Native Americans with Disabilities: Postsecondary Education Outcomes

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This correlation study examined relationships between special education and standardized testing variables of 100 Arizona secondary school districts with Native American populations, and the archival records for postsecondary outcomes between 2012 and 2014 of students with disabilities, using archival data collected by the Arizona Department of Education. Logistic Regression analysis results indicated no statistically significant relationships between Arizona Instrument to Measure Success test scores and special education services funding in relationship to districts that participated in compliance reviews for state performance plan Indicators 13 and 14, detailed in the article. Recommendations included establishing time-lines for disaggregated data collection, Local Education Agencies should increase practicing student outcome improvement strategies, and more targeted and specific research using similar variables with disaggregated data sets.

Introduction and Background

Under the Individuals with Disabilities Education Act (IDEA) 2004 the transition from secondary education into postsecondary education or training must be included in an individualized education plan (IEP) for eligible students with a disability by age 16 (Wright, 2004). Additionally, in Arizona, IEPs that included a transition plan had to document graduation requirements for standardized testing results of the Arizona Instrument to Measure Success (AIMS) or AIMS-A (alternative). At the time in 2004, money was allocated to local education agencies (LEAs) as special education service funds (SESF) to assist with financing the special education services provided to students through their IEPs (Wright, 2004). Other federal requirements included all states develop and submit a State Performance Plan (SPP) to be reported on annually to the Office of Special Education Programs (OSEP). Currently, there continues to be 20 SPP Indicators. State Performance Plan Indicator 13 measures whether or not a student's IEP transition plan has appropriate postsecondary goals, services, and course of study to reasonably allow the student to meet his/her postsecondary IEP goals. The SPP Indicator 14 measures the outcomes of a student's engagement in postsecondary education, training, and employment one year after they left high school (State of Arizona, 2012). Up until 2014, every special education student in Arizona was measured under these federal guidelines, including Native American students (State of Arizona, 2016).

In 2012, the state of Arizona had the third highest population of Native Americans in the nation (353,386), which represented 5.6% of the population in Arizona as well as 1.2% of the U.S. population (U.S. Department of Commerce, 2013). Nationwide, more than 60% of the Native American population is identified as cognitively impaired and are twice as likely to be identified as having a specific learning disability (Snyder & Dillow, 2010). This population had the highest disproportion rates for special education in the nation, and (even with such high rates of disabilities) there is little literature on these student's and their postsecondary outcomes due to comparatively small population sizes (Adelman, Taylor, & Nelson, 2013). The Arizona Department of Education (ADE) has, however, attempted to measure outcomes of Native American students with disabilities under the guidelines of both IDEA (2004) and No Child Left Behind (NCLB) 2001(State of Arizona, 2012).

In the U.S., NCLB (2001) stipulated the implementation of statewide test-based accountability systems for public education, including special education. Since its implementation, this accountability system has been the main approach for states to measure student outcomes, including students with disabilities (Alexander, 2011; William, 2010). According to NCLB mandates, each school must test five specific racial groups: a) African American, b) Native American, c) Asian or Pacific Islander, d) Hispanic, and e) White. Three different categories of students are also to be tested: a) students with disabilities, b) students with limited English proficiency, and c) economically disadvantaged students (Kreig, 2011). Kreig, (2011) also indicated that schools that have fewer than 30 students in a particular demographic group automatically receive a score of *meeting* for the Annual Yearly Progress (AYP) for that group. This could partly explain why Native Americans, and especially Native Americans with disabilities, are often purposely not included in school wide data counts. Because of strict federal guidelines, the targeted achievement goals in Arizona set in place over a decade ago for AIMS under NCLB was designed to ensure all students were academically proficient by 2014; a standard that was not met (Garcia & Ryan,

2004; William, 2010). These targeted goals required Arizona students with disabilities to be measured specifically through AIMS scores and IDEA 2004 postsecondary outcomes. The SPP Indicators 13 and 14 allow Arizona to continue to meet IDEA postsecondary measurement requirements (State of Arizona, 2016).

