CHUMASH EDUCATIONAL INITIATIVES

An Evaluation of Current Programming

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APPLIED POLICY PROJECT

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EXECUTIVE SUMMARY

The Education Department of the Santa Ynez Band of Chumash Indians contracted the research team to provide recommendations for how to best improve academic outcomes among Chumash students. To develop these recommendations, our team first evaluated the effectiveness of educational initiatives currently operated by the Tribal Education Department. These initiatives are offered to all Chumash students, and include individualized tutoring, financial aid subsidies, Cultural Education and Community Programming, among others.

The team obtained longitudinal student data and conducted interviews with key stakeholders to perform a comprehensive analysis of the current programs and their effects on student achievement. Our primary quantitative analysis provided little evidence that Department programs improved academic outcomes. However, interview data and secondary statistical analyses did suggest that tutoring may have some positive effects on math standardized test scores and student absenteeism, although the results remained inconclusive.

Using these results we developed a range of policy options to improve educational achievement incorporating both adjustments to current programming and the introduction of new initiatives. We evaluated these options on the basis of predicted effectiveness, feasibility, community support and cost, and then selected the options that represented the best available combination of these criteria to formulate final recommendations.

Our primary recommendations include: (1) the development of comprehensive early childhood wraparound services in partnership with the Tribal Health Clinic and (2) the institution of a rigorous academic testing and data-tracking program for all tribal students using a reputable national standardized test. We believe, based on our results and a review of relevant literature, that these recommendations can have an immediate, measurable impact on student achievement.

Our secondary recommendations include: (1) increasing tutor accountability for student performance, (2) implementation of a parental outreach program to provide information on local school quality, and (3) instituting an incentive system to reduce student absenteeism from school. These secondary recommendations could still make meaningful contributions towards raising student achievement, but are expected to have a smaller magnitude of impact than our primary recommendations.

The Chumash Education Department is in a unique position to improve the life outcomes of a generation of Chumash students; the tribe possesses the financial resources, the political will and the institutional capacity to improve children’s lives from birth through college graduation. Our recommendations suggest several important ways that the tribe may continue to work towards this goal.
Chapter 1: Introduction to Chumash Educational Initiatives

The Santa Ynez Band of Chumash Indians has been a federally recognized Native American tribe since 1901. Like many American Indian tribes, the Chumash have historically suffered from low high-school graduation rates and high levels of adult unemployment. In an effort to curb these negative trends, the tribal leadership created an Education Department in the early 1990s with responsibility for raising academic achievement among Chumash youth. After the tribe successfully opened a casino on reservation land in 2003, the Education Department’s budget expanded significantly, and with it the Department’s capacity to create large-scale improvements to quality of life for tribal members.

The Department has launched a series of educational initiatives in recent years directly aimed at improving academic outcomes among Chumash children. These initiatives include four different categories of services: Academic Services, K-12 Financial Aid, Cultural Education, and Community Programming. However, the effects of these initiatives on academic achievement have never been subject to a rigorous evaluation. Accordingly, the Chumash Education Department has contracted our team to evaluate the effectiveness of its current offerings and create recommendations for the future.

We set out to answer two policy questions:

1. Are the current Chumash education programs effective?
2. How can the Chumash Education Department improve its current programming?

We formulated answers to these questions using data from a number of sources including student records, tribal administrative data, interviews with key stakeholders and experts, and a review of academic literature. We then performed a

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1 Sandoval, Niki, Personal Interview, 12 Dec. 2013.
2 Ibid.
3 Ibid.
two-phase analysis. We first evaluated the effectiveness of current programming at increasing student achievement, using both quantitative and qualitative statistical techniques. We found little evidence of significant program effects on quantifiable measures of student achievement, although our limited data did not allow for strong conclusions.

Based on these results, we formulated policy options for the tribe to improve academic achievement among Chumash students. These options were developed through a literature review of best practices in educational interventions, personal knowledge of the field, and expert interviews. They encompass both improvements to existing programs and the creation of new programs. We evaluated each option on four criteria: effectiveness, cost, feasibility and community support.

Our primary recommendations include: (1) the development of comprehensive early childhood wraparound services in partnership with the Tribal Health Clinic and (2) the institution of a rigorous academic testing and data-tracking program for all tribal students using a reputable national standardized test. We believe, based on our results and a review of relevant literature, that these recommendations can have an immediate, measurable impact on student achievement.

Our secondary recommendations include: (1) increasing tutor accountability for student performance, (2) implementation of a parental outreach program to provide information on local school quality, and (3) instituting an incentive system to reduce student absenteeism. These secondary recommendations could still make meaningful contributions towards raising student achievement, but are expected to have a smaller magnitude of impact than our primary recommendations.

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Chapter 2: History of the Chumash

Prior to the arrival of Spanish explorers in the 1500s, the Chumash Indians lived in several areas along the length of the California coastline. In the late 1700s, Spanish explorers and Christian missionaries arrived along the central and southern coast of California, initiating contact with the Chumash people in their attempt to claim the area as a Spanish colony.

The Chumash people, introduced to new European diseases, experienced an extreme decline in population, high infant mortality rates, and the loss of much of the older generation. By 1830, the Chumash population had declined to 2,700 people, approximately 15% of original population estimates. The Santa Ynez area Chumash people were eventually forced from their homes along the coast and resettled in an area called “Zanja de Cota,” modern-day Santa Ynez.

At the turn of the 20th century, the tribe chose to combat persistent poverty and unemployment among tribal members by seeking federal recognition and assistance from the Bureau of Indian Affairs. The 98-acre Santa Ynez reservation was established as part of that recognition on December 27th, 1901, although few tribal members lived on the Reservation until a housing program began in 1979. Today there are “97 homes and 249 residents on the Santa Ynez Reservation.”

In the late 1980s, Congress legalized gaming on Native American reservations (subject to several conditions) through the passage of the Indian Gaming Regulatory Act (IGRA). Following the passage of IGRA, the Chumash, in an

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9 Ibid. For additional information on Chumash history, please see Appendix A.
effort to increase tribal economic self-sufficiency, began the process of opening a casino and resort on the Santa Ynez Reservation. The tribe successfully signed its tribal-state compact in September 1999, and the Bureau of Indian Affairs approved the compact in May of the following year. The Chumash Casino opened five years later.

The tribe’s primary goal for the casino revenue was economic self-sufficiency for tribal members. Since the opening of the Chumash Resort and Casino, the Santa Ynez band of Chumash Indians has enjoyed a large amount of economic success. The tribe has dedicated its newfound resources to improving the welfare of the Chumash community. It has instituted monthly pay-outs to supplement the income of enrolled members, provided a free health clinic for all residents of the Santa Ynez Valley, and has created a number of cultural and educational initiatives aimed at increasing the human capital of the next generation of Chumash. In an effort to diversify revenue sources, the Chumash have also invested casino revenues in gas stations, real estate, and hotels across the Santa Ynez Valley. According to the Chumash themselves:

The success of gaming is not an end in itself. Rather, it is a bridge to help regain what was once ours long ago -- true self-respect, self-determination and economic self-sufficiency…

Native American gaming has been a major catalyst for community growth and economic development, generating revenues for tribes like no federal stimulus effort ever has before. After decades of poverty and high unemployment on often geographically remote reservations, Native American people now see gaming as an integral part of tribal economies and the means to achieve economic self-sufficiency for current and future generations.

