SUPPLEMENTAL TO *DATA VALIDATION REPORT: NEVADA CONNECTIONS ACADEMY, 2016 DATA*

2015 DATA VALIDATION SUPPLEMENTAL

PRODUCED BY TIBERIO GARZA, PHD.

NEVADA CONNECTIONS ACADEMY 2015 DATA

The purpose of this supplemental is to include validation of 2015 data in conjunction with the *Data Validation Report: Nevada Connections Academy 2016 Data*. The same sentence structure used in illustrating data-driven statements and graduation calculations found in the previous report (i.e., *Data Validation Report: Nevada Connections Academy 2016 Data*) are the same in this supplemental. The difference between this supplemental and the 2016 Data Validation Report is the numerical differences from 2016 to 2015. The decision to add 2015 supplemental material is to provide the State Public Charter School Authority (SPCSA) with verified data from more than one year and describe year to year differences. The same data-driven sentence structures and graduation rates are provided here as to explicitly show what was examined and assessed for validity.

Thus, as a supplemental to the 2016 data validation report the following sections still align with work conducted for NCA 2015 data. The same verbiage and intention found in the following 2016 data validation report are consistent with this supplemental in describing the following sections: Purpose, Policy Compliance, Scope of Validation, Objectives. The Critical Assessment (i.e., section also found in the 2016 data validation report) of variables and calculations are all the same except that the data is from 2015, which changes the numerical outcomes but retains the same meaning. The only exception to the verbiage in the 2016 validation report is the notion of the supplemental describing 2015 data and a comparison of 2016 to 2015 data.

Table 1. *Reproduced from the 2016 Data Validation Report for Assessing 2015 Data*

Description–2015 Data	Error-type examined	Results	Consensus
Graduation rate by Nevada state law	Calculation; Consistency with other calculations	42.8% graduation rate	Reached
Graduation rate by Nevada state law + not classifying 5th year grads as non-graduates	Calculation; Consistency with other calculations	45.4% graduation rate	Reached
Graduation rate by federal ACGR + not classifying students enrolling one semester or more behind as non-graduates	Calculation; Consistency with other calculations	57.2% graduation rate	Accepted
Graduation rate by students enrolled at NCA for all four years of high school	Calculation; Consistency with other calculations	83.8% graduation rate	Accepted
Cohort: Credit deficient status upon enrollment at NCA and economically disadvantaged category composition	Calculation; Consistency with other calculations	Matched estimates*	Reached
Non-graduates: Credit deficiency status upon enrollment	Calculation; Consistency with other calculations	72.6% non-graduates	Reached
Non-graduates: Credit deficiency status and arrival grade upon enrollment	Calculation; Consistency with other calculations	Matched estimates	Reached
Credit deficient non-graduates: Prior school district	Calculation; Consistency with other calculations	Matched estimates	Reached
Non-graduate who enrolled for a 5th year	Calculation; Consistency with other calculations	Matched estimates	Reached
Cohort: Average length of enrollment	Calculation; Consistency with other calculations	< 1.5 years	Reached
Cohort: Students arriving in their 11th or 12th grade year one semester or more behind that were economically disadvantaged	Calculation; Consistency with other calculations	Matched estimates	Reached

Note. [1]Definitions provided specific conditions are calculating some estimates, for more information on definitions please see Appendix. *Background Information assessed a sample of 915 students and included 105 variables pertaining to demographic information, credit deficiency, enrollment, and graduates versus non-graduates. ACGR=Adjusted Cohort Graduation Rate.

After reviewing the data files, there was no indication of misrepresented data pertaining to errors in data entry. Calculations presented in Table 1 did not demonstrate any issues through replication. In assessing the evaluator to NCA data results, the calculation outcomes consistently matched.

