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A deeper look into BEacon Academy of NEvada: examining the graduation rate

There are several challenges threating the validity of performance measures of Beacon Academy of Nevada. Higher levels of credit deficiency, transfers, and prior enrollments, alter the accuracy of the graduation rate in correctly interpreting Beacon Academy of Nevada as fostering academic achievement among at-risk students. Coupled with inadequate comparison school measures, Beacon Academy of Nevada is incorrectly described. In this report, the challenges faced by Beacon Academy are described in order to aid the reader of how well Beacon Academy is working to serve at-risk students despite challenging conditions.

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A data-driven approach was taken in order to inform BANV administration of the current school performance status related to graduation rates. By looking at the BANV graduation rate, data was then sought after in providing more context or related background information in explaining the graduation rate. The graduation rate equation, was used as the conceptual starting point in investigating negative influences or risk factors. It was believed that credit deficiency, large transfer out percentages, and the transiency rate contributed negatively toward graduation rates. Additionally, there was interest in gathering data that described where students came from and their pervious school enrollments.

Data was collected during March 2016 and was presented first for its relevance in illustrating BANV’s overall performance. Both external and internal data sources were assessed to better validate BANV’s data-driven decision making. The external data source relied on data from the Data Interaction for Nevada Report Card website (i.e., Nevada Report Card information). The internal data source consisted of information provided through the learning management system of BANV. The assessing of both external and internal data sources also played a role in general data validation. This approach for general data validation for BANV was to ensure data integrity, verification, and accuracy (see Appendix).

The summary of results indicate the following about Beacon Academy of Nevada:

* The student population utilizing educational services resides in Clark County
* The graduation rate is an unreliable estimate of BANV’s overall performance
* 11th and 12th grade student records show BANV’s student population have many prior enrollments with other schools
* There is consistent high transfer outs and transiency rate

By examining data related to graduation rates, the intent was to inform policy changes that would accurately illustrate BANV’s overall performance in meeting the educational needs of students.

# **Findings**

The following data sources were used to assess the overall performance of Beacon Academy of Nevada (BANV): Data Interaction for the Nevada Report Card, data accessible through BANV’s learning management system during March 2016. Six measures are described in response to BANV’s overall performance with a focus on the graduation rate. The proposed measures relate to cohort graduation rates and involve the examination of credit deficiency, transiency rate and transfer out percentages. Additional data includes prior school enrollments in order to depict a holistic view of additional contributing factors to the graduation rate. These measures are believed to inform data-driven decisions related to BANV’s proactive approach of making policy changes in order to improve overall performance despite challenging conditions.

### Graduation Rate

BANV’s graduation rate is negatively affected (or risk factors) by the following three variables: credit deficiency, transfer out, and transiency rate. Although the defined graduation rate is a robust measure (see Equation 1), the risk factors affecting BANV are out weighing the positive school affect (or protective factors) and exhibiting threats to the validity of the graduation rate to accurately describe BANV’s overall performance. As a result, the graduation rate has become a poor measure of BANV’s overall school performance.

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| Number of cohort members who earned a regular high school diploma by the end of the 2011-12 school year |
| Number of first-time 9th graders in fall 2008 (starting cohort) plus students who transferred in, minus students who transferred out, emigrated, or died during school years 2008-09, 2009-10, 2010-11, and 2011-12 |

*Equation 1*

BANV has adopted a course credit system which splits the traditional semester into two allowing for students to focus on a few courses per half semester (i.e., 3 courses) and equating both half semesters into the same credit load in the traditional semester (i.e., 6 courses). Consider that at BANV, 10th grade students have the highest amount of credit deficiency (i.e., 25% as observed in Table 4 accountability year 2013-14) and 10th grade student as observed during March 2016 were 79% identified as having prior school enrollments (i.e., as observed in Figure 3, described later), which could suggest reasons for higher transfer outs at BANV; especially, if students decided to return to their original high schools after receiving vital educational support from BANV in aiding them back on their educational track. As a result, further investigation of graduate rate influences becomes vital in observing data patterns on how the graduation rate is negatively influenced by the actions of students.

Comparing graduate rates between BANV and the State Public Charter School Authority (SPCSA), in academic year 2014-15 BANV, had a higher graduation rate (i.e., Table 1). Although BANV’s graduation rate dropped by 3.9% (during the accountability year, which is one year behind), it is still believed better than the SPCSA’s graduation rate. From 2011 to 2016, BANV has generally increased its graduation rate dramatically. For instance, between 2012-13 and 2013-14 the graduation rate rose by 23.3% and between accountability years 2013-14 and 2014-15 by 18.9%. The highest gain in graduation rates by the SPCSA occurred between 2011-12 and 2012-13 with a gain of 11.2%. Although, the State has a 70.77 graduation rate there are challenges and unique characteristics concerning BANV that make it un-valid in State school graduation rate comparisons (i.e., BANV, an online high school for at-risk students).

