

National Dance Institute of New Mexico Advanced Training Programs Evaluation Report

September 2020



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Acknowledgements

We would like to thank the New Mexico Public Education Department for providing data on test scores, attendance and disciplinary infractions and for their responsiveness regarding variable definitions. We also appreciate the initial data analysis work conducted by Alejandra Gomez. NDI New Mexico provided funding for this report and NDI New Mexico participation data. The photos in this report are from the NDI New Mexico Marketing Department.

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Executive Summary

BACKGROUND

More than 25 years ago, National Dance Institute New Mexico (NDI New Mexico) started serving 100 children in one New Mexico school. Now, they reach more than 8,000 children annually through in-school, after-school, summer, and Advanced Training programs.

NDI New Mexico's Advanced Training programs are designed to provide children opportunities to develop discipline, practice teamwork, and gain self-confidence while learning and refining their dance techniques. NDI New Mexico's Advanced Training programs are delivered after-school and on weekends for motivated students who want to continue learning and growing.



The purpose of this evaluation is to understand the relationships between participation in NDI New Mexico's Advanced Training programs and school-related outcomes including school attendance, academic performance (standardized testing), and delinquent behavior. The University of New Mexico Prevention Research Center (UNM PRC) analyzed available school administrative data and NDI New Mexico Advanced Training program data for AY 2015-2016, AY 2016-2017, AY 2017-2018, and AY 2018-2019.

FINDINGS

SCHOOL ATTENDANCE

Overall, students who participated in NDI New Mexico Advanced Training programs were less likely to be chronically absent from school compared to those who did not participate.

In AY 2016-2017, 2017-2018 and 2018-2019, students who participated in NDI New Mexico Advanced Training programs had statistically higher odds, ranging from 1.71 to 3.48 times, of having 10 or fewer school absences than students that did not participate. After adjusting for demographic factors, participating students still had more than twice the odds of having 10 or fewer absences. During AY 2015-2016, students who participated had 1.36 times higher odds of having 10 or fewer absences, however this was not statistically significant.

Students who participated in the free-and-reduced lunch program experienced stronger positive effects of NDI participation on school attendance compared with students who were not in the free-and-reduced lunch program (AY 2015-2016 and AY 2016-2017).

TEST SCORES

Overall, students who participated in NDI New Mexico Advanced Training programs were more likely to be proficient in Math, Reading and Science standardized testing compared to those who did not participate.

Across all four academic years, students who participated in NDI New Mexico Advanced Training programs had statistically higher odds of having higher test scores than students that did not participate. After adjusting for demographic factors, NDI New Mexico participants had statistically higher odds of meeting proficiency in math (range: 1.67-2.08 times higher), reading (range: 1.52-2.09 times higher), and science (2.51 during AY 2015-2016, 1.45 during AY 2016-2017) compared to students who did not participate. During AY 2017-2018, students who participated had 1.4 times higher adjusted odds of meeting proficiency in science, however this was not statistically significant.

DELINQUENT BEHAVIOR

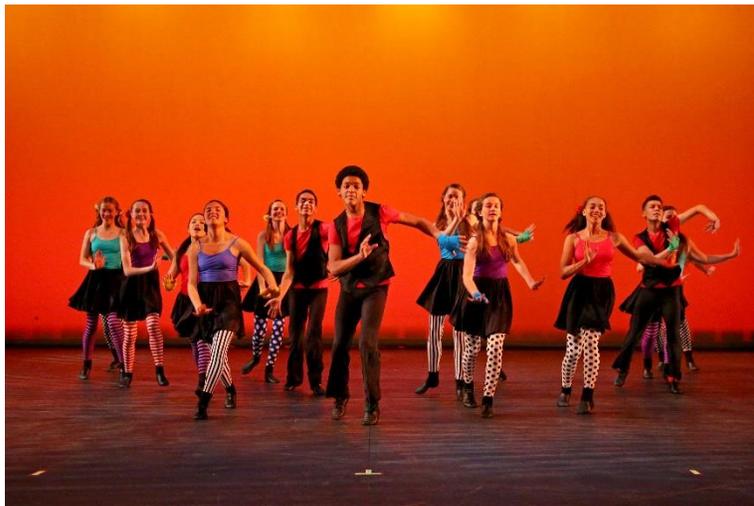
Overall, students who participated in NDI New Mexico Advanced Training programs had lower odds of having a record of delinquent behavior compared to those who did not participate.

After adjusting for demographic factors, students who participated in NDI New Mexico Advanced Training programs had 2.7 times statistically lower odds of having disciplinary infractions on record compared with students who did not participate.

The effect of NDI Advanced Training programs on delinquent behavior was significant among non-participants of the free-and-reduced lunch program, but was not statistically significant among participants in the free-and-reduced lunch program.

CONCLUSIONS

Participation in NDI New Mexico's Advanced Training programs was significantly associated with 10 or fewer absences for three of four assessment periods; proficient test scores in Math, Reading, and Science for all four periods; and fewer records of delinquent behavior at school. Participation was also positively associated with being female, Hispanic, and participating in the free-and-reduced lunch program. Participation was negatively associated with being in higher grade levels, being a student with a disability, and having English language learner status.



RECOMMENDATIONS

NDI New Mexico Advanced Training programs are most successfully enrolling Hispanic and female students as well as students who participate in the free-and-reduced lunch program. NDI New Mexico may want to examine non-participation and/or attrition among students who are disproportionately underrepresented among NDI New Mexico participants (e.g. Native American students, male students, students with disabilities, etc.). NDI New Mexico can further identify strengths and areas of improvement by conducting surveys, focus groups, or interviews with program staff and participants. NDI New Mexico may also want to examine longer-term outcomes, such as high school graduation rates, to determine if there are lasting benefits among program participants who have reached young adulthood.