Inferences under Evaluation

- "46.2% (72) arrived in 12th grade"
- "21.2% of the 2015 non-graduates arrived in their 11th or 12th grade year at least one semester or more behind (>= 2.5 credits)."
  - "87.9% of those students were economically disadvantaged students."
- "80.8% of credit deficient 2015 non-graduates arrived one semester or more credit deficient (126)."
  - "19.2 arrived a few credits behind (< 2.5);"
  - "25.6% arrived one semester behind (>= 2.5, <5); and"
  - "55.1% arrived one year behind (>=5)."
- "2015 Credit deficient non-graduates: Prior school district"
  - "Clark County, 53.8%"
  - "Washoe County, 14.1%"
  - "Nevada Public School Districts (other than Clark and Washoe Counties), 9.6%"
  - "Charter Schools, 7.1%"
  - "Out of State, 11.5%"
  - "Other (Home, Private, Unknown, 3.8%"
- "2015 Non-graduates who enrolled at NCA for a 5th year"
  - "43.9% were successful in graduating from NCA or continuing their education at the school (graduated 5th or 6th year or still enrolled 6th year)."
  - "36.8% of these students graduated from NCA in their 5th year."
  - "38.6% of these students graduated from NCA in their 5th or 6th year."
  - "5.3% are still enrolled at the school (as of April 2017). Note: These are students still enrolled for a 6th year and are potential graduates."
- "2015 Cohort: Average length of enrollment at NCA"
  - "The average length of enrollment for students in the 2015 cohort is slightly less than 1.5 years."
- "2015 Cohort: Percentage of students arriving in their 11th or 12th grade year one semester or more behind that were economically disadvantaged"
  - "Of all students in the 2015 cohort arriving in their 11th or 12th grade year at least one semester or more behind, 73.0% of [sic] were economically disadvantaged students."
  - "Of all students in the 2015 cohort arriving in 11th grade, at least one semester behind, but less than one year behind, 75.0% were economically disadvantaged students."
  - "Of all students in the 2015 cohort arriving in 11th grade, at least one year behind, 87.9% were economically disadvantaged students."

Table 2. *Reproduced table from NCA Data*

Categorization of Cohorts	2015 Cohort	2016 Cohort
Advanced diploma in 4 or less years	4	3
Standard diploma in 4 or less years	115	173
Adjusted diploma in 4 years	3	3
Diploma in 5th year ("For 2016 includes those on-target to graduate at end of year")	21	28
Diploma in 6th year ("Still enrolled students may end up adding to this total")	1	NA
Still enrolled at NCA ("For 2016 cohort does not include those on-target to graduate at end of year")	3	7
Post-secondary enrollment ("without record of formal high school completion, could include adult education and/or HSE completers")	24	13
Withdrew to adult education	19	22
HSE completers with 5 years ("Does not include students enrolling in adult education")	18	25
Other non-graduates/drop-outs	143	171

Note. HSE=High School Equivalency, NA=not applicable.

The values in Table 2 did not depart from the data and indicated validity and reliability. The process involved ensuring the count was correct. Also, the count was depended on how NCA defined categories of cohorts, which were considered reasonable.

Conclusion (Concerns and Takeaways)

The intent of the supplemental was to merely valid NCA results through replication and evaluate inferences for any over-reaching implications not warranted by the data. Concerns were not identified while conducting this work. What diminished the evaluator's concerns was consistency in data products, logical structure within data products, and formulation of statements and calculations across the two years. Thus, the 2015 data presented here and the comparison/averaging between 2015 and 2016 data provided by NCA demonstrates that NCA conducted responsible and ethically justified work pertaining to the data. The statements and calculations made by NCA with support from the data are valid, reliable, and trustworthy.

2015 Data to Be Validated

Overview

The following represent the various data related to the NCA 2015 graduation cohort to be validated. While previously the validation work was related primarily to validating various approaches to graduation calculations, the majority of the work here is related to validating descriptive information about the graduation cohort based on factors such as if the student was credit deficient upon enrollment at NCA, if the student was economically disadvantaged, what grade level the student was when the student enrolled at NCA, the prior school district of the student, and the results of the students from the cohort that re-enrolled for a 5th year.

There are also some items for validation that combine information for the 2015 and 2016 cohorts.

All of the data for validation is contained in the file "nca 2014-15 graduate cohort data file 2017-05-12.xlsx" which is approximately 1 MB in size. It is in Excel format in the Google directory. You will note that this is not nearly as large as the 2016 file as we do not have nearly as much data about the 2015 cohort. There is a Google doc in this directory as well that provides detailed documentation about that file. There is also a Google sheet that will provide a reference point for some of the validation related to the sending district.