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11 Ibid.
The Santa Ynez Band of Chumash Indians is a sovereign nation. Their elected government aims to carry out their tribal constitution through the democratic process. The primary authority of the tribal government is housed in the Business Committee, comprised of “4 elected members and an elected Tribal Chairman,” determined by bi-annual elections.¹⁴ The Business Committee, along with the Elders Council, Gaming Commission, and Tribal Administration, oversees investments, appropriations and any additional tribal affairs.

Chapter 3: The Chumash Education Department

Although the Chumash have used their newfound revenue for a number of different social initiatives, improving educational outcomes remains one of the tribe’s most important goals.\(^{15}\) Even before the Chumash Casino increased tribal revenue, the tribe pursued state and federal grant money to fund initiatives aimed at helping Chumash students. The tribe’s formal education program began in 1994 with the creation of an executive Education Committee and the hiring of an Education Director responsible for overseeing all of the tribe’s educational initiatives. Initially, the tribe’s educational programming consisted only of a small-scale tutoring program, but over the intervening decades, the Education Department has grown rapidly, offering tutoring, extensive financial aid, cultural education and community programming to Chumash students across a wide geographical area. This section will provide greater detail about the Educational Department’s mission, structure, and current programming.\(^{16}\)

*The Education Department’s Mission*

The mission of the Chumash Education Department is to: “Embrace children and families from birth through adulthood by supporting kindergarten readiness, educational attainment, and career transitions.”\(^{17}\) The current Education Director, Dr. Niki Sandoval, supplemented this mission statement with further explanation, saying she wants to create programs that will lead to more Chumash students graduating from high school, matriculating into college, graduating college, and finding gainful employment in careers that they find personally engaging. Dr.

\(^{15}\) Education Committee, Personal Interview, February 11, 2014.

\(^{16}\) Ibid.

Sandoval aims for every member of the community to be grounded in his/her own sense of identity in a way that allows them to function in different environments simultaneously: maintaining their Chumash heritage while also pursuing their individual dreams.¹⁸

**The Structure of Education Department**

The Chumash Education Department is overseen by the Chumash Education Committee, an executive body made up of seven elected tribal members. The Education Committee is one of seven Tribal Administration Committees responsible for administrating key tribal functions. The Education Committee also appoints an Educational Director to head the Education Department and supervise the tribe’s educational programming. The Education Committee controls the Education Department’s budget and sets broad priorities for programming through “strategic educational investments in the tribe’s community members,”¹⁹ although the Director retains a significant amount of day-to-day, operational autonomy. The department currently consists of the education director, four full-time staff and thirty-five tutors.²⁰

**Evolution of the Chumash Education Department**

The tribe created the Education Committee and the position of Education Director in 1994 to administer a California state grant, which provided financial aid for Chumash children from birth through college. Current Business Committee member (and Tribal Vice-Chairman) Richard Gomez described the original education program as informal, but influential. The Education Department initially only provided tutoring services for one to two students, using tutors from the University of California, Santa Barbara. After receiving additional funding from the state, the Department began to hire more tutors and instituted a requirement that all

²⁰ Total number of tutors calculated using Education Department records of tutor assignments for the 2012-2013 academic year.
tutors be certified teachers in the state of California. To manage the growing number of educational initiatives, the tribe hired Dr. Frederick Loveys as the first Education Director. Dr. Loveys created the foundation for many of the programs offered by the Education Department today.

**The Education Department Today**

Dr. Niki Sandoval took over for Dr. Loveys as Chumash Education Director in 2009. Dr. Sandoval was the first Chumash tribal descendant to earn a doctorate in Education. Under her leadership, the tribe has opened a new Learning Center, expanded existing programming, and created several new educational initiatives. The Chumash Education Department currently operates four different categories of services:

- **Category One - Academic Services:** Academic services encompass all department programs aimed at directly improving students’ academic achievement. These programs include one-on-one tutoring services, after-school homework club, free testing for learning disabilities, diagnostic testing, college planning and student advocacy at school meetings and functions.
- **Category Two - K-12 Financial Aid:** K-12 Financial Aid refers to the department’s scholarship program, which includes tuition subsides for preschool, private school, post-secondary education, and adult education. This category also includes graduation bonuses and reimbursement for any qualified extracurricular activity.
- **Category Three - Cultural Education:** Cultural programming includes all department programs aimed at increasing students’ knowledge of and connection to their Chumash heritage. These initiatives include Chumash

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21 Education Committee, Personal Interview, 11 Feb 2014. At this point, the tribe also began a system of financial aid for higher education. Though an examination of the funding for post-secondary education is outside the scope of the project, it is important to note because it constitutes a large percentage of the Education Department budget.

22 Sandoval, Niki, Personal Interview, 12 Dec 2013.
Language classes, cultural workshops, and trips to Native American Events like youth conferences or Pow-wows. Many of these programs are run in partnership with the Cultural Department.

• Category Four - Community Programming: Community programming covers all department programs aimed at promoting community solidarity and cohesion among Chumash families. These initiatives include family-fun days, outings to regional attractions, movie nights, backpack giveaways, Christmas parties, and college visits.
Chapter 4: Current Educational Context of High-Needs Populations

There is a conflicted history of education research among Native American populations, with many studies lacking the methodological rigor to provide much insight. However, over the past decade education research and practice has identified several promising programs that could prove applicable to the Chumash context. We briefly reviewed research three educational themes: early childhood education, educator accountability, and non-cognitive skills.

There is evidence that early educational interventions have a powerful longitudinal impact on student achievement and adult outcomes, as shown in the Perry pre-school study and the Harlem Children’s Zone.\(^23\) For many populations, regular home visits and parenting instruction in the first year of life has been shown to improve outcomes for children.\(^24\) In addition to pre-natal and infant healthcare, early intervention also includes educationally rigorous pre-school starting as early as possible.

The growing charter school movement has reframed the conversation around educational accountability, suggesting that adults can and should be held responsible for the amount of educational growth observed in students under their charge. This accountability does not exist only for teachers; it can be extended to

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administrators, aids, and tutors. Institutions like MATCH charter schools, Massachusetts Institute of Technology, and Teach for America have pioneered this method of goal setting and data collection, which is necessary to make accountability a meaningful component of educational programs.²⁵ Additionally, systems like Washington D.C. public schools have begun to integrate accountability into their formal evaluation processes, with encouraging results.²⁶

Finally, the work of Paul Tough was particularly informative about the effects of social, emotional, and cultural experiences on academic achievement.²⁷ It has been well established that efforts to make children more secure in their identity, community and personal worth pay off down the road in higher educational achievement and lifetime earnings.²⁸

We found these three themes to be most prevalent in the literature and most informative to the task of formulating possible policy options for the Chumash Educational Department.

Chapter 5: Chumash Education
Policy Questions

Over the past decade, the Chumash Education Department has implemented four categories of educational programming with the ultimate goal of improving Chumash academic achievement. Yet the tribe has had neither the time nor the capacity to evaluate their current programs on efficacy, uptake, or long-term impact. Additionally, given the speed with which the Education Department has expanded, there has been too little time for a systematic examination of which types of programs may be most successful at improving Chumash educational outcomes. These questions have now taken on increased urgency because the Chumash Tribal-State gaming compact expires in 2020, creating significant uncertainty over whether casino revenues will continue to flow to the tribe. It is of utmost importance that the tribe decides what programs are the most worthy of financial protection. Because Dr. Sandoval, as a member of the California State Board of Education, has the ability to disseminate our findings to other tribes and disadvantaged populations, our analysis has the potential for far-ranging impact at this juncture.