NATIONAL DANCE INSTITUTE NEW MEXICO ADVANCED TRAINING PROGRAMS EVALUATION REPORT

Background

In New Mexico, 26% of children are living in poverty and more than half of children aged 3 to 4 were not attending preschool (NM Voices for Children, 2020). In 2020, 76% of 4th graders were found to be not proficient at reading and 79% of 8th graders were not proficient at math (NM Voices for Children, 2020). The National Center for Education Statistics estimated that, overall, New Mexico's graduation rates among public school students was much lower than the national average of 85% (McFarland, et al., 2020). The 2017 adjusted cohort graduation rate was 71% for all students and 68% for economically disadvantaged public-school students. Relative to the 76% graduation rate of white students, Native American, Black, and Hispanic students had lower adjusted cohort graduation rates at 61%, 68%, and 71% respectively. Furthermore, students with disabilities graduated at a rate of 62% and students with limited English proficiency had a 68% graduation rate.

Data from the Albuquerque Public Schools (APS) Indian Education Department reported that the four-year graduation rate of Native American students was 54.2% (APS Indian Education Department, 2019). School attendance has also been decreasing for Native American students attending APS. In addition, approximately 8.7% of Native American students enrolled during AY 2018-2019 had at least one delinquent behavior on record.

Being exposed to childhood adversity, including poverty, household dysfunction, abuse, and family violence, has been shown to reduce the likelihood of educational achievement and to increase adoption of unhealthy behaviors which can lead to long-term chronic diseases as adults (Dube, et al., 2003; Brown, et al., 2015; McLaughlin & Sheridan, 2016). Children who grow up in economically disadvantaged families and underserved communities also have a lower success rate in science, technology, engineering, and mathematics disciplines (Doerschuk, et al., 2016). Having a history of adverse childhood experiences was also found to be associated with engagement in delinquency during early adolescence (Garrido, et al., 2018). In a study on high-risk young adolescents, the odds of showing delinquent behaviors increased with every additional adversity experienced.

Youth development initiatives, especially those delivered as after-school programming, have been associated with positive psychological outcomes and social connections especially for underserved youth (Ullrich-French, McDonough, & Smith, 2013; Roth & Brooks-Gunn, 2015; Hedemann & Frazier, 2017). Allowing youth to engage with peers and to receive adult support and guidance offers opportunities for building social-emotional skills and mitigating risks. These programs may often involve using creativity, promoting confidence, emphasizing teamwork, and increasing self-agency (Roth & Brooks-Gunn, 2015; Montgomery, 2017). Youth development programs that are focused on the arts often combine "arts instruction and art-making with life skills development", developing well-rounded individuals and enhancing youth resiliency (Montgomery, 2017; Hedemann & Frazier, 2017).

NATIONAL DANCE INSTITUTE OF NEW MEXICO'S ADVANCED TRAINING PROGRAMS

When National Dance Institute - New Mexico (NDI-New Mexico) began in Santa Fe in 1994, the organization was serving only 100 children in one NM school. Now, NDI New Mexico reaches more than

8,000 children in the state through its in-school, after-school, summer, and Advanced Training programs. General outreach programs to underserved children in urban, rural, and Native American communities are offered in Santa Fe, Albuquerque, Northern New Mexico, and in residency.

NDI New Mexico's Advanced Training programs are programs designed to provide children opportunities to refine their dance techniques. They are delivered as after-school and weekend programs for students who participate in outreach programs but want to learn more. These programs are offered at The Dance Barns in Santa Fe, the Hiland Theater in Albuquerque, and seven other locations in NM. Participating students are instructed in advanced choreography, tap, jazz, and voice.

The Advanced Training programs are designed to be a well-rounded theater experience and increase opportunities to learn discipline, practice team work, and gain self-confidence. The Super Wonderful Advanced Team (SWAT) program is for 4th to 6th grade students. When students excel in SWAT and are currently in grades 7 through 9, they are invited to join the Celebration Team (CEL). Intermediate jazz and intermediate tap technique and voice are taught in the CEL programs.

PURPOSE OF THE EVALUATION

The purpose of this evaluation is to understand the relationships between participation in NDI New Mexico's Advanced Training programs and school-related outcomes including school attendance, academic performance, and delinquent behavior.

Methods

The UNM Prevention Research Center (PRC) evaluation team conducted a secondary data analysis of NDI New Mexico Advanced Training program participation data matched with NM Public Education Department (NM PED) administrative and testing data.

DATA COLLECTION

Data were for the 2015-2016, 2016-2017, 2017-2018, and 2018-2019 academic years. Datasets were linked using a student ID number. After linking the datasets, student ID numbers were deleted.

The independent variable measured was participation in an NDI New Mexico Advanced Training program. Student-level outcome measures included days absent from school; test scores in math, reading and science; and presence of school delinquency behaviors. Demographic data such as academic year, school district, gender, grade level, race/ethnicity, presence of disabilities, English language learner (ELL) status, and participation in the free-and-reduced lunch program were also examined. Complete demographic data were not provided for the 2018-2019 academic year.

NDI New Mexico Advanced Training programs were conducted in the following four school districts: Albuquerque Public Schools, Española Public Schools, Pojoaque Valley Public Schools, and Santa Fe Public Schools. The programs were for students in grades 4 to 9. Therefore, only data from those school districts and grade levels were included for data analysis. Observations that did not contain complete information on student ID number, school district, and grade level were not included in the analysis.

DATA MEASUREMENT AND ANALYSIS

Participation in NDI New Mexico Advanced Training Programs

Participation in NDI New Mexico Advanced Training programs was determined by presence in the NDI New Mexico data set for each academic year. All students in grades 4-9 in the Albuquerque, Española, Pojoaque, and Santa Fe public school districts that were not in the NDI New Mexico data set were categorized as having not participated in NDI New Mexico Advanced Training programs.

School Attendance

Using school administrative data, absenteeism (number of days absent) was calculated by subtracting the number of days attended from the number of days enrolled for each year. Students who were enrolled for 45 days or less in one school year were not included in the analysis. Because habitual truancy is defined as having accumulated more than 10 unexcused absences within a school year, a binary variable was created utilizing 10 absences as the cut-point.