Definitions
- **Arrival Year** refers to the appropriate grade level based on the date of enrollment when the student first enrolls at NCA. Some students will enroll, withdraw, and then re-enroll, but the arrival year is based on the initial enrollment. All students in the 2015 cohort entered high school in the 2011-2012 school year, thus:
  - 9th grade arrival: Initial enrollment 2011-2012
  - 10th grade arrival: Initial enrollment 2012-2013
  - 11th grade arrival: Initial enrollment 2013-2014
  - 12th grade arrival: Initial enrollment 2014-2015
  - 5th year: Initial enrollment: 2015-2016
- Students with credit deficiency may not have earned enough credits to academically be considered at this grade level, but it is the grade level that matches the student's grade for an on-time 4-year graduation.
- **Cohort** Refers to all students that state identified as being part of the 2015 graduation cohort, that is the students classified as graduates or non-graduates. It doesn't include students classified as transfer-out.
- **Credit Deficiency** refers to a student having less that the expected credits upon initial enrollment at NCA. The actual credits earned are based on the information obtained from the student's incoming transcript. The expected number of credits is based on the year and semester a student arrives at NCA. For example, a student arriving 9th grade, 2nd semester would be expected to have already earned 2.5 credits, while a student arriving 11th grade, 1st semester would be expected to have earned 11 credits.

<u>2015 Non-Graduates: Credit Deficiency Status and Arrival Grade Upon Enrollment at NCA</u>:

- 81.4% of credit deficient 2015 non-graduates arrived at NCA in their 11th or 12th grade year (127 students):
    - 1.9% (3) arrived in 9th grade
    - 16.7% (26) arrived in 10th grade
    - 35.3% (55) arrived in 11th grade
    - 46.2% (72) arrived in 12th grade

- 21.2% of the 2015 non-graduates arrived in their 11th or 12th grade year at least one semester or more behind (>= 2.5 credits).
    - 87.9% of those students were economically disadvantaged students.

- 80.8% of credit deficient 2015 non-graduates arrived one semester or more credit deficient (126).
    - 19.2% arrived a few credits behind (< 2.5);
    - 25.6% arrived one semester behind (>= 2.5, <5); and
    - 55.1% arrived one year behind (>=5).

<u>2015 Credit Deficient Non-Graduates: Prior School District</u>:

- Clark County, 53.8%
- Washoe County, 14.1%
- Nevada Public School Districts (other than Clark and Washoe Counties), 9.6%
- Charter Schools, 7.1%
- Out of State, 11.5%
- Other (Home, Private, Unknown), 3.8%

Refer to the Google sheet to identify the expected raw numbers of the next two validations.
- Raw numbers entering credit deficient for all Nevada school districts, as well as "Home School", "Out of State", "Private" and "Unknown".
    - (Carson, Charter, Churchill, Clark, Douglas, Elko, Home School, Humboldt, Lyon, Nye, Out of State, Pershing, Private, Unknown and Washoe).

- The raw numbers of students in each of the school district categories above, broken out into severity of credit deficiency:
    - Number of students arriving slightly credit deficient (less than 2.5 credits behind),
    - Number of students arriving at least one semester behind, but less than a year behind (at least 2.5 credits behind, but less than 5 credits behind), and
    - Number of students arriving at least one year behind (5 or more credits).

Categorization of Cohorts	2015 Cohort	2016 Cohort
Advanced Diploma in 4 or less years	4	3
Standard Diploma in 4 or less years	115	173
Adjusted Diploma in 4 years	3	3
Diploma in 5th year For 2016 includes those on-target to graduate at end of year	21	28
Diploma in 6th year Still enrolled students may end up adding to this total	1	NA
Still enrolled at NCA For 2016 cohort doesn't include those on-target to graduate at end of year	3	7
Post-Secondary Enrollment without record of formal high school completion, could include adult education and/or HSE completers	24	13
Withdrew to adult education	19	22
HSE completers with 5 years Doesn't include students enrolling in adult education	18	25
Other non-graduates/drop-outs	143	171

Documentation Regarding NCA Analysis File

This document provides documentation about the file "nca 2014-15 graduate cohort data file 2017-05-12.xlsx" which reflects the final data for students from the 2015 NCA graduation class. This file has the same core information as the 2016 cohort file, but is missing much of the auxiliary information. In addition, the file only contains information about the cohort members itself (i.e. the transfer-out students are not included).