State Performance Plan Indicator 13 measures the number of adolescents, aged 16 and above, with an IEP that contain: a) relevant measurable postsecondary goals, b) annual updates, c) developed from age appropriate transition assessments, d) transition services, e) outlined courses of study that allowed the student to meet postsecondary goals, and f) provide annual IEP goals related to the student's transition service needs. To meet compliance, there must also be evidence the student was invited to the IEP meeting, transition services were discussed, and relevant representatives were properly invited to the meeting. Additionally, SPP Indicator 14 keeps track of the percentage of adolescents no longer in secondary school that also had IEPs in effect at the time they left secondary school (Erickson, Noonan, Brussow, & Giplin, 2013; State of Arizona, 2012). It measures the participation in postsecondary settings one year after a student left or graduated from high school. These particular IDEA reauthorizations made the ultimate purpose of special education to be the preparation of children with disabilities for adulthood. However, some Native American cultures might continue to struggle with this process because of practices that place value on independent living, work environments, and consumerism. This has created disconnect and is still one of the major sources of postsecondary transition failure in the U.S. (Leake, Burgstahler, & Izzo, 2014; Smith & Routel, 2010).

The National Advisory Council on Indian Education's Annual Report to Congress (2013) stated that despite the likelihood of existing examples of student success, it was nearly impossible to prove their outcomes with limited to no available data, and as a result, best practices developed at some schools are not being replicated in others. Additionally, Adelman et al., (2013) pointed out that poor public school systems on Native American reservation land and lack of academic preparation for Native American students at the K12 level continue to be severe barriers to college readiness and postsecondary accomplishments. However, creating opportunities for students to maintain their cultural identity is an example of what does increase investment in their education and future postsecondary success (Adelman et al., 2013; Flynn, Duncan, & Jorgensen, 2012).

Because Native American students continue to "fall below the national norms for educational attainment," creating a new "data set that will count in quantitative discussions of educational attainment" could contribute to the "sparse research literature" (Akee & Yazzie-Mintz, 2011, p. 120). Further research that carefully represents Native American students is clearly needed to improve the quality of available data and allows for additional statistical analysis of the target population (Akee & Yazzie-Mintz, 2011).

Purpose of the Study

The purpose of this study was to assess whether relationships existed between SPP Indicator 14, AIMS test scores, and SESF from Arizona Local Education Agency's (LEAs) that participated in state compliance reviews for SPP Indicator 13 for Arizona Native American secondary students with disabilities. The findings of this study may provide results to inform the demand for the "results oriented education" that was to be provided through both the transition provisions of IDEA and through the measurement of a student's progress and

achievement in various assessments (Erickson et al., 2013, p. 2). Additionally, findings may be used to support whether the fulfillment of compliance reviews of SPP Indicator 13 IEPs, AIMS achievement, and SESF close the Native American student achievement gaps and most specifically for students with disabilities (Adelman et al., 2013; Akee & Yazzie-Mintz, 2011; Erickson et al., 2013; Flynn et al., 2012).

Theoretical Framework

Productivity theory emerged from the idea of productivity in the field of economics in 1928 by Cobb and Douglas (Pullen, 2009; Walberg & Tsai, 1983). It has been defined as "achieving the maximum output of a process with the use of minimum inputs" (Duyar, 2006, p. 1). Duyar, McNeal, and Kara (2006) stated that productivity theory could be applied to education and be used to analyze relationships between inputs and outputs in the same way economists analyze these same relationships. Harris (2007) discussed how too much input decreases efficiency, which decreases the production (outputs), which was the main concept behind productivity theory as designed by Cobb and Douglas (1928).

Productivity theory offers a framework to view the educational inputs and outputs of Arizona Native American students with disabilities in order to consider the "inconclusive policy implications" implemented at the primary and secondary school levels such as "scrupulous testing and accountability systems" associated with education productivity research (Duyar, 2006, p. 10). By placing school inputs or any major correlates of education into the formulation of productivity theory, research can demonstrate that if any factor is at a zero point then learning multiplied by zero yields zero, nullifying those factors, and if certain factors are fixed then adding more of a factor will lead to diminished returns to the factor if its exponent is less than one (Walberg & Tsai, 1983).

Literature Review

Standardized Assessment and Native American Education

Chakrabarti (2014) found that special education students and economically disadvantaged students showed lower performance in both high- and low-stakes subjects even when schools placed attention on areas that would cause reprimands from the government under NCLB; rather, this group of students showed decreased performance in all subject areas. In Arizona, public school math proficiency levels are the lowest for Native Americans students with disabilities. Additionally, charter school results indicate Native Americans are the lowest performing cohorts in both reading and math (Crane, Huang, and Barrat, 2011). Krieg's (2011) secondary quantitative regression analysis of state standardized math test scores found that the redirection of resources to specific racial groups caused decreased performance of students that were part of successful racial cohorts. Overall, schools with greater minority populations do not appear to be fairly ranked in test results and using a schools demographic profile has little predictive power in identifying gains in student achievement (Grissmer, Ober, and Beekman's, 2014).