Academic Performance

Individual academic performance was also assessed for all four academic years using results from summative test scores obtained by NDI New Mexico from NM PED. Test score availability for each student differed due to varied test requirements and statewide changes to testing. Mathematics and reading and/or language arts tests are administered annually in grades 3-8 (NM Public Education Department, 2020). Science test scores are available only once from Grades 3-5 and once from Grades 6-9.

Furthermore, statewide changes to actual tests used occurred during AY 2018-2019. Before 2019, the Partnership for Assessment of Readiness for College and Careers (PARCC) tests were used in assessing students for math and reading. Starting Spring 2019, the NM Standards-Based Transition Assessment of Math and English Language Arts (TAMELA) was administered for assessing math and reading abilities. The NM Standards-Based Assessment (NMSBA) for Science was administered to assess abilities in science.

A binary variable was created to differentiate between students who met proficiency for available testing and those who had scores below the proficient levels. Proficiency was then compared between NDI participants and students who did not participate in NDI New Mexico's Advanced Training Programs.

Delinquent Behavior

Using school administrative data, an individual was categorized as having delinquent behavior at school if they were included in the data set containing disciplinary infractions over the four-year period. The dataset did not include information on the academic year when the infraction occurred. All students who were not in the data set were categorized as having not been reported for school delinquency.

Statistical Analyses

Demographic variables of all students and students that participated in NDI New Mexico were examined and described. Relationships between NDI New Mexico Advanced Training program participation and demographic factors (e.g. gender, ethnicity, etc.) were then assessed using logistic regression. Unadjusted odds ratios, 95% confidence intervals, and p-values were reported. Significance level was set at $p < 0.05$.

Logistic regression was also used to analyze the association between NDI New Mexico Advanced Training program participation and the school-related outcomes of high absenteeism, proficiency on standardized tests and presence of delinquent behavior. Reporting was done for each year for absenteeism and test score outcomes. Reporting was aggregated for all four academic years for school delinquency. Odds ratios, 95% confidence intervals, and p-values were reported. Significance levels were set at $p < 0.05$.

Demographic characteristics may confound or modify the relationships between NDI program participation and the three school-related outcomes. Therefore, gender, ethnicity, participation in the free-and-reduced lunch program, presence of disability, and having an English language learner status were assessed to determine if they were effect modifiers or confounders. Stratification was used in instances of effect modification and multivariable regression modeling were used to adjust for the confounding factors. Adjusted odds ratios, 95% confidence intervals, and p-values were calculated. Significance levels were set at $p < 0.05$.

Results

DEMOGRAPHIC PROFILE

A total of 399 (0.81%) of the 49,264 students in grades 4-9 attending public schools in Albuquerque, Santa Fe, Española, and Pojoaque Valley participated in NDI Advanced Training programs. The demographic data for these students are presented in Table 1. Demographic data were similar across the academic years. Therefore, data are only presented for the most recent year that full data were available, AY2017-2018.

School districts. A majority (40,644, 82.50%) of the students included in the analysis attended Albuquerque Public Schools (APS). Santa Fe Public School (SFPS) students were second at 12%. Among the NDI Advanced Training program participants, APS students comprised 38% while SFPS students comprised nearly 36%. Compared to APS students, SFPS students had 6 times higher odds of participating in NDI Advanced Training programs, Española Public School (EPS) students had nearly 12 times higher odds, and Pojoaque Valley Public School (PVPS) students had 4.5 times higher odds.

Grade level. Students in 5th grade had 1.43 times significantly higher odds of participating in NDI Advanced Training programs compared with students in 4th grade. Sixth graders were similar to 4th graders in odds of participation. The odds of participating significantly decreased each year after 6th grade.

Gender. Overall, students were equally divided among females and males. Among the 399 students who participated in NDI Advanced Training programs in AY 2018-2019, nearly two-thirds (291, 72.93%) of the students were female.

Ethnicity. Two-thirds of all students and three-quarters of NDI Advanced Training program participants identified as Hispanic. Approximately 4.5% of students overall identified as Native American, 3.3% among NDI Advanced Training program participants. The proportion of students that identified as Black, Asian, Native Hawaiian/Pacific Islander, or multiracial was similar among all students and among NDI Advanced Training program participants. Hispanic students had the highest odds of participating in NDI Advanced Training programs.

Table 1. Demographic characteristics of students, grades 4-9, in the Santa Fe, Albuquerque, Española, and Pojoaque Valley Public School Districts, AY2017-2018 and NDI participation, AY2018-2019

Variables	Did not participate in NDI AT programs (n = 48,865)	Participated in NDI AT programs (n = 399)	Total (n = 49,264)	Odds Ratios (95% CIs)
School District				
Albuquerque	40,491 (82.86%)	153 (38.35%)	40,644	1.00
Santa Fe	5,944 (12.16%)	142 (35.59%)	6,086	6.32 (5.02-7.96)**
Española	1,488 (3.04%)	65 (16.30%)	1,553	11.56 (8.61-15.52)**
Pojoaque Valley	942 (1.93%)	16 (4.01%)	958	4.50 (2.68-7.55)**
Missing data		23 (5.76%)	23	
Grade level				
4th	8,419 (17.22%)	82 (20.55%)	8,501	1.00
5th	8,604 (17.60%)	120 (30.08%)	8,724	1.43 (1.08-1.90)**
6th	8,165 (16.70%)	85 (21.30%)	8,250	1.07 (0.79-1.45)
7th	7,793 (15.94%)	52 (13.03%)	7,845	0.69 (0.48-0.97)**
8th	7,638 (15.63%)	27 (6.77%)	7,665	0.36 (0.23-0.56)**
9 th	8,246 (16.87%)	10 (2.51%)	8,256	0.12 (0.06-0.24)**
Missing data		23 (5.76%)	23	
Gender				
Female	22,727 (46.51%)	291 (72.93%)	23,018	2.88 (2.30-3.60)**
Male	23,623 (48.34%)	105 (26.32%)	23,728	1.00
Missing data	2,515 (5.15%)	3 (0.75%)	2,518	
Ethnicity				
Caucasian	11,299 (23.00%)	64 (16.04%)	11,363	1.00
Hispanic	32,498 (66.51%)	300 (75.19%)	32,798	1.63 (1.24-2.14) **
American Indian, Alaskan Native	2,185 (4.47%)	13 (3.26%)	2,198	1.05 (0.58-1.91)
Multiracial, Asian/Pac. Islander, Black	2,883 (5.90%)	22 (5.51%)	2,905	1.35 (0.83-2.19)
School lunch status				
Free lunch	32,726 (66.98%)	300 (75.19%)	33,026	1.39 (1.09-1.78)**
Reduced price	1,489 (3.05%)	16 (4.01%)	1,505	1.63 (0.95-2.80)*
Not participating	12,135 (24.83%)	80 (20.05%)	12,215	1.00
Missing data	2,515 (5.15%)	3 (0.75%)	2,518	