The Need for Educational Programming

Children in the Santa Ynez Band of the Chumash Indians have historically had substantially below average levels of educational attainment and college attendance, leading to major economic and social obstacles to achieving positive adult outcomes. These problems are common across many American Indian tribes in the United States. American Indian students on average perform 2.4 grade levels below white students in reading by grade four, and 2.2 grade levels below

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29 Sandoval, Niki, Personal Interview, 12 Dec 2013.
white students in reading by eighth grade. Similar trends are evident in mathematics, with American Indian students in grade four performing 1.9 grade levels behind white students. By grade eight this gap is even wider; Native students perform 2.5 grade levels below white students. American Indian students’ dropout rates are 117 percent higher than white students, and they are “73 percent more likely to be enrolled in special education services.” Future generations of the Chumash tribe will not be able to prosper and gain self-sufficiency in an increasingly global and skill-based economy without interventions that are effective at closing these educational gaps. Searching for ways to change these trends for the next generation of Chumash students is the motivating factor behind both the work of the Chumash Education department and our team’s evaluation.

Our Policy Questions

We seek to answer two central questions about the Chumash Education Department’s work and services. These two questions guided the data we analyzed, the interview questions we asked, the options we created, and ultimately shaped our final recommendations.

- **Policy Question #1: Are Current Chumash Education programs effective?**

The goal of the Education Department is to improve Chumash student achievement, but the Department knows little aside from anecdotal reports about individual program effectiveness. Our team collected individual student data, publicly-reported education data, and performed interviews with key stakeholders to perform a more comprehensive analysis of program efficacy. We analyzed the effect of each of the four different categories of services on student outcomes including standardized test scores, classes failed, and

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absences. This information is essential for the Tribal Council to make informed decisions about future educational investments.

• **Policy Question #2: How can the Chumash Education Department improve programming?**

In addition to evaluating the effectiveness of current educational programming, we also examined how the Chumash can improve their existing offerings. We focused on steps that could be taken by the Education Department directly and immediately. Through an analysis of current data, and an understanding of historical context, we constructed and evaluated policy options that led to recommendations for enhancing the Education Department’s impact on student academic achievement. These options not only include modifying different aspects of the tribe’s programming but also the introduction of entirely new programs that may serve the department’s goals of raising student achievement.

With these questions as a guide, we began to collect data on Chumash students’ educational outcomes in order to best understand how current programming is working, and in what ways it might be improved.
Chapter 6: Chumash Education Initiative Outcomes: What We Know

To answer these policy questions, our team utilized student data, tribal administrative data, state educational data, a review of the background literature, and interviews with key stakeholders. These data were first used to perform a comprehensive description of the tribe’s current educational programs. We examined the following questions: Whom do the programs serve? How have the programs changed over time? How much do the programs cost per student? The answers to these questions will allow the tribe to better target their educational initiatives to the appropriate populations. The results of this analysis are described in this chapter.

Next, we used the data to provide a more comprehensive evaluation of each program’s effectiveness. We evaluated program effectiveness relative to two comparison groups: non-Chumash students attending the same school and non-participating Chumash students. The results of this analysis are presented in the next chapter.33

Data Sources

Our team utilized four main sources of data:

1) **Individual Student Data**: Our client provided California Standards Test (CST) scores, report cards, ability tests, tutor reports, and/or student activity attendance sheets for all Chumash children affiliated with the Chumash

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33 The Stata Do-File is available in Appendix D.
Department of Education.\textsuperscript{34} The data were available for each year since 2009 in which the students took part in any Chumash educational activities.\textsuperscript{35} Our client supplemented these data with information about students' demographics including age, gender, foster child status, and other socioeconomic characteristics.\textsuperscript{36}

2) **Chumash Education Budget:** The Chumash Education Department provided line-item spending information for the last three annual budgets. We used these data to identify the cost of each Chumash program.\textsuperscript{37}

3) **California Department of Education (DoE) CST Data:** The California Department of Education (DoE) makes publicly available the average California Standards Test (CST) score in English-Language Arts (ELA) and Math for each grade in all California public schools.\textsuperscript{38} We obtained the mean ELA and Math scores for a student's grade and school for each year in which we have data in our Chumash student data set. These data allow us to compare Chumash students to their non-Chumash classmates.

4) **Review of Background Literature:** Our group reviewed the main scholarly literature on American Indian social programs and educational interventions on disadvantaged communities. The summary results of this literature review were reported in Chapter Four.

5) **Interviews:** We performed a series of fifteen semi-structured interviews with Chumash Education Committee members, Education Center Staff, tutors employed by the Chumash Learning Center and policy experts. These interviews captured qualitative information related to program effectiveness.

\textsuperscript{34} These variables were all integrated into one dataset by the research team. This dataset will be given to tribe for further use. See Appendix D for Stata Do-Files including variables.

\textsuperscript{35} Though data exist from 2006, the number of students with provided data was only substantial enough for reliable quantitative analysis from 2011-2013.

\textsuperscript{36} All information on students was released to the tribe with family consent, and was in turn confidentially provided to the research team for our evaluation.

\textsuperscript{37} For more information on the Chumash Education Department Budget, please see Appendix B.

including community perceptions of program efficacy, program goals, and details on how individual programs are implemented.  

**Descriptive Data Analysis**

Our team used individual student data to perform three main types of analyses. First, we created statistics describing the academic and socio-demographic characteristics of Chumash Education Department program participants. Next, we examined program retention rates by calculating the percentage of students in a given year that remained in the program for the following year. We computed this statistic for each program for the years 2011, 2012 and 2013. Finally, we examined program costs and created rough estimates of per pupil spending by program. Cumulatively these data provide the Education Department with a clearer picture of who is using the programs, how successful it is at retaining these students, and how much each program costs. The results of these analyses are presented below.

**Who Uses Chumash Programs?**

The Chumash Education Department has expanded over time. The total number of participants enrolled in any department program increased from 95 students in 2011 to 145 students in 2012, before falling slightly to 126 students in 2013. Table 1 shows basic demographic characteristics of Chumash program participants. Students range from pre-kindergarten to high school, with the greatest concentration of students in late elementary and middle school. More than 60% of Chumash program participants are female and approximately 75% of program participants attend public schools.

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39 Please see Appendix C for the Interview Protocol used for each interview type.
Table 1: Demographic Characteristics of Chumash Program Participants\textsuperscript{40}

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Students</th>
<th>Students in Tutoring</th>
<th>Students in HW Club</th>
<th>Average Age</th>
<th>Percentage Female</th>
<th>Average Grade</th>
<th>Average Percentage in Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>95</td>
<td>47</td>
<td>NA</td>
<td>9.6</td>
<td>61.2%</td>
<td>4.4</td>
<td>74.4%</td>
</tr>
<tr>
<td>2012</td>
<td>142</td>
<td>48</td>
<td>16</td>
<td>10.5</td>
<td>61.7%</td>
<td>5.1</td>
<td>68.2%</td>
</tr>
<tr>
<td>2013</td>
<td>126</td>
<td>63</td>
<td>26</td>
<td>10.4</td>
<td>63.2%</td>
<td>5</td>
<td>59.1%</td>
</tr>
<tr>
<td>Average</td>
<td>121</td>
<td>52.67</td>
<td>21</td>
<td>10.17</td>
<td>62%</td>
<td>4.83</td>
<td>67%</td>
</tr>
</tbody>
</table>

Figure 1 shows average California Standards Test (CST) scores for Chumash students compared with average scores of non-Chumash students in the same schools. Chumash students score far below their non-Chumash peers in both Math and English Language Arts (ELA). This gap appears in part because Chumash students largely attend high-performing public schools. This comparison to above average performers can make Chumash students appear to be drastically underperforming. In reality, average Chumash test scores are just below the California Department of Education’s proficiency standard in Math, and just above the proficiency standard in ELA. It is important to note that these differences are not causal; the population of Chumash students changes each year based on entry and exit from Department programs.