Pressure to demonstrate student success on standardized testing for all racial groups has led to professional misconduct for teachers as well. A study conducted by Amrein-Beardsley, Berliner, and Rideau (2010) provided insight into cheating that occurs during

these standardized tests. In Arizona, more than 50% of respondents reported knowing a colleague who had cheated on AIMS, and more than 50% reported that they themselves engaged in cheating. Although achievement gaps insignificantly changed and students were unfairly measured as a result of the policies originating from NCLB, achievement test scores (such as AIMS) continued to be the current quantitative measure used in educational policy discussions by educators, politicians, the media, and the public (Nichols, Glass, & Berliner, 2012).

Native American Representation and Experiences in Special Education

Nakano and Watkins (2013) conducted a quantitative confirmatory factor analysis on one individual assessment instrument used nationwide, the Wechsler Intelligence Scale for Children -Fourth Edition (WISC-IV), because it was commonly used to identify Native American students eligible for special education services. Although subtest scores for the sample group were lower and less variable than the testing group used to norm the WISC-IV, the standard deviations of the sample group were able to demonstrate the appropriateness of this test to be used when identifying Native American students for special education services. However, racial-minority students are the greatest risk across all categories for special education identification (Sullivan & Bal, 2013).

Because concerns of overrepresentation of Native American students in special education, and minorities in general, is still at the fore-front of special education research Zhang, Katsiyannis, Ju, and Roberts (2014) conducted a multilevel model quantitative study and found that rates of overrepresentation in special education has remained relatively unchanged over the past 10 years. And, Native Americans total special education population percentage rates have increased the most. In addition to high numbers of special education placements, these researchers found a large portion of these students were not staying in school long enough to determine the effects of their special education placement and transition services.

Of all groups, Native American students are most severely overrepresented in discipline referrals and removal to alternative education settings. However, expulsions of students with disabilities were rare events and were highly unequally distributed across racial/ethnic categories in the Vincent, Sprague, and Tobin (2012) descriptive analysis quantitative study. The study determined that Hispanic students were overrepresented in exclusionary discipline actions such as in-school suspensions and out-of-school suspensions, whereas Native American students had the highest overrepresentation in removal to alternative education settings. A comprehensive analysis of the data determined that Native American students lost twice as many days of classroom time as compared to White students. The combination of high overrepresentation in special education, high dropout rates, and lost classroom time due to disciplinary actions had a profound and negative effect on the postsecondary outcomes of this population of students with no indication of improvement under current special education practices (Gritzmacher & Gritzmacher, 2010; Logan, Minca, &Adar, 2012; Vincent et al., 2012; Zhang et al., 2014).

Another similar quantitative study (Erickson et al., 2013) used bivariate linear regression to explore the relationship between compliance of SPP Indicator 13 in relation to SPP Indicator 14 at the LEA level. Results indicated the average rate of LEA compliance was 82% out of 100%. Ultimately, this study suggested SPP Indicator 13 compliance did not

guarantee a positive postsecondary outcome (SPP Indicator 14). However, it did improve a student's ability to identify appropriate postsecondary education options based on their skills and interests.

Native American Transition to and Retention in Postsecondary Settings

As of 2012, less than 1% of all students enrolled at postsecondary institutions were Native American, and only about half of these students who did enroll into a major college or university made it past the first year, compared to the general population, which had a 70% first year completion success rate (Flynn et al., 2012). Flynn et al. (2012) conducted a first of its kind qualitative emergent phenomenon study that explained Native American postsecondary transition and retention. This analysis revealed multiple barriers that continue to stand as roadblocks for college retention for these students. Some of the most prominent issues are interpersonal, financial, racism, discrimination, and inequality extending from historical trauma suffered by many generations of Native Americans at the hands of White settlers. This researcher also discovered students had feelings of inadequacy because of living on a reservation with the absence of student mentorships, which led to feelings of inferiority that reduced independence and caused feelings of isolation. This eventually evoked the inability to effectively take risks, which caused a total failure of students to identify themselves as even having a disability and getting services afforded to them. In contrast, Pellegrino, Sermons, and Shaver (2011) conducted a non-experimental quantitative study to assess the disproportionate number of students enrolled in universities and revealed Native Americans were proportionately represented despite having high national rates of special education services in secondary school settings. Studies reveal Native Americans do experience postsecondary success. However, understanding how these accomplishments are being achieved requires further research (Adelman et al., 2013).