With disabilities				
Yes	8,410 (17.21%)	24 (6.02%)	8,434	1.00
No	37,940 (77.64%)	372 (93.23%)	38,312	3.44 (2.27-5.20)**
Missing data	2,515 (5.15%)	3 (0.75%)	2,518	
ELL status				
Yes	8,805 (18.02%)	57 (14.29%)	8,862	1.00
No	37,545 (76.83%)	339 (84.96%)	37,884	1.39 (1.05-1.85)**
Missing data	2,515 (5.15%)	3 (0.75%)		

* Significance level is $p \leq 0.05$ and $p > 0.005$, ** Significance level $p \leq 0.005$

School lunch status. Free school lunch was provided to 67% of all students in this analysis, and 75% of students who participated in NDI New Mexico Advanced Training programs. Students with free school lunches have 1.4 times significantly higher odds of participating in NDI New Mexico Advanced Training programs compared with non-participants.

Students with disabilities. Three-quarters of the students in the overall analysis did not have disabilities, and nearly all (93.23%) of students who participated in NDI New Mexico Advanced Training programs did not have disabilities. Students without disabilities have 3 times significantly higher odds of participating in NDI New Mexico programs than students with disabilities.

English language learner status. Approximately 18% of students that did not participate in NDI New Mexico Advanced Training programs were ELL compared with 14% of students that did participate.

STATISTICAL ANALYSIS

School Attendance

In AY 2015-2016, 7.2% of all students incurred more than 10 absences. There was no difference between students who participated in NDI New Mexico Advanced Training programs and students who did not during this academic year (Table 2). In AY 2016-2017, 11.2% of non-participating students were absent more than 10 days compared with less than 4% of students who participated in NDI New Mexico Advanced Training programs. Students who participated in NDI New Mexico programs had 3.5 times significantly higher odds of better attendance (10 or fewer absences) than students who did not participate in NDI New Mexico Advanced Training programs. In AY 2017-2018, nearly 7% of non-participating students had absences greater than 10 days compared with 3% among NDI participating students. Students who participated in NDI New Mexico programs in AY 2017-2018 had 2.41 times significantly higher odds of having better attendance (0 to 10 total absences) than students who did not participate. In AY 2018-2019, nearly one-quarter (23.85%) of the students had absences greater than 10 days. This was lower among NDI New Mexico participating students (15.5%) who had 1.7 times significantly higher odds of having better attendance than students who did not participate in NDI New Mexico programs.

Table 2. Assessing the association between NDI New Mexico Advanced Training program participation and school attendance among students, grades 4-9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, across four academic years

Academic Year	Participation in NDI New Mexico's Advanced Training Programs	Greater than 10 days absent (n = 3,422)	0 to 10 days absent (n = 44,067)	Total (n = 47,489)	Odds Ratios (95% CIs)
2015-2016	Not a participant	3,395 (7.21%)	43,717 (92.79%)	47,112	1.00
	Participant	27 (7.16%)	350 (92.84%)	377	1.01 (0.68-1.49)
		(n = 5,347)	(n = 42,603)	(n = 47,950)	
2016-2017	Not a participant	5,331 (11.22%)	42,163 (88.78%)	47,494	1.00
	Participant	16 (3.51%)	440 (96.49%)	456	3.48 (2.11-5.73)**
		(n = 3,207)	(n = 43,294)	(n = 46,501)	
2017-2018	Not a participant	3,196 (6.93%)	42,938 (93.07%)	46,134	1.00
	Participant	11 (3.00%)	356 (97.00%)	367	2.41 (1.32-4.39)**
		(n = 11,137)	(n = 35,565)	(n = 46,702)	
2018-2019	Not a participant	11,079 (23.91%)	35,249 (76.09%)	46,328	1.00
	Participant	58 (15.51%)	316 (84.49%)	374	1.71 (1.29-2.27)**

** Significance level $p \leq 0.005$

Most demographic factors in the AY 2015-2016 dataset, with the exception of gender, had statistically significant relationships with both NDI New Mexico Advanced Training program participation and school attendance. After adjusting for school district, grade level, ethnicity, school lunch program participation, presence of disability, and ELL status, NDI New Mexico participating students were found to have 1.36 times higher odds of having 0-10 absences compared to students who did not participate in the program. However, this association was not statistically significant (Table 3). In AY 2016-2017, after adjusting for all available demographic factors, NDI New Mexico participants were found to have 2.40 times statistically higher odds of having 0-10 absences compared to students who did not participate. In AY 2017-2018, the adjusted odds of having 0-10 absences among NDI New Mexico participants was 2.92 times higher than among students who did not participate in NDI New Mexico Advanced Training programs. Due to incomplete demographic data in 2018-2019, adjusted rates were not calculated for that year.