\textsuperscript{40} For all tables reporting descriptive statistics the number of students used to compute averages varied due to missing data. For space considerations we did not included the number of students with data on each variable in the tables displayed in the body of the text, however this information is available in Appendix E.
Figure 1: Chumash Students Performance on CST 2011-2013

Chumash Students Underperform on ELA CST

Chumash Students Underperform on MATH CST
Table 2 shows the performance of Chumash program participants on several key academic outcomes. Although there is significant variation over time, these data indicate that both absences and class failures are a serious problem for Chumash students. For example, in 2013, Chumash students failed 11% of the math classes and 15% of the ELA class in which they were enrolled. These results suggest that a significant subset of Chumash students struggle with basic proficiency in core subjects.

Table 2: Average Academic Outcomes Among Chumash Students Over Time

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Students</th>
<th>Average STAR Math Score</th>
<th>Average STAR ELA Score</th>
<th>Average Number of Absences</th>
<th>Percent of Math Classes Failed</th>
<th>Percent of ELA Classes Failed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>95</td>
<td>342</td>
<td>356</td>
<td>4.7</td>
<td>18.2%</td>
<td>21.4%</td>
</tr>
<tr>
<td>2012</td>
<td>142</td>
<td>324</td>
<td>331</td>
<td>11.1</td>
<td>9%</td>
<td>10.8%</td>
</tr>
<tr>
<td>2013</td>
<td>126</td>
<td>338</td>
<td>348</td>
<td>7.9</td>
<td>11.1%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Average</td>
<td>121</td>
<td>334.67</td>
<td>345</td>
<td>7.9</td>
<td>13%</td>
<td>16%</td>
</tr>
</tbody>
</table>

**Chumash Program Retention Rates**

Figure 2 shows the percentage of participants in each of the Education Department’s three main programs that remain enrolled in the respective program in the following year. Retention rates are relatively high across all programs. Retention rates for tutoring ranged between 60% and 70% for the three years included in our report. Similarly, 75% of students in homework club in 2012 remained enrolled in 2013. These statistics suggest that although the Department is successfully retaining a majority of enrolled students, it still loses more than a quarter of enrolled students each year. Policies targeting these students may help the Department increase retention rates.

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41 We only had sufficient data to perform this analysis for the 2011-2012 and 2012-2013 academic years.
Chumash Budget

In 2013, the Chumash Education Department’s Operating Budget was $3.37 million dollars. More than one-third of these funds were allocated to tuition and living expenses for tribal members enrolled in higher education or vocational training schools. The tribe’s largest K-12 line-item was tuition subsidies to students attending private school. The Department allocated $600,000 in subsidies in 2013; these subsidies are capped at $10,000/student per year. However, the processing of

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42 Homework Club data was unavailable to compute the retention rate between 2010-2011 and 2011-2012.
43 We only have data on 45 students attending private school in 2013. Therefore, we are either missing data on 15 students or the tribe is paying more than $10,000/student in subsidies. For the purposes of this paper, we assume missing data.
financial aid requires a full-time staff member, meaning the per-pupil costs for tuition subsidies are closer to $11,000/student.

The tribe allocated $347,000 to its tutoring program in 2013. We have records of 63 students received tutoring in 2013, suggesting a per-pupil cost of approximately $5,500 per student. 44 We estimate the tribe allocated approximately $35,000 in 2013 to fund homework club. However, our estimate is less precise than those for the other academic services because homework club is not reported as a stand-alone budget item. We derived our $35,000 estimate from the proportion of Education Center upkeep and Education Center staff time that is dedicated to operating homework club. In 2013, 26 students attended homework club for an estimated cost of $1,350 per student. The remainder of the Chumash budget is spent on community programming, cultural education, adult education, general operation of the Learning Center, and a general services fund.45

44 However, it is likely that our dataset does not capture all students receiving tutoring. Assuming that we are underestimating tutoring students by the same proportion as students receiving tuition subsidies, there would be 84 students receiving tutoring, and a per-pupil cost of $4,130 per student.

45 For more information about the Chumash Education Department budget please see Appendix B.
Chapter 7: Evaluation of Current Chumash Educational Initiative Programming

Our analyses in the previous chapter provided important information about who is using Chumash Education Department programs, how these users have changed over time, and how much these programs cost. In addition to describing Chumash education programs and their users, we also evaluated their effectiveness. Below, we describe our evaluation strategy and results for each of the four types of services provided by the education department. The results of these evaluations were used to develop policy options to further achieve the Department’s goal of improving education for all Chumash children.

Category One – Academic Services

Method of Evaluation

Our team performed quantitative and qualitative analyses of the effectiveness of the Chumash Department’s Academic Services. Our quantitative analysis used three primary academic outcomes: California Standards Test (CST) scores, number of school absences and number of classes failed. We first used longitudinal CST score data to evaluate the effectiveness of participation in tutoring and homework club. For both of these programs, we compared changes over time in the ELA and Math standardized test scores of program participants with both their non-Chumash classmates and their non-participating Chumash peers. Any difference in trends should be at least partially attributable to the effect of the program. However, if these groups have different trends over time even absent the Education Department programs, our estimates may be biased. For example, if the gap between Chumash
students and their classmates widens with time, any estimate of the effect of tutoring or homework club would be an underestimate.

Second, we examined the effect of each program on school attendance and class failure rate. To perform this analysis, we compared changes in school attendance and class failure rates over time for students beginning and ending participation in the program relative to their peers whose program status remained unchanged. These estimates are subject to bias for the same reasons as above.

Third, we performed semi-structured interviews with key Chumash stakeholders. These interviews allowed us to create qualitative estimates of the effectiveness of homework club and tutoring. However, information obtained from these interviews may produce biased results for several reasons. First, our informants were not randomly selected and therefore may not be representative of the greater Chumash population. Second, individuals’ assessment of program’s effectiveness is largely based on perception and may not be representative of a program’s actual effects. However, informant interviews do provide an important perspective missing from quantitative data. For instance, even if a program does not cause test scores to improve, it may have an effect on other, immeasurable, academic outcomes and these impacts may be more recognizable to qualitative observers. Therefore, our final evaluation of academic program effectiveness is a combination of our quantitative and qualitative findings.

**Quantitative Estimates of Effectiveness of Academic Services**

We first examined the effect of Chumash Academic Services on student outcomes by comparing changes in test scores among Chumash program participants with their non-Chumash classmates. By identifying the increase or decrease in Chumash test scores over time and comparing this change to the change in non-Chumash test scores we can derive an estimate of each program’s effectiveness. Figures 3 and 4 show our results. We also performed the same analysis in regression form, allowing us to create confidence intervals around our effect estimates. These estimates and confidence intervals are presented in Tables
3a, and 3b. With the exception of a large gain in math scores between 2011-2012 and 2012-2013, these results show a negligible effect of both tutoring and homework club on test score gains. In all years, the effects of the programs on Math are greater than the effects on English/Language Arts. It is important to note that none of our estimates were statistically significantly different from 0, meaning that any of our effects could have been produced by random chance. One reason for these insignificant effects is that we only had complete data for a small sample of students, resulting in less statistical power. Given that the majority of our estimates of program effect were actually negative, it appears unlikely that the programs have a large positive effect on test scores, especially in English/Language Arts. However, it may also be possible that test score trends of Chumash students and their non-Chumash peers are on different trajectories over time. For instance, research exists showing that the gap between many disadvantaged groups and their more advantaged classmates widens over time.\(^{46}\) If this were true in the Chumash case, our estimates would be underestimating the true program effect.