Examples of studies outlining Native American success indicate that parent expectations show the biggest relationship to positive student outcomes. For example, Doren, Gau, and Lindstrom (2012) conducted a secondary analysis quantitative linear logistic regression to measure these motivations. A student's likelihood of graduating with a diploma, attending postsecondary education facilities, and obtaining a paid job were all significantly and positively related to parent expectations. Schmidt and Akande (2011) used a qualitative phenomenological research design and found that key findings for student success included having other college programs available such as Native languages, Native artwork, and cultural events that were in place more often than on traditional university campuses. Counseling and tutoring occurred more often on these tribal campuses and were successful in providing identity building and community. Having positive support systems better prepares Native Americans for postsecondary college success (Andrade, 2014). Native American students who do not have systems of support are typically left on their own to seek services and do not fare as well (Applequist, Keegan, Benitez, Schwalbach, 2012).

Research Methods

A quantitative correlational design was used to retrospectively examine archival data through non-experimental correlation in order to determine natural relationships of select variables for Arizona Native American students with disabilities (Field, 2009; Seber & Lee, 2012).

The data that was collected for each variable was a result of policy and procedures that had already taken place in Arizona for Native American students with disabilities between the 2012 and 2014 school years (State of Arizona, 2012). The following research questions guided this study:

Q1. What relationships exist between AIMS scores, SESF, and SPP Indicator 14 outcomes?

Q2. Do SESF and AIMS scores predict SPP Indicator 14 outcomes?

Hypotheses

$H1_0$. No significant relationships exist between AIMS scores, SESF, and SPP Indicator 14 outcomes.

$H1_a$. Significant relationships exist between AIMS scores, SESF, and SPP Indicator 14 outcomes.

$H2_0$. SESF and AIMS scores do not predict SPP Indicator 14 outcomes.

$H2_a$. SESF and AIMS scores significantly predict SPP Indicator 14 outcomes.

The study variables that were representative of programs and policies included two predictor variables from LEAs that participated in compliance reviews for SPP Indicator 13, and provided data for students AIMS test scores and SESF (Erickson et al., 2012; State of Arizona, 2012). The criterion variable, SPP Indicator 14, provided representation of what students various outcomes were one year after they left secondary school and had subsequently been contained by these programs and policies while in attendance at an Arizona LEA (State of Arizona, 2012).

Population and Sampling

The sampling frame came from Arizona school districts that were required by ADE to participate in SPP Indicator 13 compliance reviews. The target population was derived from approximately 55,312 Native American K12 students in Arizona, and four thousand eight hundred and twenty-eight or 10.1% of these students were enrolled in special education (ADE, 2015a). All LEAs with K12 Arizona Native American students with disabilities that received SESF, participated in state compliance reviews for SPP Indicator 13, had recorded AIMS assessment scores, and sent out requests for replies to former students SPP Indicator 14 surveys one year after leaving secondary school between 2012 and 2014 were included in the sampling frame. The LEA public data records selected for the study represented schools in all three types of school districts in Arizona; rural, urban, and reservation land. Because the main goal of this study is to focus on particular characteristics of a population a purposive homogenous sampling was used to select the LEAs needed for a statistically significant research sample and who meet the criteria of the sample frame. A random selection sampling could not occur due to the limited number of districts that met the study qualifications. The G* power 3.1 software was used to conduct *a priori* sample size for regression (medium effect size =.15; power of .95; alpha of .05), which indicated that a minimum sample of 107 LEAs was adequate for rigorous statistical analysis (Field, 2009). However, only 100 districts in Arizona met these qualifications.

Operational Definitions of Variables

The criterion variable used for this study was SPP Indicator 14. Because the ADE did not have disaggregated student data sets data had to be collected then coded to run a proper

statistical analysis. This ratio variable represented the range (0-100) of special education students that responded to the post school outcome (PSO) survey sent out by ADE to document SPP Indicator 14 outcomes one year after a student left high school between 2012 and 2014 school years. The first predictor variable was the student AIMS scores. The AIMS test score data represented an interval-level scale based on the reported scaled score for reading (500-900), writing (300-700), and math (300-700) (ADE, 2015c). The second predictor variable was SESF. This study measured SESF in terms of total dollars allocated per year per year to an LEA as an interval-level variable (1-10M million). Indicator 13 compliance reviews were used as a qualifier for the study variables only. Individual Indicator 13 results could not be included due to there was no numerical data recorded at the state level at this point in time.