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| Table 1*Graduation Rates delayed by one year* |
| Acc. Year | Beacon Academy of Nevada (%) | State Public Charter School Authority | Nevada (%) |
| 2011-12 | 301 (16.38) | 35.04% |  40,718 (61.96) |
| 2012-13 | 403 (14.35) | 46.28% |  40,645 (63.08) |
| 2013-14 | 555 (37.61) | 54.01% | 42,612 (70.65) |
| 2014-15 | 523 (56.52) | 46.38% | 43,169 (70.00) |
| 2015-16 | 423 (52.63) | \* | 41,640 (70.77) |
| *Note*. Acc. means Accountability. \* means data was not available. The data source is Data Interaction for Nevada Report Card. |

For 2014-2015, BANV continues to have a high transfer (64.1%; see Table 2) with 271 transfer outs of 423 students. Such results imply that as BANV retains students in an effort to reduce the amount of transfer out, there is a decrease in graduation rate (e.g., 2013-14 graduation rate of 56.52 compared to the 2014-15 graduation rate of 52.63). However, transfer out is a measure of those students who have decided to leave during the 9-12 cohort graduation measure, which is based on student choice. Certainly, BANV wants to keep its students, but ultimately it’s a student’s choice to stay. The choice of students to leave BANV is riddled with many factors, yet the more likely reason for leaving BANV seems to point to the student receiving support for their educational needs and then returning to their prior school enrollment; since, the majority of students have several prior enrollments with other schools before coming to BANV (e.g., see Figure 1 and 2, which are described in the School Pipelines section).

Compared to the State, BANV has experience far greater challenge with transfer out percentage amounts. The same peak observed for BANV in 2012-13 also occurred for the State and resulted in a 23.5% transfer. Although, the decline in transfer stayed the same for BANV the following year (2013-14) the State experienced a greater decline from 23.5% to 20.8% and ultimately in 2014-15 has observed an 18.4% transfer. For BANV, the transfer continues to be extraordinarily high and has only declined this academic year (2014-15) to 64.1%–still an incredibly high amount, which threatens the validity and accuracy of BANV graduation rates. However, the academic year is not over (i.e., data was collected during March 2016 for this report). Such movement among student transfer outs and transfer ultimately hide BANV’s overall performance and manipulate graduation rates.

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| Table 2*Beacon Academy of Nevada and Nevada Cohort Graduation Rates*  |
| Acc. Year | Total | Graduates | Transfer Outs | Transfer | Graduation Rate | Standard Diploma (%) |
| Beacon Academy of Nevada |
| 2011-12 | 403 | 32 | 180 | 44.7% | 14.35 | 29 (67.4) |
| 2012-13 | 555 | 44 | 438 | 78.9% | 37.61 | 39 (78.0) |
| 2013-14 | 523 | 65 | 408 | 78%  | 56.52 | 59 (85.5) |
| 2014-15 | 423 | 80 | 271 | 64.1% | 52.63 | 68 (85.0) |
| Nevada |
| 2011-12 | 40,645 | 21,931 | 5,876 | 14.5% | 63.08 | 15,346 (62.1) |
| 2012-13 | 42,612 | 23,044 | 9,995 | 23.5% | 70.65 | 16,056 (62.8) |
| 2013-14 | 43,169 | 23,941 | 8,968 | 20.8% | 70 | 16,083 (63.7) |
| 2014-15 | 41,640 | 24,247 | 7,648 | 18.4% | 70.77 | 16,392 (67.6) |
| *Note*. Acc. means Accountability. The data source is Data Interaction for Nevada Report Card. |

Another aspect contributing to the rise of more later-grade students (e.g., 10th through 12 grade) to enroll with BANV in order to make use of BANV’s student centered instruction and services is also witnessed in the transiency rate. In 2014-15 (see Table 3), the transiency rate of 48.9% is approximately 2 times that of the State’s rate of only 26.5%. However, despite efforts by BANV the transiency rate has declined from 69.6% during the 2011-12 academic year to 59.1% from last year (2013-14) and now 48.9% (2014-15). The State has also declined gradually from 27.9% (2011-12) to its current 26.5% (2014-15). There is a clear transiency rate challenge for BANV as opposed to the State’s transiency rate. The high amount of transiency rate at BANV indicates a very transient student population, which can alter meaningful school performance measures (e.g., graduation rates).

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| Table 3*Transiency Rates*  |
| Accountability Year | BANV Transiency Rate | State Transiency Rate | Graduated (%) |
| 2011-12 |  69.6% | 27.9% |  40,718 (61.96) |
| 2012-13 |  54.3% | 27.4% |  40,645 (63.08) |
| 2013-14 |  59.1% | 26.7% | 42,612 (70.65) |
| 2014-15 |  48.9% | 26.5% | 43,169 (70.00) |
| 2015-16 | \* | \* | 41,640 (70.77) |
| *Note*. \* means data was not available. The data source is Data Interaction for Nevada Report Card. |

During the 2013-14 accountability year, the credit deficiency at 10th grade for Beacon Academy of Nevada (25.0%; Table 4) was more than double the State’s at 11.8% (see Table 5, 2013-14 accountability year for 10th grade) and the State Public Charter School’s (12.8%, observed in the Data Interaction for Nevada Report Card source), which indicates entering high school, students already had achievement problems before coming to Beacon Academy of Nevada (BANV). In 11th grade, the credit deficiency at BANV (10.1%, 2013-14; Table 4) is just below the State Public Charter School’s (11.4%) and below the State’s (16.6%; Table 5). However, at grade 12 BANV credit deficiency increases to 17.8% (Accountability year 2013-2014), which was higher than the State Public Charter Schools at 12.6% and just below the State’s at 18.2% (Table 5). Also, the percentage of credit deficiency students has generally increased at BANV. For example, starting from 2011-12 the 12th grade credit deficiency has risen from 6.4%, 7.3% (2012-13) and 17.8% (2013-14) respectively. The same trend is observed at 10th grade. For instance, during 2010-11 there was 9.7% credit deficiency followed by 12.4% (2011-12), 11.2% (2012-13) and 25% during 2013-14.