Table 3. Multivariable analysis of the relationship between NDI participation and school attendance among students, grades 4 – 9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts across three academic years

Participation in NDI New Mexico's Advanced Training Programs	Unadjusted Odds Ratio 0 10 days absent (95% CIs)	Adjusted Odds Ratio*** 0 10 days absent (95% CIs)
AY 2015-2016	(n = 44,067)	(n = 44,067)
Not a participant	1.00	1.00
Participant	1.01 (0.68-1.49)	1.36 (0.90-2.04)
AY 2016-2017	(n = 42,603)	(n = 42,603)
Not a participant	1.00	1.0
Participant	3.48 (2.11-5.73)**	2.40 (1.44-4.00)**
AY 2017-2018	(n = 43,294)	(n = 43,294)
Not a participant	1.00	1.00
Participant	2.41 (1.32-4.39)**	2.92 (1.59-5.36)**

* Significance level is $p \leq 0.05$, ** Significance level $p \leq 0.005$

*** Odds ratio estimates were adjusted for school district, grade level, gender, race/ethnicity, school lunch program participation, presence of disability, and ELL status. Note: AY 2016-2016 was not adjusted for gender as it did not meet criteria for confounding.

In AYs 2015-2016 and 2016-2017, there was evidence that the association between NDI New Mexico participation and school attendance was different depending on free-and-reduced lunch program participation status. In 2015-2016, NDI New Mexico participants who were participating in the free-and-reduced lunch program had 1.95 times statistically higher odds (adjusted OR = 1.95, $p = 0.014$, 95% CI 1.14-3.34) of having 0-10 absences compared to non-participants. This relationship was not significant among NDI New Mexico participating students who did not participate in the free-and-reduced lunch program (adjusted OR = 0.84, $p = 0.581$, 95% CI 0.44-1.58). In AY 2016-2017, among NDI New Mexico participants who were in the free-and-reduced lunch program, NDI New Mexico participation was associated with 2.87 times statistically higher odds of having better attendance compared to non-participants who were in the lunch program. In contrast, NDI New Mexico participants who were not in the free-and-reduced lunch program had 1.61 times higher odds (adjusted OR = 1.61, $p = 0.314$, 95% CI 0.64-4.06) of having 0-10 absences when compared with non-participants. This association was not statistically significant.

In AY 2017-2018, disability status was found to modify the association between NDI New Mexico participation with school attendance. Among students who were not classified as having a disability, being an NDI New Mexico participant was associated with 3.63 times statistically higher odds of having 0-

10 absences when compared with non-participants. Among students who were categorized as having a disability, NDI New Mexico participation was associated with lesser odds of having better attendance compared to non-participants. This association however was not statistically significant.

Test Scores - Math

In AY 2015-2016, nearly one-third (31.8%) of NDI New Mexico participants met proficiency in math, compared with 19.4% of students who did not participate in NDI New Mexico Advanced Training programs. NDI New Mexico participants had 1.95 greater odds of being proficient in math compared with non-participants (Table 4). In AY 2016-2017, one-third (33.2%) of NDI New Mexico participants met proficiency in math, compared with 18.3% of students who did not participate in NDI New Mexico Advanced Training programs. NDI participants had 2.20 greater odds of being proficient in math than non-NDI participants. In AY 2017-2018, 31.1% of NDI New Mexico Advanced Training program participants met proficiency in math, compared with 20.3% of students who did not participate. NDI New Mexico participants had 1.77 greater odds of being proficient in math than non-participants. In AY 2018-2019, more than one-quarter (26.5%) of NDI New Mexico participants met proficiency in math, compared with 19.4% of students who did not participate. NDI New Mexico participants in AY 2018-2019 had 1.50 times greater odds of being proficient in math than non-participants.

Table 4. Assessing the association between NDI New Mexico Advanced Training program participation and math proficiency among students, grades 4-9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, across four academic years

Participation in NDI New Mexico's Advanced Training Programs	Below proficient in Math	Proficient in Math	Total	Odds Ratios (95% CIs)
AY 2015-2016	(n = 37,502)	(n = 9,089)	(n = 46,591)	
Not a participant	37,247 (80.59%)	8,970 (19.41%)	46,217	1.00
Participant	255 (68.18%)	119 (31.82%)	374	1.94 (1.56-2.41)**
AY 2016-2017	(n = 38,494)	(n = 8,778)	(n = 47,272)	
Not a participant	38,192 (81.57%)	8,628 (18.43%)	46,820	1.00
Participant	302 (66.81%)	150 (33.19%)	452	2.20 (1.81-2.68)**
AY 2017-2018	(n = 38,343)	(n = 9,819)	(n = 48,162)	
Not a participant	38,064 (79.70%)	9,693 (20.30%)	47,757	1.00
Participant	279 (68.89%)	126 (31.11%)	405	1.77 (1.44-2.19)**
AY 2018-2019	(n = 37,312)	(n = 9,022)	(n = 46,334)	
Not a participant	37,037 (80.59%)	8,923 (19.41%)	45,960	1.00
Participant	275 (73.53%)	99 (26.47%)	374	1.50 (1.19-1.89)**

** Significance level $p \leq 0.005$

When adjusting for demographic factors, the relationship between NDI New Mexico participation and math proficiency remained statistically significant, although the magnitude declined slightly. Odds of testing proficient in math were 1.67 times higher in AY 2015-2016, 2.08 times higher in AY 2016-2017, and 1.80 times higher in AY 2017-2018 among NDI New Mexico participants compared with non-participants (Table 5). Demographic data were incomplete for the AY 2018-2019 period. Therefore, the potential confounding effects of demographics on the association of NDI participation and proficiency in math was not assessed for that year.

Table 5. Multivariable analysis of the relationship between NDI participation and standardized math proficiency among students, grades 4 – 9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, across three academic years

Participation in NDI New Mexico's Advanced Training Programs	Unadjusted Math Proficiency (n = 9,089)	Adjusted Math Proficiency (n = 9,089)
AY 2015-2016		
Not a participant	1.00	1.00
Participant	1.94 (1.56-2.41)**	1.67 (1.31-2.14)**
AY 2016-2017		
	(n = 8,778)	(n = 8,778)
Not a participant	1.00	1.00
Participant	2.20 (1.81-2.68)**	2.08 (1.66-2.60)**
AY 2017-2018		
	(n = 9,819)	(n = 9,819)
Not a participant	1.00	1.00
Participant	1.77 (1.44-2.19)**	1.80 (1.43-2.28)**

** Significance level $p \leq 0.005$

*** Odds ratio estimates were adjusted for school district, grade level, gender, race/ethnicity, school lunch program participation, presence of disability, and English language learner status.