Data Source, Procedure. , and Analysis

Archival data were collected from ADE for LEAs with Native American students identified as having had an IEP the year they exited high school during the 2012 through 2014 school years. These variables came from a sample of LEAs selected for compliance reviews of SPP Indicator 13. This data was publicly available on the ADE main website. However, at the time, ADE did not have a system in place to attach the results of this monitoring to any individual student accountability information system number. This data was stored at local LEAs, which were not required to keep this data on file, making the process of locating the actual results a burden to school districts at the time (A. Trollinger, personal communication, June 23, 2015; R. Hagstrom, personal communication, August 5, 2015).

A final purposeful sample of 100 LEAs were selected for this study determined by the size of the Native American student populations that resided within a school district and data that were available for these districts. This sample size, 100, was seven districts below the required sample size, 107, from the power analysis, but rigorous enough to conduct hypothesis testing (Field, 2009). The data collected from ADE public websites was imported into SPSS for analysis. The SPP Indicator 14 outcomes reported for selected LEAs were confirmed to include resident Native American populations from 2012-2014 (ADE 2015a, ProximityOne, 2015), and the criterion variable, SPP Indicator 14 was coded for ordinal regression categorization for three values (1= less than 73%, 2= 73%, and 3= above 73%).

After data collections, SPP Indicator 14 variables had to be dummy coded, which allowed for data to be changed into numerical values that could be used in regression models for initial parametric analysis. The number one was used with a separate column apart from its own reference category using zero: (1) competitive employment (youth who have worked for pay at or above minimum wage with others who are nondisabled for a period of 20 hours a week for at least 90 days any time in the year since leaving high school), (0) non-competitive employment, (1) higher education (youth who have been enrolled full or part time in a community college, or a college/university for at least one complete term, at any time in the year since leaving high school), (0) no-higher education, (1) some other employment (youth who have worked for pay or been self-employed for a period of at least 90 days at any time in the year since leaving high school), (0) no other employment, (1) other postsecondary education or training (youth enrolled full or part time at least one complete term at any time in the year since leaving high school in an education training program), (0) no other postsecondary education or training, and (1) other, (0) no other (youth that do not

meet any ADE post secondary requirements).

The AIMS test scores and SESF archival data were retrieved from ADE public data sets. The amount of SESF an LEA received was determined by the population of students with disabilities at each LEA and documented within the ADE auditor's office (State of Arizona, 2012). Initially, Histograms and Q-Q plots were visually inspected for linearity and normality, which were confirmed by a Shapiro-Wilk analysis. Additionally, a Durbin-Watson analysis and Variance Inflation Factors were used. These tests revealed that the assumptions for parametric methods were not met therefore nonparametric methods were required for hypothesis testing (Field, 2009).

Assumptions

The first study assumption was that LEAs followed all of the NSTTAC checklist compliance requirements of SPP Indicator 13 when creating postsecondary transition plans for Native American students with disabilities. At the time, there was no link to LEAs and student accountability information system number numbers to verify compliance requirements were met. A second assumption was that LEAs who received SESF had Native American students with disabilities that actually took the AIMS test. Although this was a state requirement, a student may not have been available to take the test for any given reason. A third assumption was that students returned and/or completed and returned all sections of their SPP Indicator 14 survey after it was received from their former high school. A final assumption was that LEAs kept appropriate special education records for ESS monitoring and ADE was able to accurately collect this data and archive it.

Limitations

The first limitation of this study is that it only represented Arizona LEAs with Native American students with disabilities that had participated in secondary special education programs. The second limitation was that this study did not address all possible combinations of special education policies and practices implemented for Arizona Native American students, nor was it reflective of Native American students participating in other state's special education programs. A third limitation is that data collection needed for each research variable was dependent upon an LEAs ability to have followed proper procedures for ADE special education documentation, which may have limited the sample of LEAs examined and possibly excluded schools that may have made a statistical impact on results. A fourth limitation was that results could not be generalized to all students in Arizona secondary special education programs (regardless if they were held to the same standards) even though outcomes may in fact have been similar for other racial cohorts. The final limitation was that the state of Arizona did not have disaggregated data sets to determine individualized results for the variables used in this study.