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| Table 4*Beacon Academy of Nevada Credit Deficient* |
| Acc. Year | 9 (%) | 10 (%) | 11 (%) | 12 (%) | Transiency Rate | Graduated (%) |
| 2010-11 |  20 (11.4) | 18 (9.7) | 14 (9.9)  | 17 (11.5)  |  69.6% |  301 (16.38) |
| 2011-12 | 23 (13.0) | 29 (12.4) | -  | 10 (6.4)  |  54.3% |  403 (14.35) |
| 2012-13 |  20 (11.2) | 27 (11.2)  | 20 (9.4)  | 13 (7.3)  |  59.1% | 555 (37.61) |
| 2013-14 |  - | 22 (25.0)  | 16 (10.1)  | 41 (17.8) |  48.9% | 523 (56.52) |
| 2014-15 | \* | \* | \* | \* | \* | 423 (52.63) |
| *Note*. Acc. means Accountability and - means less than 10. \* means data was not available. The data source is Data Interaction for Nevada Report Card. |

In Table 4, BANV displayed higher levels of credit deficiency among ninth graders (11.4% for accountability year 2010-11) compared to the State (0.6%, See Table 5) in the 2010-11 academic year. With a larger percentage of ninth graders already credit deficient, it is the challenge of BANV instructional support to meet the needs of students already entering with credit deficiencies. As we observe across 9th graders to 10th grade, 2010-11 to 2011-12, credit deficiency rises gradually to 12.4% (2011-12 accountability year for 10th grade) while at the State-level credit deficiencies among 10th grade students dramatically rises to 21.4% (2011-12 accountability year for 10th grade) from 0.6% in 2010-11. BANV’s gradual credit deficiency increased to 12.4% in 2011-12 from 11.4% from 2010-11 (see Table 4) is also in light of an increased student enrollment population.

For instance, in 2011 there were 651 students and 732 students the following year (Nevada Report Card). By 11th grade the cohort of 9th grade students (2010-11 accountability year) reflected 9.4% credit deficiency in 2012-13, which suggested a proactive instructional response in addressing credit deficiency among those students at BANV. In comparison, the State also reflects the same characteristic in responding to credit deficiency and resulting in a 19.2% credit deficiency estimate among those same students (i.e., the 9th grade cohort of students starting from 2010-11 with 0.6% credit deficiency to now 19.2% credit deficiency in 2012-13 in 11th grade). The difference between BANV and the State is in the percentage difference in addressing credit deficiency. For example, from 2011-12 BANV worked closely with those students with credit deficiency (12.4%) and observed a change in credit deficiency of 3% as those students moved into 11th grade (e.g., 9.4% credit deficiency). In the State’s case, the response to the 2011-12 10th grade credit deficiency of 21.4% resulted in a smaller change (2.2%) into 11th grade credit deficiency of 19.2%.

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| Table 5*State of Nevada Credit Deficient* |
| Acc. Year | 9 (%) | 10 (%) | 11 (%) | 12 (%) | Transiency Rate | Graduated (%) |
| 2010-11 | 216 (0.6) | 5,816 (17.4) | 7,939 (24.1) | 6,651 (21.9) | 27.9% |  40,718 (61.96) |
| 2011-12 | 166 (0.5) | 7,148 (21.4) | 7,053 (21.7) | 7,186 (22.5) | 27.4% |  40,645 (63.08) |
| 2012-13 | 242 (0.7) | 4,737 (14.0) | 6,287 (19.2) | 6,631 (21.1) | 26.7% | 42,612 (70.65) |
| 2013-14 | 281 (0.8) | 4,064 (11.8) | 5,521 (16.6) | 5,791 (18.2) | 26.5% | 43,169 (70.00) |
| 2014-15 | \* | \* | \* | \* | \* | 41,640 (70.77) |
| *Note*. Acc. means Accountability. \* means data was not available. The data source is Data Interaction for Nevada Report Card. |

### *Prior Enrollments, March 2016*

Observing the cohort of 9th grade students through 12th grade, BANV does illustrate larger credit deficiencies (17.8% as observed in Table 4 for accountability year 2013-14) across grade levels, but this is in light of more students enrolling into BANV at later grade levels including 12th grade (e.g., see Figure 1). For instance, 2016 data of the 328 students in 12th grade at BANV, only 30 students (or 9.1%) enrolled directly with BANV and had no ties to enrollment with other schools. Students (i.e., in 12 grade) who come from at least one other high school not BANV amount to 149, while 83 students came from 2 other high school enrollments outside of BANV. In fact, in Figure 1, 44 twelfth grade students came from 3 other schools before enrolling at BANV with 3 and 2 twelfth grade students having 5 to 6 enrollments at other schools prior to attending BANV. Although BANV’s credit deficiency illustrates an increase across grade levels, this credit deficiency amount at 12th grade is still lower than the State’s (18.2%; Table 5 and 4 comparison of 12th grade credit deficiency during accountability year 2013-14; 18.2% versus 17.8%).

*Figure 1*. The number of school enrollments among 12th grade BANV students

In fact, the same pattern of multiple enrollments among current BANV students in the 11th grade was observed through data (e.g., see Figure 2). Of the 240 11th grade students only 39 had an enrollment with BANV and no other school. At 11th grade, there are already 116 students coming from another school and 71 students coming from 2 other schools. At the extreme end, 12 students in the 11th grade have already been to 3 other schools, while 2 students have enrollments with 4 other schools not BANV. Another insightful piece of information is the amount of students from 11th grade to 12th grade. For instance, in Figure 7 there are 240 11th graders accounted for, yet in 12th grade there are 328 students and as a whole they have more amounts of multiple enrollments outside of BANV. This notion of more students and students with more enrollments with other schools is a common theme as we observe 10th and 9th grade.