Test Scores - Reading

In AY 2015-2016, 42.8% of NDI New Mexico Advanced Training program participants met proficiency for reading, compared with 24.5% of students who did not participate in NDI programs (Table 6). NDI participants had 2.30 greater odds of being proficient in reading than non-participants. In AY 2016-2017, 42.5% of NDI New Mexico participants met proficiency in reading, compared with 24.2% of students who did not participate. NDI New Mexico participants had 2.31 greater odds of being proficient in reading than non-participants. In AY 2017-2018, nearly 40% of NDI New Mexico Advanced Training program participants met proficiency in reading, compared with 27.1% of students who did not participate. NDI New Mexico participants had 1.79 greater odds of being proficient in reading than non-participants. In AY 2018-2019, 46.1% of NDI New Mexico participating students were proficient at reading compared with

27.2% of non-participants. NDI New Mexico participants had 2.29 greater odds of being proficient in reading than non-participants.

Table 6. Assessing the association between NDI New Mexico Advanced Training program participation and reading proficiency among students, grades 4-9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, across four academic years

Participation in NDI New Mexico's Advanced Training Programs AY 2015-2016	Below proficient in Reading (n = 34,505)	Proficient in Reading (n = 11,289)	Total (n = 45,794)	Odds Ratios (95% CIs)
Not a participant	34,291 (75.50%)	11,129 (24.50%)	46,042	1.00
Participant	214 (57.22%)	160 (42.78%)	374	2.30 (1.87-2.83)**
AY 2016-2017	(n = 35,119)	(n = 11,375)	(n = 46,494)	
Not a participant	34,865 (75.71%)	11,187 (24.29%)	46,052	1.00
Participant	254 (57.47%)	188 (42.53%)	442	2.31 (1.91-2.79)**
AY 2017-2018	(n = 34,657)	(n = 12,931)	(n = 47,588)	
Not a participant	34,417 (72.93%)	12,772 (27.07%)	47,189	1.00
Participant	240 (60.15%)	159 (39.85%)	399	1.79 (1.46-2.18)**
AY 2018-2019	(n = 33,415)	(n = 12,559)	(n = 45,974)	
Not a participant	33,217 (72.83%)	12,390 (27.17%)	45,607	1.00
Participant	198 (53.95%)	169 (46.05%)	367	2.29 (1.87-2.82)**

** Significance level $p \leq 0.005$

In AY 2015-2016, after adjusting for demographic variables, NDI New Mexico participants had 2.09 times statistically higher odds of testing proficient for reading compared with non-participants (Table 7). The adjusted odds ratio remained statistically significant in AY 2016-2017 at 2.01, and in AY 2017-2018 at 1.52. Demographic data were incomplete for the AY 2018-2019 period. Therefore, the potential confounding effects of demographics on the association of NDI participation and proficiency in reading was not assessed for that year.

Table 7. Multivariable analysis of the relationship between NDI participation and standardized reading test proficiency among students, grades 4 – 9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, across three academic years

Participation in NDI New Mexico's Advanced Training Programs AY 2015-2016	Unadjusted Reading Proficiency (n = 11,289)	Adjusted Reading Proficiency (n = 11,289)
Not a participant	1.00	1.00
Participant	2.30 (1.87-2.83)**	2.09 (1.66-2.63)**
AY 2016-2017	(n = 11,375)	(n = 11,375)
Not a participant	1.00	1.00
Participant	2.31 (1.91-2.79)**	2.01 (1.63-2.49)**
AY 2017-2018	(n = 12,931)	(n = 12,931)
Not a participant	1.00	1.00
Participant	1.79 (1.46-2.18)**	1.52 (1.21-1.90)**

** Significance level $p \leq 0.005$

*** Odds ratio estimates were adjusted for school district, grade level, gender, race/ethnicity, school lunch program participation, presence of disability, and English language learner status.

Test Scores - Science

In AY 2015-2016, two-thirds of NDI New Mexico Advanced Training program participants met proficiency in science, compared with 44.7% of students who did not participate (Table 8). NDI participants had 2.45 times greater odds of being proficient in science than non-participants. In AY 2016-2017, half (49.5%) of NDI New Mexico participants met proficiency in science, compared with 38.5% of students who did not participate in NDI New Mexico Advanced Training programs. NDI participants had 1.56 greater odds of being proficient in science than non-participants. In AY 2017-2018, more than half (53.0%) of NDI New Mexico participants met proficiency in science, compared with 40.7% of students who did not participate in NDI New Mexico Advanced Training programs. NDI participants had 1.64 greater odds of being proficient in science than non-participants. In AY 2018-2019, 58.7% of NDI New Mexico participants met proficiency in science, compared with 38.1% of students who did not participate in NDI New Mexico Advanced Training programs. NDI participants had 2.31 times higher odds of being proficient in science than non-participants.