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Figure 3: Effect of Tutoring on CST Scores (95% CI Displayed)

Figure 4: Effect of Homework Club on CST Scores (95% CI Displayed)
Table 3a and 3b: Estimates of Program Effects on CST Scores:

Table 3a: Estimates of Program Effects on CST Math Scores

<table>
<thead>
<tr>
<th>Year</th>
<th>Program Evaluated</th>
<th>Number of Students</th>
<th>Estimates of Program Effectiveness</th>
<th>T-Ratio</th>
<th>95% Confidence Interval (Lower)</th>
<th>95% Confidence Interval (Upper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>Any Program Exposure</td>
<td>18</td>
<td>-14.67</td>
<td>1.05</td>
<td>-42.9</td>
<td>13.6</td>
</tr>
<tr>
<td>2011-2012</td>
<td>Tutoring</td>
<td>5</td>
<td>-4.38</td>
<td>0.14</td>
<td>-74.77</td>
<td>66.01</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Any Program Exposure</td>
<td>30</td>
<td>9.87</td>
<td>0.94</td>
<td>-11.12</td>
<td>30.87</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Tutoring</td>
<td>11</td>
<td>25.6</td>
<td>1.56</td>
<td>-8.46</td>
<td>59.64</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Homework Club</td>
<td>33</td>
<td>-19.86</td>
<td>1.17</td>
<td>-54.55</td>
<td>14.82</td>
</tr>
</tbody>
</table>

Table 3b: Estimates of Program Effects on CST ELA Scores

<table>
<thead>
<tr>
<th>Year</th>
<th>Program Evaluated</th>
<th>Number of Students</th>
<th>Estimates of Program Effectiveness</th>
<th>T-Ratio</th>
<th>95% Confidence Interval (Lower)</th>
<th>95% Confidence Interval (Upper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>Tutoring</td>
<td>5</td>
<td>-3.66</td>
<td>0.29</td>
<td>-31.77</td>
<td>24.45</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Any Program Exposure</td>
<td>26</td>
<td>-1.7</td>
<td>0.24</td>
<td>-15.7</td>
<td>12.3</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Tutoring</td>
<td>9</td>
<td>-9.63</td>
<td>0.91</td>
<td>-31.97</td>
<td>12.71</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Homework Club</td>
<td>29</td>
<td>-4.2</td>
<td>0.26</td>
<td>-37.03</td>
<td>28.65</td>
</tr>
</tbody>
</table>

To further investigate these effects, we performed secondary estimates of program effectiveness using a control group of Chumash non-program participants as well as a different set of academic outcomes. Using other Chumash as the counterfactual group allows us to control for differential trends between Chumash and non-Chumash students. However, we may expect that Chumash not participating in tutoring are systematically different than those participating in tutoring, introducing a new source of bias. For example, on average students who opted into tutoring may already be more academically inclined or have more involved parents leading to different academic trajectories over time. Chumash students not receiving tutoring likely attend different schools from program participants, exposing them to different long-term trends. Tables 4a, 4b, and 4c show our results. Using a Chumash control group produces more positive estimates of program effectiveness for tutoring, but not for homework club. However, all estimates remain statistically insignificant. Additionally, both tutoring and homework club appear to reduce number of days...
students are absent, while tutoring is associated with failing fewer math and ELA classes. Again, neither of these results is statistically significant at conventional levels, except for the effect of tutoring on absences which is significant at a 90% level. However, these results, subject to the caveats about bias mentioned above, do lend some support to the theory that our first analysis may underestimate the effects of homework club, and especially tutoring. Further, the positive effects of tutoring on non-test score outcomes suggest that its full impact may be difficult to capture through purely quantitative analysis.

Tables 4a, 4b, and 4c: Effect of Educational Initiatives on Program Participants Relative to Chumash Non-Participants

Table 4a: Effect of Educational Initiatives on Program Participants Relative to Chumash Non-Participants on CST Math Scores

<table>
<thead>
<tr>
<th>Year</th>
<th>Program</th>
<th>Number of Students (N)</th>
<th>Effect</th>
<th>Standard Error</th>
<th>Confidence Interval (Lower)</th>
<th>Confidence Interval (Upper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>Tutoring</td>
<td>15</td>
<td>4.8</td>
<td>33.18</td>
<td>-63.55</td>
<td>73.15</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Tutoring</td>
<td>22</td>
<td>26.36</td>
<td>19.41</td>
<td>-13.62</td>
<td>66.34</td>
</tr>
<tr>
<td>2012-2013</td>
<td>HW Club</td>
<td>28</td>
<td>-10.4</td>
<td>18.17</td>
<td>-47.83</td>
<td>27.03</td>
</tr>
</tbody>
</table>

Table 4b: Effect of Educational Initiatives on Program Participants Relative to Chumash Non-Participants on CST ELA Scores

<table>
<thead>
<tr>
<th>Year</th>
<th>Program</th>
<th>Number of Students (N)</th>
<th>Effect</th>
<th>Standard Error</th>
<th>Confidence Interval (Lower)</th>
<th>Confidence Interval (Upper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>Tutoring</td>
<td>14</td>
<td>28.78</td>
<td>20.12</td>
<td>-12.67</td>
<td>70.23</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Tutoring</td>
<td>18</td>
<td>13.48</td>
<td>14.96</td>
<td>-44.29</td>
<td>17.34</td>
</tr>
<tr>
<td>2012-2013</td>
<td>HW Club</td>
<td>24</td>
<td>-6.44</td>
<td>11.62</td>
<td>-30.72</td>
<td>17.49</td>
</tr>
</tbody>
</table>
Table 4c: Effect of Educational Initiatives on Program Participants Relative to Chumash Non-Participants on Selected Non-Test Score Academic Outcomes

<table>
<thead>
<tr>
<th>Year</th>
<th>Program</th>
<th>Number of Students (N)</th>
<th>Effect</th>
<th>Standard Error</th>
<th>Confidence Interval (Lower)</th>
<th>Confidence Interval (Upper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>Tutoring</td>
<td>21</td>
<td>-2.25</td>
<td>1.17</td>
<td>-4.66</td>
<td>0.16</td>
</tr>
<tr>
<td>2012-2013</td>
<td>HW Club</td>
<td>20</td>
<td>-1.22</td>
<td>1.64</td>
<td>-4.59</td>
<td>2.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Program</th>
<th>Effect</th>
<th>Standard Error</th>
<th>Confidence Interval (Lower)</th>
<th>Confidence Interval (Upper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>Tutoring</td>
<td>-0.056</td>
<td>0.053</td>
<td>-0.16</td>
<td>0.053</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Program</th>
<th>Effect</th>
<th>Standard Error</th>
<th>Confidence Interval (Lower)</th>
<th>Confidence Interval (Upper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>Tutoring</td>
<td>-0.042</td>
<td>0.053</td>
<td>-0.15</td>
<td>0.067</td>
</tr>
</tbody>
</table>