*Figure 2*. The number of school enrollments among 11th grade BANV students

Among 10th grade students currently at BANV, which amount to 157 in number, there is still a pattern that resembles the number of school enrollments among students in 11th and 12th grade. For example, in Figure 3, only 33 students have enrollment with BANV and no other school, which is similar to 39 among 11th grade students (i.e., Figure 2) and 30 among 12th grade students (i.e., Figure 1). Furthermore, there is a high amount of 10th grade students who have a previous enrollment with another school, which was observed in both 11th and 12th grade students. The number of school enrollments among BANV 10th grade students also extends to 2 other schools (22 students) and 3 other schools (3 students). Although, multiple school enrollments are reported among 10th grade students before coming to BANV, the increase of students from 10th grade to 12th grade also suggest that students enroll into BANV later in their educational pursue. For instance, BANV grade-level populations go from 157 in 10 grade to 240 in 11th grade and 328 in 12th grade.

*Figure 3*. The number of school enrollments among 10th grade BANV students

In Figure 4, among 9th grade students only 54 (80.6%) had no prior school enrollment before coming to BANV. However, even at 9th grade 19.4% (13/67) of 9th grade students had a school enrollment before coming to BANV. The drastic grade level population from 10th to 12th is more apparent when considering the 9th grade population. For example, currently there are 67 9th grade students, yet in 10th grade there are 157 students, in 11th grade there are 240 students, and in 12th grade there are 328 students. The total 9th grade student population of BANV would only represent 8.46% (67/792), while including the 10th grade population (157) with the 9th grade population would only represent 28.3% (224/792) of the total student population of BANV. Clearly, the larger percentage of students at BANV are the 11th and 12th grade students with 12th grade students outnumbering 11th grade students 328(41.4% of the total student population) to 240 (30.3% of the total student population).

*Figure 4*. The number of school enrollments among 9th grade BANV students

### *School Pipelines, March 2016*

Since only thirty 12th grade students reported not attending any school other than BANV (e.g., see Figure 1), a closer look at where 12th grade students (March 2016) came from was essential in illustrating the impact on BANV’s graduation rate. A frequency count of the number of instances Beacon Academy of Nevada (BANV) is reported among 12th grade students’ current and prior enrollment occurred 539 times out of 1,480 instances where a school was reported. As a result, 539 instances of BANV among 12th grade students represents roughly 36.4% (or 539/1480). However, prior enrollments among 12th grade students are diverse and with multiple prior enrollments per 12th grade student. In other words, many students are coming from other schools (e.g., see Table 6). A frequency of below 10 instances of a school reported among 12th grade students’ prior enrollments was the cutoff point, which led to the identification of 26 schools as pipelines (i.e., where students came from prior to BANV) to BANV. Additionally, seven other schools are worth mentioning as well as the combined total of prior enrollments with behavioral schools and juvenile detention.

Among the 26 schools identified by BANV 12th grade student records, 25 (behavioral schools and juvenile detention were combined as one school, which represent 6 additional schools in the Las Vegas area) schools were located in the Las Vegas area or Clark County. One school of 26, Nevada Connections Academy, is located in Reno. For an illustration of where 12th grade students and their previous enrollments, see Figure 5. In Figure 5, the yellow stars illustrate the 25 of 26 schools 12th grade students are reporting as their prior enrollments before attending BANV. The concentration of what schools 12th grade students are coming from informs BANV of the student population seeking educational services. Because of prior 12th grade student enrollment in other schools, BANV can consolidate its effort to focus on the Las Vegas area student population, since the majority of the student population seeking educational services are indeed in the Las Vegas area. As a result, 96% (25 of 26 schools) of the 12th grade student population comes from the surrounding area.



*Figure 5*. Location of schools the 12th grade population came from prior to BANV enrollment.

The Behavioral schools and Juvenile Detention were the following: Cowan (5 prior enrollments), Southwest (7 prior enrollments), Jeffrey (1 prior enrollment), Peterson (4 prior enrollments), and Morris (1 prior enrollment) Behavioral school and the Juvenile Detention Center (4 prior enrollments). The other seven schools worth mentioning, which had less than 10 prior enrollments were the following: Virgin Valley, Eldorado, Foothill, Spring Creek, North Valleys, Cimarron-Memorial and Las Vegas. Schools mentioned in Table 6 represent the schools that 12 grade students at BANV had previous enrollments with and suggest possible school pipelines.

Observing the instances of 11th grade students attending other schools prior to BANV, Table 6 displays Spring Valley representing the most among 11th grade students. Consider from Figure 2, only 39 11th grade students reported not attending any other school prior to enrollment at BANV. The next most frequent school among 11th grades drops dramatically and results in Durango and Clark High Schools. There 15 schools representing among 11th grade students at BANV, based on their prior enrollments and with the same cutoff point of 10 school instances. Other schools worth mentioning (below 10 school instances) were: Mojave, Basic, Valley, Bonanza, Canyon Springs, Foothill, and 5 students came from behavioral or juvenile detention centers prior to BANV.