Delimitations

Archival data were delimited to student records for LEAs with Native American secondary student populations with disabilities stored at ADE and who attended LEAs between 2012 and 2014. The data were also delimited to the state of Arizona, which included 230 school

districts, 406 charter schools, and 13 joint technological education districts (ADE, 2015b). Additionally, the data sets were not reported by race by ADE and it was not possible to distinguish the measure of school district data into racial cohorts (only by school districts that had Native American student populations), which ranged from .10% to 99%. The last delimitation included archived data that came from each LEA that participated in compliance reviews for SPP Indicator 13 IEPs. The ADE had on record the results of AIMS test scores, the amount of SESF LEAs received, and the results of each LEAs SPP Indicator 14 survey results.

Results

A final purposeful sample of 100 LEAs were selected for this study determined by the size of the Native American student populations that resided with in a school district and data that were available for these districts. This sample size, 100, was seven districts below the required sample size, 107, from the power analysis, but rigorous enough to conduct hypothesis testing (Field, 2009). The data collected from ADE public websites was imported into SPSS for analysis. The SPP Indicator 14 outcomes reported for selected LEAs were confirmed to include resident Native American populations from 2012-2014 (ADE, 2016; ProximityOne, 2015), and the criterion variable, SPP Indicator 14 was coded for ordinal regression categorization for three values (1= less than 73%, 2= 73%, and 3= above 73%).

Data assumptions

Histograms and Q-Q plots were visually inspected for linearity and normality were found to be nonlinear and not normally distributed, which was also confirmed by a Shapiro-Wilk analysis ($p = .000$). Therefore, assumptions for normality and linearity were violated (Field, 2009). Additionally, a Durbin-Watson analysis (.963) confirmed independence of errors was not met. Variance Inflation Factors were less than five (1.009), so it was determined that multicollinearity existed between the two predictor variables. Therefore, as the assumptions for parametric methods were not met, nonparametric methods, such as logistic ordinal regression, were required for hypothesis testing.

Spearman's Rho correlation, nonparametric analysis resulted in no statistically significant relationships between the two predictor variables, AIMS scores and SESF, and the criterion variable; SPP Indicator 14 outcomes (see Table 1). Therefore, $H1_0$ could not be rejected and no support existed for the alternate hypothesis.

Table 1
Spearman Correlation: Predictor Variables and SPP Indicator 14 outcomes

Variable	PV1	PV2	CV
PV1. AIMS scores	-	-.920	.695
PV2. Special Education Services Funding (SESF)		-	.456
CV. State Performance Plan Indicator (SPP) 14 outcomes			-

Results of ordinal logistic regression analysis, a nonparametric test, indicated there were no significant predictors of SPP Indicator 14 outcomes (see Table 2). Therefore, $H2_0$ cannot be rejected.

Table 2
Ordinal Logistic Regression: Predictor variables and SPP Indicator 14 outcomes

	β	SE	Wald.	Sig.	95% CI LL	UL
SPP14 = 1	-3.992	3.651	1.196	.274	-11.148	3.164
SPP14 = 2	.444	3.607	.015	.902	-6.625	7.513
AIMS	-.003	.007	.208	.648	-.017	.010
SESF	-9.617E-8	1.023E-7	.883	.347	-2.97E-7	1.044E-7
R^2_N	.012					

Note. N = 100; **p < .05*

Evaluation of Findings

The results of hypothesis 1 indicated there were no statistically significant correlations between the variables. These findings indicated that special education students AIMS test scores and the amount of SESF provided to Arizona school districts were not statistically related to the SPP Indicator 14 postsecondary outcomes of special education students one year after they left high school. Additionally, the results of hypothesis 2 indicated that special education students AIMS test scores and the amount of SESF provided to a school district did not account for SPP Indicator 14 outcomes for students one year after they left high school.

Hypothesis 1. No significant relationships were found among AIMS, SESF, and SPP Indicator 14 outcomes. Similarly, this hypothesis outcome reflected findings from other researchers such as Chakarabarti (2014), who also found that regardless of school attention on areas of performance of special education (and schools overall), there were no demonstrated improvements in outcomes for students with disabilities. Additionally comparable, Logan et al. (2012) and Nichols et al. (2012) reported Native American students continued to fall into public data sets blended with other racial cohorts and data for that study were not disaggregated to determine usable results for targeted improvement. Likewise, Robinson-Zanartu et al., (2011) also found Native American sample sizes were too small to conduct analysis in relation to special education policies for Native American students. Moreover, Zhang et al. (2014) found no relationships between special education services and achievement of Native American students as similar to this hypothesis.