Qualitative Estimates of Program Effectiveness

Our interview subjects strongly supported the tutoring program. An Education Committee member stated that “tutoring and helping the kids get a better education from the get go has really put them up to the level that they need,” and that they believe their students are excelling because of their work with tutors. Additionally, multiple sources reported the importance of tutor-student connection: there were many instances of tutors working to build quality relationships with students that our subjects believed also translated into increased confidence and academic performance.47

Tutors are assigned to students based on personality and age-range fit. Tutors explained that they focus on areas identified by the students and their families first, and then on additional skills. Interviews indicate that tutors are unclear about their ability to set agendas based on perceived need rather than parental preferences. This ambiguity leads tutors to often spend the bulk of their time working on homework and school assignments; tutors only occasionally have the opportunity to focus on more basic literacy and numeracy skills. Multiple interviewees mentioned that this work pattern can prevent them from helping students obtain the

47 Education Committee, Personal Interview, 11 Feb 2014.
tools necessary to succeed in other areas. Families are responsible for scheduling tutor meetings, and if students miss a tutoring appointment without reason, they are charged a fee.

Interviewees were less positive about the effects of homework club. One Education Center staff member explained that some students “find homework club to be huge waste of their time,” but also stated that when they connect with a tutor “it really helps them grow in school.” Additionally, parents can arrange for when they want their children to attend homework club, but there is no penalty for absences.

The overall consensus from our interviews is that tutoring has a positive effect on student achievement, but homework club is not especially effective.

**Category Two – Financial Aid/Tuition Assistance**

**Method of Evaluation**

Chumash students receiving tuition assistance all attend private or parochial schools. Private schools are not mandated to administer the CST and therefore it is difficult to make direct comparisons with either their Chumash peers or their non-Chumash classmates. As a result, we have not attempted to make a quantitative estimate of the effectiveness of financial aid in raising academic achievement. Instead, we have looked at the average number of days absent and classes failed of students attending private schools. Although we lack the data to identify whether a student’s success or failure at a private school is caused by the private school itself, examining absentee and failure rates still allow us to determine if Chumash private school students are succeeding academically. We then supplemented this analysis with information from interviews with key Chumash stakeholders.

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48 Education Department Staff Member, Personal Interview, 11 Feb 2014.
Quantitative Estimates of Program Effectiveness

Table 5 shows the average absences per year and percent of classes failed by Chumash students attending private school in 2011, 2012 and 2013. Absentee rates are relatively high; in both 2012 and 2013, students on average were absent more than seven days per year. Even more surprising, Chumash private school students failed 15% of their math classes and 18% of their ELA classes in 2013. These findings suggest that at a minimum, a significant subset of Chumash students in private schools are not excelling academically. Given that the tribe subsidizes up to $10,000 per year in private school tuition, this lack of academic success creates serious questions about whether this money could be more effectively spent elsewhere.

Table 5: Academic and Demographic Characteristics of Students Receiving Private School Tuition Subsidies

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Students</th>
<th>Students in Private School</th>
<th>Average Age</th>
<th>Percent Female</th>
<th>Average Number of Absences</th>
<th>Percent of Math Classes Failed</th>
<th>Percent of ELA Classes Failed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>95</td>
<td>20</td>
<td>9.1</td>
<td>50%</td>
<td>4.3</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td>2012</td>
<td>142</td>
<td>41</td>
<td>11.1</td>
<td>50%</td>
<td>7.7</td>
<td>12%</td>
<td>18.4%</td>
</tr>
<tr>
<td>2013</td>
<td>126</td>
<td>45</td>
<td>9.8</td>
<td>63%</td>
<td>8.4</td>
<td>14.7%</td>
<td>17.6%</td>
</tr>
<tr>
<td>Average</td>
<td>121</td>
<td>35.33</td>
<td>10.00</td>
<td>54%</td>
<td>6.8</td>
<td>22%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Qualitative Estimates of Effectiveness

Our interview subjects reported that uptake of K-12 financial aid is quite high among Chumash students. Many members of the Education Committee and Education Department believe that Santa Ynez area tuition-based schools are a better option for students than area public schools. Some Education Committee members stated that private schools could help Chumash students avoid negative experiences at public schools: in the past students seemed to have been negatively stereotyped if they came from “the reservation,” and this prejudice contributed to
tribal members’ desire to send their children to private schools. This belief, as well as a desire to give parents more choices about where to educate their children, underpins the Education Committee’s support for the use of K-12 Financial Aid. However, the Education Committee also acknowledges that public schools in the area have improved over time and they suggest that Santa Ynez area public schools appear to be using more technology and computers than area private schools. Finally, Education Center staff and Education Committee members both spoke about the number of families who use the K-12 subsidy to send their children to preschool, because there is an overall sense of wanting to get students on the right path from an early age and a great belief in the importance and utility of preschool.

**Category Three - Cultural Education**

**Method of Evaluation**

We lacked sufficient data to evaluate the effects of cultural education on academic outcomes. Further, the end goals of cultural education are to increase cultural identity and community solidarity in addition to increasing academic achievement. Therefore a failure to increase academic achievement would not necessarily mean that cultural education is not succeeding. For this reason, we relied wholly on our interviews with key Chumash stakeholders to evaluate the Department’s Cultural Education program. These interviews are subject to same types of bias as described in the previous qualitative sections.

**Qualitative Estimates of Effectiveness**

Both Education Committee and Education Department staff members spoke highly of cultural programming put on by the Education Department (often in

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cooperation with the Chumash Cultural Center). Tutors reported the “sense of pride starting up” that they see from students who participate in cultural programs, and also the sense of community they observe in students and their families.\textsuperscript{51} The Education Committee shared that an important goal of the tribe’s tutoring and academic support programs was ultimately to prepare students to return to the tribe as leaders, implying that the cultural aspect of their education is important.\textsuperscript{52} Overall, there exists a lot of pride around the tribe’s cultural education offerings, as well as a significant amount of engagement from the community.

\textit{Category Four – Community Programming}

\textbf{Method of Evaluation}

Similar to cultural education, the goals of community programming are to increase community identity and solidarity, not necessarily to improve academic outcomes. Since community identity and solidarity are difficult to measure quantitatively and because we lack sufficient data to come to any strong conclusions about how these programs affect academic outcomes, we again chose to rely on stakeholder interviews. These interviews are subject to the same biases discussed in the section above.

\textit{Qualitative Estimates of Effectiveness}

Community Programming activities and events generate a lot of excitement in the community. The Education Committee and Education Department staff agreed that these events can serve as great incentives and rewards for students who accomplish specific goals. Subjects also reported that these events could better encourage interaction among Chumash families. For instance, one subject stated, “I think that there should be more things to help the adults because … if you help the adults you help the children and there are parents out there that have no clue and

\textsuperscript{51} Chumash Education Department Tutor, Personal Interview, 11 Feb 2014.
\textsuperscript{52} Education Committee, Personal Interview, 11 Feb 2014.
their children are telling them what's going on." She went on to suggest that money currently used for programming focused on fun and community building "would be better spent on a more precise application to education than fun" and "more things like, I don't know, books." Community programming appears to be a fun outlet for students that the Education Committee also believes serves a celebratory purpose. However, aside from qualitative quotes and anecdotes we cannot fully comment on its impact on student achievement.