Table 6
*School Pipelines to Beacon Academy of Nevada from 12th and 11th grade prior enrollment instances, March 2016*

| *Table 6 Continued* |
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| High School Prior Enrollments Recorded | 12 Grade Students | High School Prior Enrollments Recorded | 11 Grade Students |
| Durango | 51 | Spring Valley | 45 |
| Spring Valley | 49 | Durango | 24 |
| Palo Verde | 47 | Clark | 24 |
| Arbor View | 32 | Palo Verde | 21 |
| Shadow Ridge | 31 | Sierra Vista | 18 |
| Bonanza | 28 | Green Valley | 17 |
| Green Valley | 27 | Odyssey Charter | 14 |
| Centennial | 24 | Silverado | 13 |
| Nevada Virtual Academy | 24 | Centennial | 12 |
| Desert Oasis | 23 | Western | 11 |
| Behavioral schools and Juvenile Detention | 22 | Nevada Connections Academy (Nevada Virtual Academy) | 11(5) |
| Coronado | 20 | Desert Oasis | 11 |
| Legacy | 18 | Rancho  | 11 |
| Clark | 18 | Coronado | 10 |
| Silverado | 17 | Cimarron Memorial | 10 |
| Liberty | 16 |  |  |
| Western | 16 |  |  |
| Del Sol | 14 |  |  |
| Sierra Vista | 14 |  |  |
| Chaparral | 13 |  |  |
| AIS Jr/Sr | 13 |  |  |
| Canyon Springs | 11 |  |  |
| Desert Pines | 11 |  |  |
| Nevada Connections Academy | 10 |  |  |
| Nevada Learning Academy | 10 |  |  |
| Rancho | 10 |  |  |
| *Source*. Infinite Campus–BANV learning management system data. Behavioral schools and Juvenile Detention = Cowan, Southwest, Jeffrey, Peterson, and Morris Behavioral school and the Juvenile Detention Center. |

Additionally, the list of prior school enrollments of 11th grade students indicates that most of the 11th grade population is coming from the Las Vegas area or Clark County. For example Figure 6, illustrates 15 of the 16 schools most represented from 11th grade students. Only one school is outside of Clark County (i.e., Nevada Connections Academy). As a result, 94% (15 of 16 schools) of the 11th grade students being served are coming from the surrounding area.



*Figure 6*. Location of schools the 11th grade population came from prior to BANV enrollment.

In comparing the 12th and 11th grade students, both grade-level populations come from the surrounding Las Vegas area. In other words, as an online high school, BANV is observing student needs from the immediate population close by and not necessarily across the State of Nevada. For example, Durango and Spring Valley are the top two high schools that occurred the most among 12th and 11th grade prior enrollments. Generally, the same schools observed among 12th grade prior enrollments are also seen in the 11th grade students. Surprisingly, schools not observed among 12th grade students that have a strong presence among 11th grade student prior enrollments are Odyssey Charter and Cimarron Memorial. Although Nevada Learning Academy did not have a strong appearance among 11th grade students, it did appear 8 times among prior enrollments and depicted in Figure 2 (i.e., as identified from March 2016 data). The prior enrollments among 11th grade students represents the “school pipelines” feeding into BANV enrollment at the 11th grade.

### Comparisons used for BANV

Beacon Academy of Nevada 2013-2014 increased its status from the previous year as measured by the Authority Framework, For instance, during the 2013-2014 school year, according to the Authority Framework (2013-14) the 9-12 student population was 811. The SPCSA overall school rating was 37.90 (or not meeting the standard), indicating an approaching effort toward the standards. The 2013-14 framework pointed to Graduation Rate 5-Year (HS) and Proficiency Math Comparison (HS) was the two lowest rated indicators (i.e., U for unsatisfactory). However, Graduation Rate 4-Year (HS) was elevated to the next level higher (i.e., AP or approaches the standard). Other indicators at the AP level were MGP Math (EL, MS, HS), GAP Math Proficiency (HS), Proficiency Reading Comparison (HS). The summative below standard indicators (i.e., 6/10 scored indicators) has marginalized positive outcomes during 2013-14, such as EC (i.e., exceeds the standard) ratings in GAP Reading Proficiency (HS) and Reading Proficiency (EL, MS, HS). What was at standard (or AD, adequate) were the MGP Reading (EL, MS, HS) and Math Proficiency (EL, MS, HS).

Of the 40 schools and 94 students used as a comparison model (i.e., Table 7) to Beacon Academy not one represented the unique characteristics of an online school. Rather the 40 schools and 94 students represent a random sampling of schools not online or having a large online student population. The fact there is no online school with online student users incorporated into the sampling method is directly undermining the level of expectation from an online student population interacting with an online school.

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| Table 7*Zoned School Comparison 2013-14* |
| Arbor View | Basic | Beatty | Bonanza | Boulder City | Centennial | Chaparral |
| Cheyenne | Churchill | Cimarron-Memorial | Clark | Coronado | Dayton | Del Sol |
| Desert Oasis | Desert Pines | Durango | Earl Wooster  | Edward C. Reed | Eldorado | Elko |
| Foothill | Green Valley | Las Vegas | Legacy | Liberty | Mojave | North Valleys |
| Palo Verde | Reno | Shadow Ridge | Sierra Vista | Silverado | Spanish Springs | Sparks |
| Spring Valley | Sunrise Mountain | Valley | West Wendover Junior/Senior  | Western |  |  |
| *Source*. State Public Charter School Authority Framework 2013-14 |

In 2013-14 BANV made improvements which led to an overall NSPF rating of 3 stars, which is the highest compared to priors years. Although there were gains in math for charter proficiency (28.70%) the zone school proficiency was still higher (54.56%) and resulted in a similar difference from previous years (25.86%). The score of U remained the same, but there was evidence of academic progress. As for reading the charter proficiency was 51.10% compared to 57.95% from zone school proficiency. The result was less of a gap compared to previous years in reading (6.85%). For reading the score was assigned as AP or approaches the standard. Despite the gradual improvements BANV did receive a school NSPR rating of 3 stars.