Summary of Tabs
- Summary – Contains the summary information of the various ways to examine the data based on the latest data (early May, 2017)
- EverFRL – Contains summary information on some of the analysis done for economically disadvantaged students are students that are classified by the state as "Ever FRL" meaning the student was reported as qualifying for free and reduced lunch at least one year during high school. Some of the data statements being validated are related to this sheet.
- 5th year break down v2 – the most recent breakdown of the results of the 4-year cohort students that re-enrolled for a 5th year
- 5th year break down – an earlier, and less detailed breakdown
- Cohort Data – Contains the primary information about each student in the cohort from the various data sources based on the latest data (early May, 2017)
- New 5th year students – Contains information about students that are enrolled in the 2016-17 school year that would potentially be part of the 5th year cohort, but weren't part of the 4th year cohort. Lines 2-15 reflect 14 students that were brand new to NCA (i.e. first enrollment was during student's 5th year of high school) and lines 17-20 reflect 4 students that had previously been enrolled at NCA and had transferred-out and removed from the cohort, but returned to NCA during the 2016-17 school year for a 5th year.
- HSE passed students – information about some students from the 2016 cohort that are known to have passed a High School Equivalency (HSE) exam. This list isn't necessarily complete.
- Summary v2 – Contains the summary information of the various ways to examine the data based on the latest data (early May, 2017)
- Demographic – Not relevant for this analysis, used for a different analysis
- Combined Sheet v2 – Contains all of the various data fields, including calculated data fields from the various data sources based on the latest data (early May, 2017)
- Clearinghouse v2 - the latest data from the National Student Clearinghouse regarding students from NCA enrolling in postsecondary institutions. This information is used to identify which non-graduates ended up enrolling in college
- Clearinghouse - an older version of the National Student Clearinghouse data

Summary of Cohort Data Sheet
- Columns A – I came from the state data file. The original file I was given was just an excerpt of the official state data file.
- Columns J – S provide enrollment and withdrawal data for 8th grade through 12 grade from

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District	Total	Slightly	One Sem	One Year
Charter	11	2	2	7
Churchill	1	0	0	1
Clark	84	13	25	46
Elko	2	1	0	1
Home School	3	1	1	1
Humboldt	6	3	0	3
Lyon	3	0	1	2
Nye	3	1	2	0
Out of State	18	5	4	9
Private	1	0	0	1
Unknown	2	0	1	1
Washoe	22	4	4	14
Total	156	30	40	86

Data Validation Report
NEVADA CONNECTIONS ACADEMY
2016 DATA

Produced for Nevada Connections Academy in response to the State Public Charter School Authority (SPCSA), conducted by Tiberio Garza, PhD.

University of Nevada Las Vegas
Center for Research, Evaluation and Assessment (CREA)

Introduction

Purpose

The purpose of conducting this data validation study is to verify 2016 data reported by Nevada Connections Academy (NCA). In this validation study, NCA defines six terms with one term further defined into three categories, provides four graduation rate calculations, and statements related to credit deficiency, 5th year students, average length of enrollment, and students arriving in 11th or 12th grade. All statements made by NCA were critically assessed for validity, correctness, and connectedness to the data and the previous data validation study (i.e., *Data Validation Report: 2016 Graduation Rate Analysis*). For this study, the Center of Research, Evaluation and Assessment (CREA) has assigned Tiberio Garza, Ph.D., as the evaluator to critically assess and examine inferences made by NCA to ensure what is reported to the State Public Charter School Authority (SPCSA) as undergone review and represents valid and reliable information.

Policy Compliance

The evaluator is a UNLV faculty-affiliate of the College of Education's CREA. It is the policy of CREA to be impartial and merely report the verification of findings free from bias and influence from others. When conducting data validation as a third-party entity, strict adherence is taken to ensure credibility, reliability, and trustworthiness in

- An excel file with 2016 cohort data

- A word document with 2016 statements and calculations to be validated

- A word document serving as a legend to the 2016 cohort data and methodology

- A 2016 school district data file pertaining to credit deficient categories

Objectives

The objectives were to verify 2016 statements and graduation rates made by NCA concerning their 2016 cohort data. Two objectives served as the focus of verification for this validation study. First, data was examined and descriptive information was assessed that attested to the process NCA conducted in converting raw data to organized data. Second, NCA statements were assessed for how valid they were in relation to NCA data and previous reporting/information about the data. To verify data-driven statements made by NCA, an evaluation of NCA's statements and calculations for the SPCSA will undergo the process of validation and Dr. Garza will be assigned to ensuring all the necessary and sufficient data is critically appraised to inform SPCSA decision-making. Calculation(s) defined in this study refer graduation rates, while data-driven statements refer to statements made by NCA pertaining to numerical representation.

calculations and two choices for verification. For example, Background Information could be either Accepted or Not Accepted, since the evaluation is rooted in values and their characteristics as compared to a calculation. For reaching consensus between NCA and the evaluator related to calculations, Reached meant equal calculated values were found between NCA and the evaluator. The alternative to not getting the same value was Not Reached, which represented a major discrepancy between NCA and the evaluator's calculation.