**Summary of Effectiveness**

Our data provide limited evidence that any of the Chumash Education Department programs have large positive effects on academic achievement. There is some indication that tutoring may lead to higher standardized test scores, especially in math, and that both tutoring and homework club may be associated with lower absenteeism and fewer classes failed. However, with the exception of the effects of tutoring on absences and math scores in 2012-2013, the effects are small and statistically insignificant. Our data also show that a significant subset of students receiving tuition subsidies to attend private school struggle academically. Although we cannot know if this poor performance was caused by the private school, at a minimum it suggests that private schools are not helping these students succeed and the money for tuition subsidies may be more effectively used elsewhere. Finally, we were unable to produce quantitative estimates of the effectiveness of community programming and cultural education. Our qualitative data show strong community support for these programs, but because we lack the ability to rigorously evaluate these programs, we will remove them from consideration when discussing our policy options.

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53 Education Department Staff Member, Personal Interview, 11 Feb 2014.
Chapter 8: Policy Options for Revising Current Chumash Educational Initiatives

Based on the conclusions above, we developed a variety of policy options for strengthening and possibly expanding the activities of the Education Department. To develop these options we consulted experts in the field, performed an extensive review of the available literature and drew on our personal knowledge of the education sector. Given the nature of our project and the preferences of our client, we focused only on policy options that could be implemented directly by the Education Department. We acknowledge the potential value of macro-level policies that affect educational inputs, such as reducing parental drug addiction\textsuperscript{54}, or increasing the social value of education among tribal families, but for the purposes of this project we only proposed and examined policy options that would fall within the purview of the Education Department. The following sections detail our options for improving current Education Department programming as well some possible larger scale options that would represent new areas of service.

\textit{Proposed Policy Options to Improve Current Education Center Offerings}

In our evaluation of current programming we separated existing services into four categories. However, given the difficulty in measuring the effectiveness of Cultural Education and Community Programming, we chose to focus our proposed policy options only on Academic Services (Category One) and K-12 Financial Aid (Category Two). Our proposed policy options could also have positive effects on

\textsuperscript{54} Sandoval, Niki. Personal Interview, 12 Dec, 2013. NOTE: This is anecdotal evidence that the Chumash population suffer from high rates of alcoholism and drug abuse. These serious issues could clearly have serious ripple effects on children’s educational experience, but these secondary causes are outside the scope of this project.
Cultural Education (Category Three) and Community Programming (Category Four), but an examination of those effects is now outside the scope of this analysis. The following represents a detailed description and justification of each option.

**Policy Option 1: Increase Outreach Around Program Eligibility**

Currently there exists a significant subset of Chumash students who are not enrolled in any Education Department programming. However, the tribe does not currently have a staff member dedicated solely to increasing outreach to the Chumash community, limiting the Department’s ability to reach all Chumash students. To reach these students, the Chumash Education Department could hire an additional Education Department staff member, who would be responsible for reaching out to the Chumash community to make sure that students and families are aware of all services for which they are eligible. This staff member would also assist them in the enrollment process. Yet, it is important to note that increasing access to all academic services would only raise total academic achievement among Chumash students to the extent that tutoring and other services truly have an effect on student outcomes. Our early analysis showed limited support for this assumption.

**Policy Option 2: Tutor Accountability**

Our data show that tutoring may have a small, but positive impact on student achievement. Our interviews suggest tutors would be more effective if they focused on their area of expertise and focus on skill building rather than just homework completion. These sentiments mesh well with research evaluating successful charter programs such as MATCH and KIPP. At these schools, students achieved significant academic success when teachers and students agreed upon clear goals, and educators were evaluated based on their student’s progress towards these

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55 Sandoval, Niki. Personal Interview, 12 Dec 2013.
goals. This policy option proposes adding layers of accountability to the current tutoring format, such as the setting of SMART goals. SMART goals are a goal-setting system developed by Paul J. Meyer, which focuses on creating goals that are “Specific, Measurable, Attainable, Relevant, and Time-bound (SMART).”57 These goals would help tutors articulate what they hope to accomplish with students and set metrics to assess their progress. Additionally, the goals would give families and Education Department Staff a clearer idea of student strengths and weaknesses, and also allow tutors to dedicate more time to skill building rather than just homework completion. Finally, these goals would also provide a basis for clear and fair assessment of tutor performance to be used by the Education Department in performance evaluation.

**Policy Option 3: Attendance Incentives for Homework Club**

Our data suggests that enrollment in homework club did not have a significant impact on student academic outcomes. One reason for this lack of impact may be inconsistent student attendance or low student engagement during homework club hours, a theory reflected in our interviews of Learning Center staff. It has been shown that students who display regular, engaged attendance often have higher levels of achievement.58 It is possible that increasing positive incentives for engaged attendance during homework club and subsequent tutoring at the Learning Center could increase the impact of existing programs on student achievement. We heard from Learning Center staff how popular other incentive programs were and sizable positive outcomes they achieved.59

59 Education Center Staff, Personal Interview, 11 February, 2014.
**Policy Option 4: New Testing Initiatives**

The Center currently uses Brigance testing to monitor student achievement levels, but this test is problematic for two reasons. First, Brigance is most useful for younger students and/or diagnosing learning disabilities for entrance into special education services. Second, the tribe is testing students on an as-needed basis, providing for inconsistent and incomplete measures of tribal student aptitude. We suggest adopting a more broadly applicable standardized test and administering it to all students enrolled in Education Department programs. Our proposed alternative is the TerraNova test, which has been scaled for all ages, has been validated as a good indicator of student ability, can be administered by any adult, and will be impartially scored by the testing company. A more widely-used test like TerraNova might give the Education Center more useful data to track students, target educational interventions, and evaluate the effectiveness of Department initiatives.

**Policy Option 5: Provide Public School Students with Increased Educational Subsidies**

A second option to decrease families’ incentives to enroll their students in private or parochial schools is to offer an additional subsidy for educational goods to parents who choose to send their children to public school. Currently, the tribe offers a private school tuition subsidy to all Chumash students. Parents choosing to send their children to public school save the tribe a large amount of money by forgoing the subsidy, but do not reap the benefits of any of these cost savings. Therefore, even if a private school is only marginally better than a public school, a parent is incentivized to enroll his/her child in a private school. This enrollment might only create a small academic benefit, but would cost the tribe more than $10,000. If the

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tribe offered educational subsidies to parents of public school children equal to a proportion of the cost-savings available to the tribe, more parents may decide to keep their students in public school and use the value of the subsidy to invest further in their child’s education through extra-curricular activities or educational toys and software. If this subsidy is less than $10,000, it may allow for both greater gains in academic achievement and lower spending by the tribe.62

This option is supported by research showing that educational investment directly helps students excel. In fact, the number of books in a home is positively correlated with children’s’ literacy skills.63 We also learned from the Education Department Staff that giving parents more tools to help their own students might help them feel more involved and engaged in the educational process.64

Policy Option 6: Collect and Share Private School Data

In analyzing the ways that the Education Department allocates funding to students for K-12 services, we lacked the data to precisely measure how these services affect student achievement. However, we did determine that a significant number of students attending private schools are not excelling academically. We also discovered from interviews and an analysis of California Department of Education Data that public schools in the Santa Ynez Valley, home of the majority of Chumash students, have improved significantly over the past decade.65

62 However, if the use of this subsidy by current public school parents was greater than the cost savings from the decrease in private school enrollment, this option would increase tribal spending.
64 Education Center Staff, Personal Interview, 11 Feb 2014.
existence of high-performing local schools and the underperformance of a subset of private schools imply that the tuition subsidies provided by the tribe may not be leading to large gains in student achievement. To help parents make decisions on school choice based on facts, the Chumash Education Department could collect and disseminate data on the efficacy of private and parochial schools versus public schools in a student’s geographic area. For instance, Education Center staff could meet with parents to discuss data on their children’s public/private school options and to record factors influencing parents' choice of school. This option could decrease the number of families using the tuition subsidies, freeing up resources for other educational initiatives.