Researches who were able to disaggregate data, such as Yazzie-Mintz (2011), found that there were influential relationships between the input of Native American educators

(which included special education) and the performance outcomes of Native American students on secondary national standardized test measures. Additionally, using different variables and disaggregated data, Crane, Huang, Barrat, & Regional Education Laboratory West, (2011) discovered significant relationships between AIMS, special education services, and outcomes for Native American students that the ADE could use as improvement strategies that close achievement gaps. Finally, Krieg (2011), again using disaggregated data, also established that redirecting special education resources to specific racial groups decreased performance for students that were already part of racial cohorts with documented improvements. Therefore, because the current study found no relationships between special education variables and student outcomes and these aforementioned did find results, more targeted and specific research using like variables with disaggregated data sets is desperately needed.

Hypothesis 2. Using disaggregated data sets in the current study, SESF and AIMS scores did not predict SPP Indicator 14 outcomes, which was similar to Sullivan and Bal's (2013) findings. These researchers found no predictive measures due to limited data for individual Native American students. The population was too small therefore this group was excluded from analysis. Furthermore, the hypothesis 2 outcome determined no predictive values for Native American students with disabilities and their outcomes because they were excluded from disaggregated public data sets, and no statistically significant outcomes could be determined. This was similar to Grissmer et al. (2014) who determined short-term achievement gains were less reliable but predictive when analyzing student achievement gains due to the inability to properly identify specific racial group outcomes from available data sets. Likewise, Cabrera et al. (2012) also determined there were predictive values between minority special education student AIMS scores and student outcomes. However, the authors of that study found inconsistencies in data and could not include Native American students, which was similar to the hypothesis 2 outcome. In addition, the hypothesis 2 outcome was reflective of the study conducted by Grissmer et al., (2014) where there were no predictive values of the outcomes for students with disabilities when analyzing statewide achievement data. Finally, in this current study, running tests using more schools to gain more significance in predictive values was not possible due to the fact only 100 LEAs reported enough data to ADE.

In contrast to hypothesis 2 findings in the current study, other researchers were able to use disaggregated data and other variables to find some statistical relationships. Leake et al. (2011) found significant statistical values in unknown predictors of why students with disabilities were less likely to enroll in postsecondary education and employment opportunities. Andrade (2014) found that good mentoring relationships were able to partially predict outcomes of Native American student achievement, but could not define what other factors did; however, Schmidt and Akande (2011) discovered specific individual predictors such as resiliency, school counselor support, and positive sociocultural support led to positive postsecondary outcomes for Native Americans. Gritzmacher and Gritzmacher (2010), Logan et al. (2012), and Vincent et al., (2012) were also able to identify profound predictors of outcomes for Native Americans in special educations. Although not favorable, factors included high representations in special education, high dropout rates, and lost classroom time due to disciplinary action.

Two final contrast studies came from Erickson et al. (2013) and Landmark and Zhang (2014), to which SPP Indicator 13 transition requirements were significantly predictive of

failed benefits to students with disabilities. Finally, Sullivan and Bal (2013) found predictive factors in special education practices that led to negative outcomes for Native Americans. Because these studies were able to use disaggregated data and other variables to find some relationships, whereas hypothesis 2 findings in the current study indicated no relationships, again, future targeted and specific research using like variables with disaggregated data sets is necessary.

Implications

Current legislation for special education requires states and their LEAs provide "results orientated education" through both transition provisions of the IDEA as well as through measures of student progress and achievement in various assessments (Erickson et al., 2013, p. 2). The results of the study were able to provide insight into available data sets for Native Americans with disabilities.

     Hypothesis 1. The first implication suggests that when the state of Arizona followed legislative procedures under federal law for IDEA and NCLB, there were no significant statistical relationships for Native American students with disabilities one year after they transitioned out of high school (Erickson et al., 2013; Landmark & Zhang, 2014).   This implies that the outcomes of Native American students with disabilities, once they exited Arizona public high schools, are not related to the amount of inputs of the current special educational system (Sullivan & Bal, 2013). One possible implication is that other factors affected these outcomes for Native American students with disabilities one year after they left high school such as family, cultural connections, and support (Akee & Yazzie-Mints, 2011; Flynn et al., 2012; Krieg, 2011; Landmark & Zhang, 2014; Yazzie-Mintz, 2011; Zhang et al., 2014). Separate from the testing and postsecondary federal mandates imposed on states, a second implication is that the amount of funding provided to an LEA for special education services was not related to outcomes of Native American students with disabilities. It was likely other financial factors were related to student outcomes. Flynn et al. (2012) stated that budget cuts, underrepresentation, inappropriate multirole tasking, and lack of formal education for professional roles negatively impacted student outcomes. However, Flynn et al. (2012) further showed that despite high rates of special education numbers on a national level, Native Americans were proportionately represented in postsecondary school settings, so likely other factors were involved in Native American student transitions to higher education.