Across the data and data files there was no indication of values outside their normal parameters. In fact, the effort to make everything clear and transparent to the evaluator aided in examining all aspects of information (i.e., data and data-related files) for correctness. Additionally, variables or data values that were assessed for abnormality and possible error from data entry did not show any indication that such inconsistencies were occurring in the data. No presence of misrepresentation or manipulation of data or information was identified. Thus, this validation study acknowledges data provided from NCA is acceptable and can be used for inferring data-driven statements and calculations free of common data concerns that can influence what is said from the data.

Graduation rates calculated by NCA were four in number with two already verified in a previous report (i.e., *Data Validation Report: 2016 Graduation Rate Analysis*). The two graduation rates were found to match calculations from the evaluator (i.e., Dr. Tiberio Garza). The two new graduation rates were based on estimation which included the Nevada state law. Other calculations were more straight forward in examining and verifying numerical values for credit deficiency, enrollment, and students arriving during 11th and 12th grade (as depicted in Table 1).

NCA data-driven statements:

- 2016 Graduation rate calculations
  - "2016 grad rate applying Nevada state law (46.5%)"
  - "2016 grad rate applying Nevada state law + not classifying 5th year grads (or students on track to graduate no more than 2 semesters late) as non-graduates (50.1%)"
  - "2016 federal ACGR + not classifying students enrolling one semester or more behind as non-graduates (62.2%)" [Verified in previous data validation report]
  - "2016 grad rate for students enrolled at NCA for all four years of high school (87.5%)" [Verified in previous data validation report]
- "2016 Cohort: Credit deficiency status upon enrollment at NCA & economically disadvantaged category composition:"
  - "50.3% of students in the 2016 cohort enrolled on track at NCA"
    - "Of those students in the 2016 cohort enrolling on track, 51.6% were economically disadvantaged students."
  - "49.7% of students in the 2016 cohort were credit deficient when they enrolled at NCA."
    - "Of those students in the 2016 cohort enrolling credit deficient, 70.6% were economically disadvantaged students."
      - "Of those students arriving slightly credit deficient (less than 2.5 credits behind), 63% were economically disadvantaged students."
      - "Of those students arriving at least one semester behind, but less than a year behind (at least 2.5 credits behind, but less than 5 credits behind), 67.7% were economically disadvantaged students."
      - "Of those students arriving at least one year behind (5 or more credits), 76.5% were economically disadvantaged students."
  - "61.05% of the entire cohort were economically disadvantaged students."
- "2016 Non-graduates: Credit deficiency status upon enrollment at NCA:"
  - "73.7% of the non-graduates in the 2016 cohort enrolled at NCA credit deficient."
- "2016 Non-graduates: Credit deficiency status and arrival grade upon enrollment at NCA:"
  - "84% of credit deficient 2016 non-graduates arrived at NCA in their 11th or 12th grade year (163 students):"
    - "2.6% (5) arrived in 9th grade"

- "Of all students in the 2016 cohort arriving in 11th grade, at least one year behind, 79.3% were economically disadvantaged students."
- "Of all students in the 2016 cohort arriving in 12th grade, at least one semester behind, but less than one year behind, 65% were economically disadvantaged students."
- "Of all students in the 2016 cohort arriving in 12th grade, at least one year behind, 73.7% were economically disadvantaged students."

The inferences stated here are within the realm of what could be said given the data and definitions. Additionally, the level of inference or inferring was kept at a descriptive-level by NCA. In other words, NCA did not speculate or causally infer from the data – the statements had a factual depiction and did not deviate from that account. By staying in a factual depiction of the data the risk of over-speculation is not present. Inferences stated here have a detective-type of description and merely convey information for the reader. Additionally, data-driven statements and calculations were not observed to detach from the data. In general, there is consistency across data values, data files, graduation rates, calculations, and inferences made to warrant NCA findings as valid, reliable, and trustworthy.