Table 8. Assessing the association between NDI New Mexico Advanced Training program participation and science proficiency among students, grades 4-9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, across four academic years

Participation in NDI New Mexico's Advanced Training Programs AY 2015-2016	Below proficient in Science (n = 8,938)	Proficient in Science (n = 7,274)	Total (n = 16,212)	Odds Ratios (95% CIs)
Not a participant	8,887 (55.34%)	7,173 (44.66%)	16,060	1.00
Participant	51 (33.55%)	101 (66.45%)	152	2.45 (1.75-3.44)**
AY 2016-2017	(n = 9,878)	(n = 6,226)	(n = 16,104)	
Not a participant	9,778 (61.47%)	6,128 (38.53%)	15,906	1.00
Participant	100 (50.51%)	98 (49.49%)	198	1.56 (1.18-2.07)**
AY 2017-2018	(n = 9,755)	(n = 6,720)	(n = 16,475)	
Not a participant	9,684 (59.32%)	6,640 (40.68%)	16,324	1.00
Participant	71 (47.02%)	80 (52.98%)	151	1.64 (1.19-2.27)**
AY 2018-2019	(n = 9,566)	(n = 5,923)	(n = 16,207)	
Not a participant	9,511 (61.94%)	5,845 (38.06%)	15,356	1.00
Participant	55 (41.35%)	78 (58.65%)	133	2.31 (1.63-3.26)**

** Significance level $p \leq 0.005$

When adjusting for demographic factors, NDI New Mexico participants had 2.51, 1.45, and 1.41 times higher odds of meeting proficiency in science compared to non-participants in AY 2015-2016, AY 2016-2017 and AY 2017-2018, respectively (Table 9). This difference was statistically significant in the first two academic years, but not in 2017-2018. Demographic data were incomplete for the AY 2018-2019 period. Therefore, the potential confounding effects of demographics on the association of NDI participation and proficiency in science was not assessed for that year.

Table 9. Multivariable analysis of the relationship between NDI New Mexico participation and standardized science test proficiency among students, grades 4 – 9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, across three academic years

Participation in NDI New Mexico's Advanced Training Programs AY 2015-2016	Unadjusted Science Proficiency (n = 7,274)	Adjusted Science Proficiency (n = 7,274)
Not a participant	1.00	1.00
Participant	2.45 (1.75-3.44)**	2.51 (1.71-3.68)**
AY 2016-2017	(n = 6,226)	(n = 6,226)
Not a participant	1.00	1.00
Participant	1.56 (1.18-2.07)**	1.45 (1.06-1.99)*
AY 2017-2018	(n = 6,720)	(n = 6,720)
Not a participant	1.00	1.00
Participant	1.64 (1.19-2.27)**	1.41 (0.98-2.03)

* Significance level $p \leq 0.05$; ** Significance level $p \leq 0.005$

*** Odds ratio estimates were adjusted for school district, grade level, gender, race/ethnicity, school lunch program participation, presence of disability, and English language learner status.

Delinquent Behavior at School

The NM PED data on disciplinary infractions were aggregated for all four academic years for students who were in grades 4 to 9 during any of the school years. Students were categorized as either having participated in NDI New Mexico Advanced Training programs during at least one of the academic years from 2016 to 2019 or as never having participated in these programs. Among the 85,422 students included in the analysis, 1,012 (1.2%) students participated in NDI New Mexico Advanced Training programs during at least one academic year (Table 10). A majority (87.7%) of the students did not have documented delinquent behaviors during the four school years included in this analysis. The prevalence of delinquent behavior among non-participating students (12.3%) was approximately 1.7 times greater than among students who participated in NDI Advanced Training programs for at least one of the four years (7.1%). Without adjusting for other factors, students who were part of NDI New Mexico Advanced Training programs had 1.2 times significantly lower odds of having 1 or more disciplinary infractions compared to students who never participated.

Multiple demographic factors were found to be statistically associated with both NDI New Mexico participation and having disciplinary infractions on record. These factors were school district, gender, ethnicity, participation in the school lunch program, presence of disability, and having an English language learner status. After adjusting for all these factors, students who participated in NDI New Mexico

Advanced Training programs were found to have 2.7 times statistically lower odds of having disciplinary infractions on record than students who did not participate in the programs (Table 11).

Table 10. Assessing the association between NDI New Mexico Advanced Training program participation and presence of delinquent behavior among 85,422 students, grades 4-9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts, for AY 2015-2016, AY 2016-2017, AY 2017-2018, and AY 2018-2019.

Participation in NDI NM’s Advanced Training Programs	No delinquent behavior on record (n = 74,989)	1 or more delinquent behaviors (n = 10,433)	Total (n = 85,422)	Odds Ratios (95% CIs)
Never participated	74,049 (87.73%)	10,361 (12.27%)	84,410	1.00
Participated during at least 1 academic year	940 (92.89%)	72 (7.11%)	1,012	0.55 (0.43-0.70)**

** Significance level $p \leq 0.005$

Table 11. Multivariable analysis of the relationship between NDI participation and delinquent behavior among students, grades 4 – 9, in the Albuquerque, Española, Pojoaque, and Santa Fe Public School Districts for AY 2015-2016, AY 2016-2017, AY 2017-2018, and AY 2018-2019.

Participation in NDI NM’s Advanced Training Programs	Unadjusted Odds Ratio (95% CIs, p-value)	Adjusted Odds Ratio*** (95% CIs, p-value)
	Did not have delinquent behavior (n = 74,989)	Did not have delinquent behavior (n = 74,989)
Not a participant	1.00	1.00
Participant	0.55 (0.43-0.70)**	0.73 (0.57-0.93)*

* significance level is $p \leq 0.05$, ** significance level $p \leq 0.005$

*** Odds ratio estimates were adjusted for school district, grade level, gender, ethnicity, school lunch program participation, presence of disability, and ELL status.

Participation in the free-and-reduced school lunch program was found to modify the association between NDI New Mexico participation and having delinquent behaviors on record. Among non-participants of the free-and-reduced lunch program, NDI New Mexico participants had statistically lower odds of having a disciplinary infraction on record compared to non-participants. Among participants of the free-and-reduced lunch program, NDI New Mexico participants also had lower odds of having delinquent behavior on record compared to non-participants, however this association was not statistically significant.

Discussion

NDI New Mexico's Advanced Training programs focus on positive youth development among youth. The programs are more likely to serve girls, Hispanic students, students that are not English language learners, and students that are not living with disabilities. This evaluation demonstrated that participation in NDI New Mexico's Advanced Training programs was associated with higher odds of 10 or fewer absences (better attendance); higher odds of meeting proficiency on math, reading, and science standardized tests; and lower odds of having delinquent behavior at school. In general, these relationships held after adjusting for demographic factors. These relationships were, in some instances, modified by free-and-reduced-lunch status and disability status. For example, students that were participating in the free-and-reduced lunch program did not experience as strong an effect of NDI New Mexico participation on disciplinary infractions as students that were not in the free-and-reduced lunch program.