Beacon Academy of Nevada 2012-2013 saw no indicator at standard level (or AD) during the 2012-13 school year, according to the Authority Framework (2012-13) the 9-12 student population was 732. The SPCSA overall school rating was 9.38 (or U level performance), indicating unsatisfactory progress toward the standard. The 2012-13 framework pointed to MGP Reading (EL, MS, HS), MGP Math (EL, MS, HS), and GAP Math Proficiency (HS) as critical or the lowest performance level. All other indicators were at the unsatisfactory level or not meeting the standard. They were: GAP Reading Proficiency (HS), Reading Proficiency (EL, MS, HS), Math Proficiency (EL, MS, HS), Proficiency Reading Comparison (HS), Proficiency Math Comparison (HS), Graduation Rate 4-Year (HS) and Graduation Rate 5-Year (HS).

Of the 44 schools and 122 students used as a comparison model (i.e., see Table 8) to Beacon Academy not one represented the unique characteristics of an online school. Rather the 44 schools and 122 students represent a random sampling of schools not online or having a large online student population. Restated, the fact there is no online school with online student users incorporated into the sampling method is directly undermining the level of expectation from an online student population interacting with an online school.

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| Table 8*Zoned High School Comparison 2012-13* |
| Arbor View | Basic | Bonanza | Canyon Springs | Centennial | Chaparral | Cheyenne |
| Cimarron-Memorial | Clark | Coronado | Damonte Ranch | Del Sol | Desert Oasis | Desert Pines |
| Durango | Eldorado | Elko | Fernley | Foothill | Galena | Green Valley |
| Hug | Las Vegas | Legacy | Liberty | Lowery | Mojave | North Valleys |
| Pahrump Valley | Palo Verde | Rancho | Reed | Reno | Sandy Valley | Shadow Ridge |
| Sierra Vista | Silverado | Spanish Springs | Spring Valley | Sunrise Mountain | Tonopah | Valley |
| Western | Wooster |  |  |  |  |  |
| *Source*. State Public Charter School Authority Framework 2012-13 |

Because of the mismatch of comparison schools to BANV, zoned school proficiencies dominated. For example, the charter proficiency in math was 2.48% compared to the zone school proficiency of 28.08%; this left a large difference of 25.60% between the two estimates and ultimately resulted in a Score of U or unsatisfactory. Furthermore, in reading the charter proficiency was 33.62% while the zone school proficiency was 51.91%. Again the discrepancy resulted in a large gap of 18.29%, which also led to an unsatisfactory score of U. In this point of time, 2012-13, BANV was rated as having one star on the school NSPF rating. However, much has changed concerning BANV’s overall performance and is now a 3 star NSPF rating in 2014.

### Cost

Consistently, BANV is able to reduce cost across instruction, instruction support, operations and leadership (e.g., see Table 9). Over time BANV has increased cost in instructional support, which is not surprising given the student-centered approach BANV has gravitated toward in aiding students in their educational achievement. BANV’s increase in instructional support is an investment where the State has declined in money spent on instructional support. With proactive cost reduction BANV is able to provide student centered instruction and services for $3,626 per student. This is a tremendous decrease reported in 2010-11 when spending was at $6,020 and BANV was known for using multiple learning management systems. However, from 2011-14 BANV has maintained consistent total expenditures per student (e.g., $3,759 to $3,626). On the other hand, the State has illustrated from 2011 to 2014 a gradual increase to spending per student with cost increases tied to instruction. Despite more cost among public schools, BANV has the unique characteristic to reduce cost where other schools cannot. Meaning, from a cost perspective, efforts made at BANV to increase overall student performance is an investment to student achievement at lower cost estimates.

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| Table 9*Beacon Academy of Nevada and Nevada Fiscal Information–Per Pupil Expenditures* |
| Acc. Year | Instruction (%) | Instruction Support (%) | Operations (%) | Leadership (%) | Total (100%) Expenditures |
| Beacon Academy of Nevada |
| 2011-12 | $2,002 (53.3) | $1,039 (27.6) | $5 (0.1) | $712 (18.9) | $3,759  |
| 2012-13 | $1,982 (55.2) | $973 (27.1) | $25 (0.7) | $610 (17) | $3,589  |
| 2013-14 | $1,967 (54.3) | $1,177 (32.5) | $28 (0.8) | $453 (12.5) | $3,626  |
| Nevada  |
| 2011-12 | $4,961 (59.4) | $895 (10.7) | $1,865 (22.3) | $632 (7.6) | $8,353  |
| 2012-13 | $4,799 (58) | $968 (11.7) | $1,874 (22.6) | $633 (7.6) | $8,274  |
| 2013-14 | $5,023 (58.6) | $931 (10.9) | $1,959 (22.8) | $663 (7.7) | $8,576  |
| *Source*. Data Interaction for Nevada Report Card |

# **Conclusion**

Although the BANV graduation rate is lower than that of the State due to the high number of “at risk” students being served, 85.5% of BANV students graduate with a standard diploma compared to only 63.7% from the State and 77.6% from the State Public Charter School Authority. Furthermore, the validity of the graduation rate in providing a descriptive account of BANV overall performance is not warranted given the high level of transfer outs, transiency rate, prior enrollments among students, and the credit deficiency levels. Also, to compare BANV to non-online schools is not a valid comparison given the physical presence of online versus physical schools.