CREA assigned Dr. Tiberio Garza to assess and examine NCA's 2016 data. Dr. Garza assessed NCA's 2016 data for validity and possible errors related to data entry or misrepresentation. After examining all NCA's data files and calculations, the conclusion is NCA's inferences are based on valid and reliable data, which warrants attention to inferences proclaimed in this document.

2016 Data to Be Validated

<u>Overview</u>
The following represent the various data related to the NCA 2016 graduation cohort to be validated. While previously the validation work was related primarily to validating various approaches to graduation calculations, the majority of the work here is related to validating descriptive information about the graduation cohort based on factors such as if the student was credit deficient upon enrollment at NCA, if the student was economically disadvantaged, what grade level the student was when the student enrolled at NCA, the prior school district of the student, and the results of the students from the cohort that re-enrolled for a 5th year.

All of the data for validation is contained in the file "2016 cohort analysis file 2017-05-10.xlsx" which is approximately 65MB in size. It is in Excel format in the Google directory. There is a Google doc in this directory as well that provides detailed documentation about that file. There is also a Google sheet that will provide a reference point for some of the validation related to the sending district.

<u>Definitions</u>
- **Arrival Year** refers to the appropriate grade level based on the date of enrollment when the student first enrolls at NCA. Some students will enroll, withdraw, and then re-enroll, but the arrival year is based on the initial enrollment. All students in the 2016 cohort entered high school in the 2012-2013 school year, thus:
  - 9th grade arrival: Initial enrollment 2012-2013
  - 10th grade arrival: Initial enrollment 2013-2014
  - 11th grade arrival: Initial enrollment 2014-2015
  - 12th grade arrival: Initial enrollment 2015-2016
  - 5th year: Initial enrollment: 2016-2017
- Students with credit deficiency may not have earned enough credits to academically be considered at this grade level, but it is the grade level that matches the student's grade for an on-time 4-year graduation.
- **Cohort** Refers to all students that state identified as being part of the 2016 graduation cohort, that is the students classified as graduates or non-graduates. It doesn't include students classified as transfer-out.
- **Credit Deficiency** refers to a student having less that the expected credits upon initial enrollment at NCA. The actual credits earned are based on the information obtained from the student's incoming transcript. The expected number of credits is based on the year and semester a student arrives at NCA. For example, a student arriving 9th grade, 2nd semester would be expected to have already earned 2.5 credits, while a student arriving 11th grade, 1st semester would be expected to have earned 11 credits.
- **Credit Deficient Categories**: We have categorized credit deficient students into three categories:
  - **Slightly**: The student is less than 2.5 credits deficient

<u>2016 Non-Graduates: Credit Deficiency Status and Arrival Grade Upon Enrollment at NCA</u>:

- 84% of credit deficient 2016 non-graduates arrived at NCA in their 11th or 12th grade year (163 students):
    - 2.6% (5) arrived in 9th grade
    - 13.4% (26) arrived in 10th grade
    - 46.9% (91) arrived in 11th grade
    - 37.1% (72) arrived in 12th grade

- 52% of the 2016 non-graduates arrived in their 11th or 12th grade year at least one semester or more behind (>= 2.5 credits).
    - Approximately 3 out of 4 of those students were economically disadvantaged students.

- 80.4% of credit deficient 2016 non-graduates arrived one semester or more credit deficient (156).
    - 19.6% arrived a few credits behind (< 2.5);
    - 27.8% arrived one semester behind (>= 2.5, <5); and
    - 52.6% arrived one year behind (>=5).

<u>2016 Credit Deficient Non-Graduates: Prior School District</u>:

- Clark County, 47.9%
- Washoe County, 13.9%
- Nevada Public School Districts (other than Clark and Washoe Counties), 10.3%
- Charter Schools, 7.7%
- Out of State, 11.3%
- Other (Home, Private, Unknown), 8.8%

Refer to the Google sheet to identify the expected raw numbers of the next two validations.
- Raw numbers entering credit deficient for all Nevada school districts, as well as "Home School", "Out of State", "Private" and "Unknown".
    - (Carson, Charter, Churchill, Clark, Douglas, Elko, Home School, Humboldt, Lyon, Nye, Out of State, Pershing, Private, Unknown and Washoe).

