEIR GED, AND
- l. TOTAL NUMBER OF YOUTH ENROLLED IN CTE COURSES, AND
- m. TOTAL NUMBER OF YOUTH WHO EARNED A CERTIFICATION BY CONTENT OR COURSE, AND
- n. NUMBER OF YOUTH WHO ATTENDED OR EARNED COLLEGE CREDITS, AND
- o. PERCENTAGE OF YOUTH WHO WERE POST-SECONDARY, AND

- p. ANNUAL GROWTH AND ACHIEVEMENT REPORTS IN THE AREAS OF READING AND MATH, AND
- q. INDIVIDUAL YOUTH ACHIEVEMENT REPORTS OR ACHIEVEMENT INFORMATION FROM INITIAL TEST TO LAST TEST WITHIN THE FISCAL YEAR AS MEASURED ON STANDARDIZED AND VALIDATED ASSESSMENT TOOLS. ACHIEVEMENT SHOULD BE REPORTED ON ALL ASSESSMENT

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TOOLS USED WHICH MAY INCLUDE BUT ARE NOT LIMITED TO STAR 360, NWEA MAP, AND COLORADO MEASURES OF ACADEMIC PROGRESS (CMAS), AND

- r. INDIVIDUAL YOUTH GROWTH REPORTS FOR THOSE WHO HAVE A LENGTH OF STAY OF NINETY (90) DAYS OR MORE AND FOR EVERY NINETY (90) DAYS THEREAFTER ON STANDARDIZED AND VALIDATED ASSESSMENTS OR PROGRESS MONITORING TOOLS, AND
 - s. TITLE 1 ANNUAL REPORT, IF APPLICABLE, AND
 - t. GROWTH AND ACHIEVEMENT REPORTS MAY, BUT ARE NOT REQUIRED TO, INCLUDE INFORMAL ASSESSMENT DATA, ANNUAL RATE OF GRADES EARNED, AND ANNUAL END-OF-GRADING TERM GRADE POINT AVERAGES.
5. THE QUARTERLY RESIDENTIAL CONTRACT EDUCATION PROGRAM OUTCOME REPORT SHALL INCLUDE THE FOLLOWING INFORMATION ON DIVISION OF YOUTH SERVICES' YOUTH WHO RECEIVED EDUCATIONAL SERVICES DURING THE QUARTER:
- a. CENSUS OF YOUTH SERVED, AND
 - b. LENGTH OF STAY OF YOUTH SERVED, AND
 - c. YOUTH INDIVIDUAL SASID AND TRAILS ID IF AVAILABLE, AND
 - d. GED ATTEMPTS BY CONTENT AND GED EARNED BY CONTENT WITH DATE RECEIVED, AND
 - e. NUMBER OF DIPLOMAS EARNED CATEGORIZED BY THE ACCREDITED SCHOOL DISTRICT OR ORGANIZATION, AND
 - f. THE PERCENTAGE OF THE DIVISION OF YOUTH SERVICES POPULATION WHO EARNED A DIPLOMA AND THE PERCENTAGE OF THE SAME POPULATION WHO EARNED A GED, AND
 - g. IDENTIFICATION OF YOUTH BY NAME, SASID AND TRAILS ID WHO EARNED A GED OR DIPLOMA, AND

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- h. NUMBER OF YOUTH WHO HAD AN IEP AND PERCENTAGE OF TOTAL DIVISION OF YOUTH SERVICES' POPULATION TO INCLUDE,
 - i. NUMBER OF YOUTH WITHIN EACH PRIMARY DISABILITY CATEGORY.
 - ii. THE PERCENTAGE OF YOUTH WITH IEPS WHO GRADUATED WITH A DIPLOMA.
 - iii. THE PERCENTAGE OF YOUTH WITH IEPS WHO ATTEMPTED/EARNED GED.
- i. NUMBER OF YOUTH ENROLLED IN CTE COURSES, AND
- j. NUMBER OF YOUTH WHO EARNED A CERTIFICATION BY CONTENT OR COURSE, AND
- k. QUARTERLY NUMBER OF YOUTH TAKING WORK KEYS TESTS AND SCORES FOR EACH TEST, IF APPLICABLE, AND
- l. NUMBER OF YOUTH WHO ATTENDED OR EARNED COLLEGE CREDITS, AND
- m. GROWTH AND ACHIEVEMENT REPORTS IN THE AREAS OF READING AND MATH, AND
- n. ACHIEVEMENT REPORTS OR INFORMATION FOR YOUTH TO INCLUDE INITIAL TESTS ON STANDARDIZED AND VALIDATED ASSESSMENT TOOLS FOR YOUTH WHO HAVE BEEN ENROLLED DURING THE SCHOOL TESTING WINDOW, OR FOR 90 DAYS, WHICHEVER COMES FIRST, AND
- o. GROWTH REPORTS FOR YOUTH WHO HAVE A LENGTH OF STAY OF NINETY (90) DAYS OR MORE AND FOR EVERY NINETY (90) DAYS THEREAFTER ON STANDARDIZED AND VALIDATED ASSESSMENT TOOLS WHICH MEASURE GROWTH, AND
- p. QUARTERLY GROWTH AND ACHIEVEMENT REPORTS MAY, BUT ARE NOT REQUIRED TO, INCLUDE INFORMAL ASSESSMENT DATA, GRADE DISTRIBUTION OF GRADES EARNED, AND END-OF-GRADING TERM GRADE POINT AVERAGES.