From student record data, BANV’s student population seeking services reside in the Las Vegas area and calls for BANV to focus its educational resources to those students. Further policy changes are encourages related to data collection and addressing the negative influences on the graduation rate, which undermine BANV’s overall performance. As a distal measure (i.e., a measure related but indirectly assessed in the context of graduation rates) like proficiency scores, math was identified as a needed content area for improvement. However, due to the online status of BANV, it is strongly encouraged that further resources go to math support and instruction, according to math scores reported in student records (March 2016 evaluation of BANV’s student records).

Because BANV is an online high school the cost structure is different from other schools and allows for the flexibility to be more student driven and centered. In sum, BANV has many challenges that threaten the very measures used to summarize its overall performance as well as a missing charter authority framework to properly provide direction toward improvement. Yet, if we take a closer look into how BANV’s overall performance measures are effected by challenges described here, we could easily avoid the mistake of labeling BANV as underperforming.

## Recommendations to Beacon Academy of Nevada

 Through synthesis, the following recommendations are made in an effort to provide direction in BANV’s progressive movement toward empowering at-risk students to achieve academically:

1. A consolidation of focusing educational services to the main student population seeking its services (i.e., students in the Las Vegas area)
2. Develop a framework for illustrating BANV’s overall performance in meeting the needs of at-risk students
3. From school comparisons, an effort is needed to address math scores among students
4. From data validation, BANV is advised to address minor data inconsistencies from its learning management system
5. BANV should gather data on the reasons for students transferring out
6. Further observance of credit deficiency among students and those entering BANV
7. More data analysis efforts to assess other negative influences to the graduation rate
8. An aggressive approach is needed to counteract negative effects on the graduation rate
	1. An increase in instructional support and instruction for credit deficient students
	2. Retention efforts to counter large transfer outs and the transiency rate

# **Appendix**

## Validation Methodology

The process of data validation involved three steps: First, the need to comprehensively and iteratively examine all data for consistency across BANV student records. Second, the communicative interaction of researchers and BANV employees concerning the status of student records and their descriptive account of BANV’s overall performance. Thirdly, a combined synthesis of researcher findings and BANV employee findings focused on answering the following question: “How well is Beacon Academy of Nevada doing?” This report makes a value judgement of what is well by connecting “well” to basic State requirements for acceptance (i.e., State standards). As a result, concerns for BANV’s performance in specific areas (e.g., graduate rates) are evaluated in this report as opposed to holistic evaluation.

In identifying any inconsistency among student records, a through and systematic approach was taken in order to assess all data entries contained within Beacon Academy of Nevada (BANV) learning management systems (LMS). This approach called for an iterative process of evaluating each generated report for any inconsistencies from BANV’s LMS. Results from this process inform BANV of inconsistencies identified in their LMS.

Communicative interaction between researchers and BANV employees relied on key informants. For instance, key informants (i.e., 3 administrators) were asked to describe the flow of information through their learning management systems (LMS) related to student records. Discussion also occurred between researchers and BANV employees in order to acknowledge inconsistency found during inspection of LMS reports. Data anomalies were resolved through either key informant clarification of the meaning of anomalies and recommendations.

## *Student Records Validation*

There were two aspects of evaluating inconsistencies within the learning management system for Beacon Academy of Nevada. First there was a global evaluation, which involved the examination of LMS-generated reports for validation errors and inconsistency in data. Next, student records within the BANV LMS was assessed for inconsistencies related to enrollment. Inconsistencies in reports and data were reviewed for the following possible errors: inaccurate data, missing data, incomplete data, and values outside established parameters (i.e., range testing).

Reports produced by the learning management system (LMS) were iteratively examined by nine different indexes, which were also LMS indexes (i.e., student information, census, behavior, health, attendance, scheduling, fees, grading & standards, and NV state reporting). Within each index LMS reports were generated so that researchers could observe any inconsistencies. The LMS had built-in validation reports which were also utilized. Reports generated from the LMS with inconsistencies pointed to student ID duplicates and 7 enrollment overlaps. Also, there were instances in generated reports where the start date of 38 students did not have a reasonable start date (i.e., 1901). Other than duplicate issues and inconsistency in student start dates other reports were not identified as having inconsistencies.

Also, student records were evaluated for inconsistencies (e.g., see Table 10). The inconsistencies observed during evaluation of student records resulted in the Inconsistency type category, which led to the following types: Grade levels out of order, prior enrollment history missing or limited, and duplicates.

The most grades displayed out of order was among 12th grade students with 8 instances and 11th grade students closely following with 7 instances. The grade order relied on the start date and if it was chronological in displaying a student’s progression up the grade levels. If the grade levels were out of order, but were in chronological order, then this was the only inclusion of grade levels out of order. Also, because incorrect placement of students followed by corrections made in the LMS caused grade order to be wrong, these instances were not counted. However, if the grade levels were out of order as well as out of chronological order, then these instances were counted as inconsistent and reported in Table 10.

Prior enrollments needed an entry between 9 and 12 for it to not be missing grade level information. As shown in Table 10, there were 29 prior enrollment histories missing among 11th grade students, 13 missing among 12th grade students and 11 missing among 10th grade students. Also, those students whom never should up to BANV were excluded from prior enrollments. Prior enrollment history as limited referred to student records with at least 2 grade level histories missing.

After reviewing 808 student records, only three duplicates were identified among student records. One duplication occurred in the 11th grade and two in 10th grade. The duplication was considered minimal compared to the total of student records. In Table 10, there was no indication of duplicates identified among 12th grade students. The amount of inconsistencies was considered marginal when student records totals per grade level were compared to each inconsistency by grade level.