- The raw numbers of students in each of the school district categories above, broken out into severity of credit deficiency:
    - Number of students arriving slightly credit deficient (less than 2.5 credits behind),
    - Number of students arriving at least one semester behind, but less than a year behind (at least 2.5 credits behind, but less than 5 credits behind), and
    - Number of students arriving at least one year behind (5 or more credits).

Documentation Regarding NCA Analysis File

This document provides documentation about the file "2016 cohort analysis file 2017-05-10.xlsx" which reflects the final data for students from the 2016 NCA graduation class. This file has evolved over time as new information has become available so not all tabs are necessarily still relevant. There have been a fair amount of changes since the previous version of the file that was provided for data validation, which includes the removal of some of the older tabs..

Summary of Tabs
- New 5th year students – Contains information about students that are enrolled in the 2016-17 school year that would potentially be part of the 5th year cohort, but weren't part of the 4th year cohort. Lines 2-15 reflect 14 students that were brand new to NCA (i.e. first enrollment was during student's 5th year of high school) and lines 17-20 reflect 4 students that had previously been enrolled at NCA and had transferred-out and removed from the cohort, but returned to NCA during the 2016-17 school year for a 5th year.
- HSE passed students – information about some students from the 2016 cohort that are known to have passed a High School Equivalency (HSE) exam. This list isn't necessarily complete.
- Summary v2 – Contains the summary information of the various ways to examine the data based on the latest data (early May, 2017)
- 5th year break down v2 – the most recent breakdown of the results of the 4-year cohort students that re-enrolled for a 5th year
- 5th year break down – an earlier, and less detailed breakdown
- Demographic – Not relevant for this analysis, used for a different analysis
- EFRL – Contains summary information on some of the analysis done for economically disadvantaged students are students that are classified by the state as "Ever FRL" meaning the student was reported as qualifying for free and reduced lunch at least one year during high school. Some of the data statements being validated are related to this sheet.
- Combined Sheet v2 – Contains all of the various data fields, including calculated data fields from the various data sources based on the latest data (early May, 2017)
- District Lookup – a sheet that helps convert school name to a district name
- Description of cohort – capturing data from an analysis currently in progress to obtain a more detailed description of the cohort based on the semester of arrival and withdrawal of students. The goal is to get a better understanding of the progress students make during the time they are enrolled at school. This is not complete and no data validation is being requested for this sheet.
- NSC data of cohort members – work under progress related to understanding more information about non-graduates that end up enrolling in a post-secondary institution
- Enter off cohort and withdrew – breaks down into various sub-categories the length of enrollment in days for students that entered NCA credit deficient and withdrew without graduating and prior to end of Senior year

The key raw data file is the Combined Sheet v2 which takes information from the final state file (provided to be from NCA on 3/10/17), data from Connexus (both enrollment and credit accumulation

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- Column U for students that has an ENDING STATUS CODE of W3(d)i (i.e. GED) has a value of yes if the student was successful and no if they weren't successful. In addition, for students that had another non-graduate withdrawal code other than W3(d)i or W3(d)ii that completed an HSE have a value of "not W3d(i) but yes" to indicate these students also completed an HSE. This column is used in correctly calculating the graduation rates related to the Nevada state law.
- Column V has more details about the status of select students attempting to pass the HSE.
- Column X (COMPLETION TYPE CODE) indicates the type of completer for the student. In most cases, these are different codes for graduates, but a code of B21 indicates the students completed with an adjusted diploma which the state classifies as a non-graduate.
- Column AC (Cohort Completion Type) indicates if the student was classified as a Graduate, Non Graduate, or Transfer Out)
- Columns BE – BT provide detailed enrollment data during high school. For each year there are 4 columns although if the student wasn't enrolled for that year, the columns will be blank
  - First Enrollment Date – the date the student first enrolled that year
  - Final Withdrawal Date – the date the student finally withdrew that year. If the student completed that year, this will show as the last date of the school year
  - Final Withdrawal Category – the type of withdrawal. This field may be blank of the student simply completed the year and is expected to return the following year
  - Days Enrolled – the calendar days the student was enrolled that year
- Columns BU – BW are related to a 5th year of enrollment. When I was doing this analysis originally in January, we pulled information from Connexus as of 1/24/2017 and decided that even if a student had enrolled for a 5th year but had already withdrawn as of 1/24/17, we would not include this a student trying to graduate in 5 years. Later we updated this data several times, most recently on 4/20/17. We then made a decision when making calculations related to 5th year enrollments it would be based on information on the actual or likely graduation during the 5th year (see columns CY and CZ) as opposed to whether the student enrolled for a 5th year.
- Columns BX (Total Days Enrolled High School) and BY (Unique Years Attended) are straight calculations and you can see the formulas. It doesn't count any enrollment during a 5th year.
- Column BZ is mainly a calculated field where is a student had attended less than or equal to 142 calendar days (half a school year) then the student qualified as ESSA Partial Attendance. There were two exceptions to this calculation:
  - The student was a Transfer Out student. Any student that classified as Transfer Out is already removed from the cohort for graduation calculation purposes so doesn't qualify for ESSA partial attendance regardless of the length of enrollment
  - The student was still enrolled at the end of the Senior Year. One of the requirements to qualify for ESSA partial attendance is to withdraw. Thus even if a student has been enrolled for a half of a year or less, but didn't withdraw, the student doesn't qualify
- Columns CI – CX show the number of high school credits earner by year, either external to NCA or while enrolled at NCA. Note that it is possible to earn credits towards high school prior to the 9th grade year thus there are years prior to 2012-2013 included. If a student enrolls during the 2nd semester of a year, then those credits in the external column are assumed to have been from the school the student attended during the first semester of that year.

