

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.

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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

conclusions made by those working under CREA's supervision. This service provided from CREA becomes essential when governing bodies such as the SPCSA rely on the validity of information presented and conclusions made by educational agencies under the SPCSA. Thus, CREA prepares this document for the SPCSA in collaboration with NCA. It is expected that NCA be transparent and timely in fulfilling all request for data, information, and that all NCA personnel are accessible to the evaluator for further questioning pertaining to data validation. These conditions placed upon NCA are necessary for providing the SPCSA with reliable, valid, and trustworthy information for their decision-making process.

Scope of Validation

The scope of the validation study was to verify 2016 statements and calculations made by NCA. The request for data involved access to raw data files, organized data files, and helper files (i.e., documents describing variables and processes taken by NCA in producing calculations and statements). Helper files also described the meaning of data columns (or variables) present in data files and served as a reference (or legend) to foster ease in navigating through the 2016 data files. The presence of a reference document of the data and information demonstrates transparency.

A systematic approach was taken to assess 2016 data, which included checking column by column for inconsistencies, entry errors, abnormal values, or missing values that may influence results. NCA provided the following documents:

- 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.

Critical Assessment

Variables and Calculations under Validation

Statements (i.e., data-driven) and calculations going before the SPCSA are first assessed by status of variables in the data files. In the table that follows (Table 1), Background information refers to the list of data tabs and columns to assess, which entailed the examination of 12 excel tabs of data and the specific examination of 105 data columns or variables. Overall data was first assessed for duplication, missingness, or usual entries.

After data columns were systematically assessed for common data issues (see Table 1 below) the data-driven statements and calculations were assessed. The validation process continued by examining the precision and accuracy of graduation rates and data-driven statements. Each graduation rate in Table 1 was assessed for a match with the evaluator's calculation. Two graduation rates were already examined before in a previous report and only needed to go under verification. Data-driven statement were examined in the same process (i.e., observing the same results from evaluator to NCA results). Statements were further appraised by inference that can be made concerning the data.

Summary results are illustrated in the table that follows (Table 1). The table provides the conclusion in comparing NCA's results to evaluator results, which are located in the Consensus column of Table 1. For the Consensus column there are two choices for

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.

Table 1

Description–2016 Data¹	Error-type examined	Results	Consensus
Background Information* (915 students)	Duplication; Missingness; Abnormal or usual entries;	Threshold limits upheld; Missing values were minimal	Accepted
Graduation rate by Nevada state law	Calculation; Consistency with other calculations	46.5% graduation rate	Reached
Graduation rate by Nevada state law + not classifying 5th year grads as non- graduates	Calculation; Consistency with other calculations	50.1% graduation rate	Reached
Graduation rate by federal ACGR + not classifying students enrolling one semester or more behind as non- graduates	Verification from previous data validation report	62.2% graduation rate	Accepted
Graduation rate by students enrolled at NCA for all four years of high school	Verification from previous data validation report	87.5% 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	73.7% 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. ¹Definitions 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.

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).

Thus, no misrepresentation of data, graduation rates, or calculations were identified while examining NCA's data. The methodology utilized in concluding study findings was based on inter-rater reliability or the matching of NCA's results with my own (CREA's assigned evaluator – Tiberio Garza).

Inferences Evaluated

Eight data-driven statements (or inferences) with several sub-statements are shown below as the focus of inference evaluation. The stated inferences are from NCA and are statements that were examined and assessed for validity. The correctness of these data-driven statements was assessed in relation to NCA data, both in raw and organized form. Inferences (i.e., data-driven statements inferred from the data) were examined for what was being claimed and if that claim was derivable from the data. In other words, NCA inferences were examined to ensure they were not over-stating something not present in the data. Thus, inferences made by NCA were critically appraised if such statements could warrant the descriptive information conveyed.

However, inferences made by NCA are based on defined terms, which are Arrival Years, Cohort, Credit Deficiency, Credit Deficient Categories (Slightly, One semester, One year), Economically Disadvantaged, and Prior School District/Sending District. These definitions as depicted by NCA can be found in Appendix. Thus, given these definitions inferences were appraised for staying within what could be said depended on the data.

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”

- “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 ($\geq 2.5, < 5$); and”
 - “52.6% arrived one year behind (≥ 5).”
- “2016 Credit deficient non-graduates: Prior school district”
 - “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%”
- “2016 Non-graduates who enrolled at NCA for a 5th year”
 - “59.3% were successful in graduating from NCA or continuing their education at the school.”
 - “47.5% of these students graduated from NCA or are on track to graduate this spring, not more than 2 semesters late.”
 - “11.9% are still enrolled at the school (as of April 2017). Note: This group is separate from those enrolled and on track to graduate this spring.”
- “2016 Cohort: Average length of enrollment at NCA”
 - “The average length of enrollment for students in the 2016 cohort is slightly less than 1.5 years.”
- “2016 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 2016 cohort arriving in their 11th or 12th grade year at least one semester or more behind, 72.9% of [*sic*] were economically disadvantaged students.”
 - “Of all students in the 2016 cohort arriving in 11th grade, at least one semester behind, but less than one year behind, 64.3% were economically disadvantaged students.”

- “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.

Conclusions

Concerns

After reviewing, all provided 2016 data from NCA conveyed interconnectedness between data values, calculations computed, and data-driven statements proclaimed. Examining the relational aspect across variables, calculations, and inferences was used to identify inconsistencies in data. However, data and data files were acceptable and calculations were correctly replicated by the evaluator, which alluded to sound data collection/entry and computation – this is a good outcome. As for inferences made, they did not over-state and maintained their connection to data.

In producing this document, NCA did comply with CREA’s evaluation in being transparent and providing accessibility to NCA personnel in asking follow-up questions. Follow-up questions were asked for further clarification of the process NCA undertook to provide all documentation, data files, calculations, and inferences proclaimed. No concerns were identified through interactions with NCA in answering questions for this study nor were concerns found in replicating NCA results.

Takeaways

NCA provided data with very detailed documentation attesting to their process in producing calculations and how the data was put together. This action to make their process and calculations transparent and clear is in line with allowing replicability, which are best practices for allowing others to follow what was done.

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.

Appendix

Definitions

Arrival Year**	<p>“refers to the appropriate grade level based on the data 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:</p> <p>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”</p>
Cohort	<p>“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.”</p>
Credit Deficiency	<p>“refers to a student having less than 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.”</p>
Credit Deficient Categories	<p>“We have categorized credit deficient students into three categories:</p> <p>Slightly: The student is less than 2.5 credits deficient One Semester: The student is at least one semester credit deficient, but not a full year (credits deficient is ≥ 2.5, but < 5) One Year: The student is at least one year credit deficient (credits deficient is ≥ 5)”</p>
Economically disadvantaged	<p>“means that the student was given the characteristics of Ever FRL by the state which means the student was reported as qualifying for the federal free and reduced lunch program at least one year during high school”</p>
Prior School District/Sending District	<p>“refers to the district where the student was enrolled prior to enrolling at NCA”</p>

Note. **=“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.”