     Hypothesis 2. Study results implicated there was a lack of disaggregated data sets for Native American students with disabilities and it could not be determined if there was an impact from AIMS testing and SESF in the state of Arizona. As noted by Akee and Yazzie-Mintz (2011) and Erickson et al. (2013), it is likely a better system of data collection would allow LEAs to improve analysis of underrepresented populations. Native American student populations were blended into larger data sets of school and state populations, which demonstrates how limited research for this target population was once they exit high school, making it difficult to know which special education and school inputs made an impact on Native American student outcomes (Akee & Yazzie-Mintz, 2011).   Because of these implications, it is likely that other factors predicted both the negative and positive outcomes of Native Americans with disabilities, and factors such as truancy, low socioeconomic status, and low academic achievement could not be eliminated (Akee & Yazzie-Mints, 2011; Flynn

et al., 2012; Krieg, 2011; Landmark & Zhang, 2014; Yazzie-Mintz, 2011; Zhang et al., 2014).

Recommendations and Future Research

Multiple recommendations from previous research, and this study, call for more data sets and research for Native American students (Akee & Yazzie-Mintz, 2011; Trainor, Morningstar, Murray, & Hyejung, 2013). One recommendation for practitioners is that Arizona special educators and administrator set policy at the LEA level and document and share information about student outcomes with their communities, and not solely report this data to the ADE. Arizona should provide disaggregated public data as well as set a timeline to create a data collection system for SPP Indicators 13 and 14 that can specifically track Native American students with disabilities outcomes under the IDEA postsecondary transition requirements.

Future research should include a quantitative correlation study to identify specific transition practices directly related to or to predict individual categories of student outcomes for Native American students with disabilities as a distinct target population. This study may provide results-orientated data aligned with the requirements of IDEA under OSEP and the 2001 President's Commission on Excellence in Special Education, which initially called for changes from process-driven to outcome-driven results (Erickson et al., 2013).

Expansions of this study could conduct a quantitative study using logistical regression to predict the outcomes of AIMS, SESF, and SPP Indicator 14 for Native American students with disabilities separate from other racial cohorts once state data are disaggregated. There have been graduation requirements attached to AIMS testing since the early 2000s and a 100% compliance mandate on SPP Indicator 13 since 2010, yet neither of these special education provisions could be statistically measured in relationship to each other for its usefulness under SPP Indicator 14. Meanwhile, Native American educational attainment rates continued to be one of the worst in Arizona and the country (Adelman et al., 2013; Akee & Yazzie-Mintz, 2011; Flynn et al., 2012).

Conclusions

Findings from this study implied other positive factors (e.g. family and cultural support) may be responsible for Native American students with disabilities outcomes because Native Americans, overall, were proportionately represented in postsecondary settings (Flynn et al., 2012). Negative aspects (e.g. truancy and low socio economic status) could not be eliminated as factors for student outcomes (Akee & Yazzie-Mints, 2011; Flynn et al., 2012; Krieg, 2011; Landmark & Zhang, 2014; Yazzie-Mintz, 2011; Zhang et al., 2014). It is further implied that the likely hood of better data collection systems would provide better opportunities for analysis of key components in special education programming in Arizona.

Recommendations for practice call for the implementation of policy at the LEA level and to construct support systems that could possibly allow Native American children to achieve better outcomes without having to rely on the state. The state level recommendation indicated the need for a better system and timeline for data collection of SPP Indicators 13 and 14 to better track student outcomes. Final recommendations of this study is the need for quantitative studies that could analyze the data directly attached to SPP Indicators 13 and 14, and another to build on the foundation of this research to measure AIMS, SESF, and SPP

Indicator 14 once there are improved disaggregated data sets at ADE. Both AIMS testing and SPP Indicator 13 have been mandated as part of data collection initiatives for over six years, yet neither of these performance measures could be statistically linked to SPP Indicator 14 outcomes. Additionally, they could not be used to support measures that work to close the achievement gaps of Native American students with disabilities in Arizona and further research is required (Adelman et al., 2013; Akee & Yazzie-Mintz, 2011; Flynn et al., 2012; Trainor et al., 2013).

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