Method Used for Completing Summary v2

The basic method for completing summary 2 was to go the Combined Sheet v2 and selecting the appropriate filters and noting the count and then filling this value in on Summary 2. For example to fill the number of graduates for Official State Rate, I filtered on the value of "Graduate" on Column AC. Of course more counts required multiple filters. For example to indicate how many students had withdrawn for an adult education program I first filtered on the value of "Non Graduates" in Column AC and then filtered for a value of "W3(d)ii" in Column T.

A similar methodology was used for calculating the number of non-graduates when excluding certain characteristics. For example to determine how many non-graduates there would be if adult education students were not included in the cohort (one of the items in state law), I first filtered for the value of "Non Graduates" in Column AC and then in Column T filter for all values **except** "W3(d)ii" which shows 241 non-graduates.

Note for GED students slightly different data has to be used because the state law references students that successfully complete a GED program, not just those that enter a program. Previously we didn't have data about GED program completion, so we just counted all students that entered a GED program. Now with this completion data, if I want to calculate the number of non-graduates if we exclude students that were successful in the GED program, I first filter on the value of "Non Graduates" in Column AC and then in column U filter for all values **except** "yes" and "not W3d(i)" which shows 238 non-graduates.

The approach of filtering on multiple columns allows for counting the number of non-graduates when excluding multiple criteria without double counting students that might meet more than one of the exclusion criteria. For example, in counting the number of non-graduates when excluding those students that enrolled in a GED program, Adult Education Program, or met ESSA partial attendance requirements (row 16 in Summary v2), I used the following approach:
- Filter for the value of "Non-Graduates" in Column AC (263 students)
- Excluded GED students by filtering for all values except "yes" and "not W3d(i)" in Column U (238 students)
- Excluded Adult Education by filtering for all values except "W3(d)ii" in Column T (216 students)
- Finally filtered column BZ, removing students with a value of "yes" (165 students)

This approach was used any time I needed to count the number of non-graduates when multiple criteria were to be excluded.

There is a slight difference in process in calculating the graduation rate "according to Nevada State law" or any rate this is based on the Nevada state law plus other characteristics. The definition of the Nevada state law calculation is to first convert the adjusted diploma students to graduates. Since there are 3 students with adjusted diplomas the number of graduates goes from 176 to 179. Then to get the correct number of non-graduates, you have to first exclude these adjusted diplomas (deselect the value of "B21" in column T), and then exclude adult education (deselect the value of "W3(d)ii" in column T,

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District	Total	Slightly	One Sem	One Year
Carson	1	1	0	0
Charter	15	2	3	10
Churchill	3	0	2	1
Clark	93	17	27	49
Douglas	1	0	0	1
Elko	2	0	0	2
Home School	7	2	2	3
Humboldt	2	1	0	1
Lyon	5	2	1	2
Nye	5	1	1	3
Out of State	22	2	6	14
Pershing	1	0	0	1
Private	3	1	1	1
Unknown	7	2	2	3
Washoe	27	7	9	11
Total	194	38	54	102