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6. EACH CONTRACT SITE THAT PROVIDES ON-SITE SCHOOL PROGRAMMING SHALL ALSO PROVIDE AN ANNUAL HUMAN RESOURCES REPORT THAT SHALL INCLUDE THE FOLLOWING INFORMATION:
 - a. TOTAL NUMBER OF LICENSED SCHOOL PERSONNEL, AND
 - b. TOTAL NUMBER OF PARAPROFESSIONALS, AND
 - c. TOTAL NUMBER OF OFFICE AND ADMINISTRATION STAFF, AND
 - d. TOTAL NUMBER OF NEW HIRES WITHIN THE YEAR AND PERCENTAGE, AND
 - e. TOTAL NUMBER OF TEACHERS WHO ARE CONSIDERED IN-FIELD BY CDE AND THE PERCENTAGE, AND
 - f. TOTAL NUMBER OF TEACHERS WHO ARE CONSIDERED OUT-OF-FIELD BY CDE AND THE PERCENTAGE, AND
 - g. TOTAL NUMBER OF CDE WAIVERS SOUGHT FOR TEACHING STAFF AND PERCENTAGE OF TEACHING STAFF , AND
 - h. EACH TEACHING STAFF CONTENT AREA AND YEARS OF EXPERIENCE, AND
 - i. NUMBER OF TEACHING VACANCIES FOR OVER NINETY (90) DAYS THROUGHOUT THE FISCAL YEAR.

7. DIVISION OF YOUTH SERVICES WILL BE ALLOWED TO PERFORM A SCHEDULED ANNUAL PROGRAM EVALUATION ON SITE USING THE GOVERNING BODY CRITERIA IF REQUESTED. THE RESIDENTIAL CONTRACT PROGRAM SHALL HAVE A DESIGNATED PERSON TO MAINTAIN A GENERAL EDUCATION AND A SEPARATE SPECIAL EDUCATION FILE, AS NECESSARY, FOR EACH INDIVIDUAL ENROLLED IN THE RESIDENTIAL EDUCATION CONTRACT PROGRAM. THE GENERAL EDUCATION FILE SHOULD CONTAIN CURRENT AND PAST TRANSCRIPTS IF IN CREDIT EARNING COURSES, CERTIFICATES, COURSE SCHEDULE, GED OR DIPLOMA EVIDENCE, AND ASSESSMENT INFORMATION. SPECIAL EDUCATION FILES SHALL CONTAIN SIGNATURE PAGES AND REQUIRED DOCUMENTATION. EACH FILE SHALL UTILIZE AN ACCESS SIGNATURE PAGE.

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8. In accordance with applicable State and Federal laws, students' rights to privacy and confidentiality shall be maintained.
9. FINAL EDUCATION TRANSCRIPTS, GED DOCUMENTATION, AND DIPLOMA DOCUMENTATION MUST BE SENT TO THE DIVISION OF YOUTH SERVICES PROGRAM MANAGER AND DIVISION OF YOUTH SERVICES EDUCATION OFFICE WITHIN 10 BUSINESS DAYS OF WHEN STUDENT DISCHARGES FROM THE RESIDENTIAL CONTRACT EDUCATION PROGRAM.

“Education is not the filling of a pail, but the lighting of a fire.”

~William Butler Yeats (Irish Poet)

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COLORADO

Division of Youth Services

Office of Children, Youth & Families