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| Table 10*Student Records evaluated for Inconsistency March 2016 within Infinite Campus* |
| Inconsistency type | Grade 12 | Grade 11 | Grade 10 |
| Grade levels out of order | 8 | 7 | 1 |
| Prior enrollment history missing or limited | 13 | 29 | 11 |
| Duplicates | 0 | 1 | 2 |
| Total student records per grade\* | 329 | 249 | 162 |
| School name inconsistencies  | 3 schools  |
| BANV to State reporting | 1 sample error |
| *Source*. Infinite Campus. \*There are 68 9th grade student records for a total of 808 student records at BANV. |

The data entry related to school names was also assessed. In total, only three schools where identified as having more than one variation in name. For example, Odyssey HS was used and so was Odyssey Charter HS, and South Cont. HS was used in relation to So. Continuation HS; and finally, subtly, Cimarron Memorial was used with Cimarron-Memorial also present. The use of Nevada versus NV was allowed among different variations to the same school name. For instance, NV Learning Academy versus Nevada Learning Academy. The last data entry error was related to a discrepancy of 1 student in BANV’s system in relation to NV reporting. However, this discrepancy is most likely do to when enrollment census are taken.

A careful and thoughtful examination of student records and LMS generated reports were assessed during data validation. The process of data validation led in trusting in the analysis of LMS data with Nevada Report Card data as foundational in drawing conclusions. The measure of data validation and its meaning to drawing conclusions relies on multiple measures and not just one. Therefore, the process continued with communications with BANV administration. Meaning, in the process of examining student records, it was essential to discuss and interact with BANV administrative staff in identifying the extent of their knowledge in LMS data validation rules and efforts for improved and relevant measurements in describing BANV’s overall performance to serve at-risk students.

## *Communicative Interactions*

Through staff discussion it was also made aware to the researchers that Beacon Academy of Nevada (BANV) had implemented several new data measures in order to have more descriptive information. New data measures outlined by BANV have been deemed significant changes for the overall ability of BANV to provide data with more integrity, validation, verification, and accuracy of information.

For example, data that is being examined more closely for 2016 are as follows:

* Level of credit deficiency, this was not defined in the past
* Graduation rate for returning students i.e. grad rate for students that have attended Beacon 4 years, 3 years, or 2 years
* Save Rate (conversion of students that had dropped out of school and returned and graduated with Beacon Academy)

Additionally, BANV was using several management systems such as Infinite Campus, but has consolidated its use in multiple management systems. These management systems also have validation measures built into their systems, which strengthens the overall data validation of student records.

In fact, Bighorn is typically used as the validation portal where BANV can verify that some of the data that Nevada Department of Education is receiving from our student information system and check for errors in reporting. Bighorn is also used to validate testing, cohort grad rates, and demographics during specific times throughout the year. However, after the opportunity has passed BANV cannot generally retrieve the record from Bighorn itself. The learning management system utilized by BANV has data validation rules by design, which BANV employees were asked to describe the flow of student records at Beacon Academy. For instance, when a student record is entered there are four categories of data as illustrated in Figure 1.

*Figure 1*. Student Record Entry

However, as data is entered there are data validation screens built into the flow of data as a student record is created. For example, the No and Yes present in Figure 2 illustrate the decision rules incorporated into the learning management system to automatically provide constrains to data that is entered per student. The process outlined in Figure 2 ultimately constructs the student record and limits the amount of possible errors.

Submit Enrollment/ Demographics

Student/Parent

Enter Demo/ Enrollment

Registrar/ Enrollment Team

Docs valid?

Spec Pop?

Enr.by state cutoff?

Update Demo
Spec. Pop
Coordinator

State Validation Technology Coordinator

Yes

Yes

Yes

No

No

No

*Figure 2*. Beacon Academy Student Demographic Data Flow 2015-16

Furthermore, when validation rules are violated the student record is not created and resorts back to the counselor or registrar, for example (Figure 3).

External Grades

Counselor/ Registrar

Error noticed?

Yes

No

LMS Attendance /Grades

Attendance Office/Teachers

Error noticed?

Yes

No

*Figure 3*. Beacon Academy LMS/Attendance/Grades Data Flow 2015-16

In Figure 4, validation is also assessed at the state-level before becoming a student record in the student information system. Specific information is requested along the way. For example, at the end of year process if the graduation cohort year is entered then that record continues to the State validation technology coordinator to become a student record. Otherwise, if the graduate cohort year is not established, then a re-enrollment process begins.

Re-enrollment/ Demographics

Student/Parent

Update Assessments
Counselor

 State Validation Technology Coordinator

Yes

No

Grad. Cohort Year?

State/Natl Tests

End of Year Process

*Figure 4*. Beacon Academy End of Year and Assessment Data Flow 2015-16

Additionally, different types of student information are assessed in the validation rules as seen in the flow chart described by Figure 5. Errors in enrollment or LMS attendance could be identified, but the use of staff are needed to identify such errors. For instance, errors related to missing prior enrollments were found in Table 1 during the examination of student records. Therefore, it becomes vital to constantly assess student records for errors or consistencies.

Submit Enrollment/ Demographics

Student/Parent

Error noticed?

Error noticed?

Yes

Yes

No

No

LMS Attendance /Grades

Attendance Office/ Teachers

*Figure 5*. Beacon Academy Data Flow 2015-16

 The communication and interaction with BANV staff led to their creation of Figures 1 through 5. An increased awareness of needed measures and current measurement was observed among BANV administration. The brainstorming of new or currently missing measures has also led to the conceptualization of a framework in determining BANV’s overall performance in serving at-risk students. This framework development was highly valued because of invalid school comparisons used in assessing BANV’s performance in the past.