Limitations

Students who had missing student ID numbers and grade level data were excluded from the statistical analyses. Additionally, it is possible that students categorized as not having participated in NDI New Mexico programs were misclassified because they did not have student ID information in the NDI New Mexico dataset. Additionally, the incomplete dataset on demographics for AY 2018-2019 reduced the ability to control for demographics during that academic year.

And lastly, information on school infractions was provided aggregated for all four academic years. Therefore, we cannot know if the infraction occurred before, during, or after participation in NDI New Mexico Advanced Training programming.

Next steps

NDI New Mexico's mission is for children to "develop discipline, a standard of excellence, and a belief in themselves that will carry over into all aspects of their lives." Therefore, future research examining the impacts of NDI New Mexico's programs can include assessing participating students' perceptions of benefits of program participation. Potential benefits may include improved dance ability, improved confidence, improved self-efficacy, and/or improved academic achievement.

NDI New Mexico may also choose to further examine program implementation, non-participation and attrition. By determining whether programs were implemented as planned, NDI New Mexico can further identify the strengths and areas of improvement for the programs. For example, interviewing instructors and conducting focus groups with potential program participants or currently participating students can pinpoint potential challenges to participation in NDI New Mexico's programs. Additionally, longer-term outcomes, such as high school graduation rates and indicators of positive socioeconomic mobility, may also be evaluated as NDI New Mexico Advanced Training program participants reach young adulthood.

Conclusions

Participation in NDI New Mexico's Advanced Training programs was significantly associated with reduced odds of high absenteeism, increased odds of proficiency on standardized tests, and reduced odds of delinquent behaviors in school. Participation was positively associated with being female, being Hispanic, and participating in the free-and-reduced lunch program. Participation was negatively associated with being in higher grades, being a student with a disability, and having English language learner status. NDI New Mexico's Advanced Training programs are continuing to have positive impacts on youth from underserved communities in Albuquerque, Santa Fe, Española, and Pojoaque Valley school districts.

References

- Albuquerque Public Schools Indian Education Department. (July 2019). *Albuquerque Public Schools Tribal Education Status Report: 2018-2019*. Retrieved 18 August 2020. Available from <https://www.aps.edu/indian-education/documents/tribal-education-status-report-2018-2019>.
- Brown, M.J., Masho, S.W., Perera, R.A., Mezuk, B., & Cohen, S.A. (August 2015). Sex and sexual orientation disparities in adverse childhood experiences and early age at sexual debut in the United States: Results from a nationally representative sample. *Child Abuse & Neglect*, *46*, 89-102.
- Dube, S.R., Felitti, V.J., Dong, M., Chapman, D.P., Giles, W.H., & Anda, R.F. (March 2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics*, *111*, 3, 564-572.
- Doerschuk, P., Bahrim, C., Daniel, J., Kruger, J., Mann, J., & Martin, C. (2016). Closing the gaps and filling the STEM pipeline: A multidisciplinary approach. *Journal of Science Education and Technology*, *25*, 682-695. doi:10.1007/s10956-016-9622-8
- Garrido, E.F., Weiler, L.M., & Taussig, H.N. (2018). Adverse Childhood Experiences and Health-Risk Behaviors in Vulnerable Early Adolescents. *Journal of Early Adolescence*, *38*, 5, 661-680. doi: 10.1177/0272431616687671.
- Hedemann, E.R., & Frazier, S.L. (2017). Leveraging After-School Programs to Minimize Risks for Internalizing Symptoms Among Urban Youth: Weaving Together Music Education and Social Development. *Administration and Policy in Mental Health and Mental Health Services*, *16*, 4, 395-417. doi: 10.1007/s10488-016-0758-x.
- McFarland, J., Cui, J., Holmes, J., and Wang, X. (January 2020). *Trends in High School Dropout and Completion Rates in the United States: 2019* (NCES 2020-117). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved 2020 Aug 20 from <http://nces.ed.gov/pubsearch>.
- McLaughlin, K. A., & Sheridan, M. A. (2016). Beyond cumulative risk: a dimensional approach to childhood adversity. *Current Directions in Psychological Science*, *25*, 239-245. doi:10.1177/0963721416655883
- Montgomery, D. (2017). The rise of creative youth development. *Arts Education Policy Review*, *118*, 1, 1-18.
- New Mexico Department of Health. (November 2018). *Complete Health Indicator Report of Child Abuse and Neglect*. Retrieved on August 20, 2020 from New Mexico Department of Health, Indicator-Based Information System for Public Health website: <http://ibis.health.state.nm.us>.
- New Mexico Public Education Department. (July 2020.). *2020-2021 State and Federal Assessment Requirements FAQ*. Retrieved 20 August 2020. Available from

<https://webnew.ped.state.nm.us/wp-content/uploads/2020/07/Federal-Testing-Requirements-FAQ-7.7.20.pdf>

New Mexico Voices for Children. (June 2020). *KIDS Count Profiles for New Mexico, 2012-2020*. Accessed August 20, 2020. Retrieved from <https://www.nmvoices.org/wp-content/uploads/2020/06/NM-KC-profiles-1990-2020-web.pdf>

Roth, J.L. & Brooks-Gunn, J. (2015). Evaluating youth development programs: Progress and promise. *Applied Developmental Science, 20, 3*, 188-202.

Ullrich-French, S., McDonough, M.H., & Smith, A.L. (2013). Social Connection and Psychological Outcomes in a Physical Activity-Based Youth Development Setting. *Research Quarterly for Exercise and Sport, 83, 3*, 431-441.

U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2020). *Child maltreatment 2018*. Available from <https://www.acf.hhs.gov/cb/resource/child-maltreatment-2018>.