*Policy Option 7: Stricter Financial Aid Requirements*

Currently, the system in place for families to obtain private school tuition assistance does not require families to justify their choice of private school. One option to remedy this oversight is to mandate that families demonstrate a specific educational need that can only be met by an available private or parochial school. This would entail hiring an additional staff member to counsel families through the school-choice process. The Education Department could guide families in making these decisions for their students, such as religious beliefs or the ability of tuition-based school to more effectively serve their students specific needs. The resulting decrease in private school enrollment would create cost savings for the Department.

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Ynez Elementary, now has a relatively high Academic Performance Index (API) of 852, a California state measure of schools performance relative to other schools.  

66 Sandoval, Niki. Personal Correspondence. 15 April, 2014.
Table 6: Summary of Proposed Policy Options to Improve Education Department Offerings

<table>
<thead>
<tr>
<th>Proposed Policy Options to Improve Current Education Center Offerings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy Option 1: Increase outreach around program eligibility</strong></td>
</tr>
<tr>
<td>• Hire an additional staff member to connect with parents and families about the available opportunities and programming for students,</td>
</tr>
<tr>
<td>• Ensure that all Chumash are aware of all programs for which they are eligible,</td>
</tr>
<tr>
<td>• Share data on the effectiveness of existing programs with families to inform their decisions on program enrollment.</td>
</tr>
<tr>
<td><strong>Policy Option 2: Increase tutor accountability</strong></td>
</tr>
<tr>
<td>• Coach tutors to set goals for growth with their students in not only their content area homework but in math and literacy measures,</td>
</tr>
<tr>
<td>• Increase the current focus on literacy,</td>
</tr>
<tr>
<td>• Ensure that the tutor population is varied in skillset and content-area specialty so that students can be most effectively matched with tutors who are strong in the areas they need it most.</td>
</tr>
<tr>
<td><strong>Policy Option 3: Homework Club Attendance Incentives</strong></td>
</tr>
<tr>
<td>• Reward students for positive behavior and achievement at homework club,</td>
</tr>
<tr>
<td>• Keep track of student homework club attendance and merge it with tutoring opportunities whenever possible.</td>
</tr>
<tr>
<td><strong>Policy Option 4: Testing Initiative</strong></td>
</tr>
<tr>
<td>• Collect holistic data on students including more than state test scores and school grades,</td>
</tr>
<tr>
<td>• Use a more widely-used test so student progress can be monitored more effectively.</td>
</tr>
<tr>
<td><strong>Policy Option 5: Provide Public School Students With Increased Educational Subsidies</strong></td>
</tr>
<tr>
<td>• Offer students the ability to obtain educational subsidies for use on educational materials or extra-curricular educational activities,</td>
</tr>
<tr>
<td>• Students might be incentivized to attend public schools rather than the more expensive tuition-based private school.</td>
</tr>
<tr>
<td><strong>Policy Option 6: Collect and Share Private School Data</strong></td>
</tr>
<tr>
<td>• Santa Ynez area public schools are actually quite high-performing based on their state API scores, whereas little evidence exists on the efficacy of area tuition-based schools,</td>
</tr>
<tr>
<td>• Via outreach, the Chumash can further empower families to make decisions based on school performance.</td>
</tr>
<tr>
<td><strong>Policy Option 7: Stricter Requirements for Financial Aid</strong></td>
</tr>
<tr>
<td>• Currently there is a set of regulations for how families can obtain funds to send their students to tuition-based schools that does include demonstration of need,</td>
</tr>
<tr>
<td>• These requirements could ensure students do not enroll in private school when a public school could adequately meet their needs. Tuition assistance would be reserved for students who need it most. (i.e., students who might want to attend a religious school or who have special needs that could be better addressed at a tuition-based school).</td>
</tr>
</tbody>
</table>
Proposed Policy Options for New Education Center Programming

In evaluating the current services offered by the Chumash Education Department we also examined other areas to potentially supplement current services. Below we provide detailed description of each new policy option and its empirical support from the academic literature.

Policy Option 8: Parenting Classes/Nurse Family Partnership

This program involves a series of home visits performed by a registered nurse to all first time expectant mothers in a population. In the Chumash context, because of the smaller population, we recommend making visits available to all pregnant women. During home visits, nurses have three goals:

- Mitigate risks associated with pre-natal behavior by discouraging the use of substances like alcohol, tobacco, and illegal drugs and addressing obstetric complications as quickly as possible,
- Encourage "sensitive, competent care of the child" with instruction on effective communication and accurate assessment of developmental competency,
- Conduct conversations with the mother about her life course, incorporating the planning of future pregnancies, marriage, education and employment.

Implementing this program would involve outreach to all lineal members of the tribe, the creation of a list of women who are pregnant or who have recently given birth to a tribal descendant, and the enrollment of these women in the Nurse Family Partnership. This would be available regardless of where the expectant mother was living. Further, all families who are offered nurse visits would also be eligible for

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67 As originally designed this program was targeted only at women expecting their first child. It was thought that first time mothers would be more receptive, nurses could help them plan subsequent pregnancies, and they could apply their lessons to all future child-rearing.

regular parenting classes to follow the “Baby college” model created by the Harlem Children’s Zone, focusing on non-violent discipline and brain development. To accomplish this objective, we propose a joint venture between the Education Department and Health Department where costs, staff, and oversight are split evenly and evaluated as one entity by the full tribal council.

As discussed in Chapter 4, we know that better care early in life leads to improved academic outcomes. The Nurse/Family Partnership (NFP) model has been tested in randomized, controlled trials in three different areas of the United States; New York, Tennessee, and Colorado. These contexts supply replicability settings with different participant demographics and geographic regions, so we are fairly confident that the results would be similar for the Chumash in Santa Ynez. The program is also operating in a non-experimental context in 170 locations nationwide. Additionally, the tribal community is smaller than the sample size for this study, so we can be sure it is feasible to contact, enroll and visit this many expectant mothers during their pregnancy.

**Policy Option 9: Preschool**

This option proposes the opening of a fully functional preschool on the Santa Ynez reservation. It would serve tribal lineal descendants between one and four years of age able to travel to the Santa Ynez reservation on a daily basis. It would be staffed by fully certified Pre-K teachers and focus on kindergarten readiness, specifically diagnosing students on literacy, numeracy, and social-emotional competencies and requiring benchmarks be met before graduation to kindergarten. The preschool could initially be operated out of the Learning Center, which has space available during the school day and would only need to initially provide room for approximately ten students. If and when the student body grows substantially, a stand-alone preschool could be constructed.

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We included a preschool program as one of our available policy options for three reasons. The first is that we heard from families that they commonly use their financial aid subsidy for preschool, implying that they already believe it to be an important experience for their children.\textsuperscript{70} The second is we believe it directly addresses the Education Department’s stated desire for kindergarten readiness for all members of the tribe.\textsuperscript{71} Currently, the tribe provides diagnostic testing and funding for attending preschool outside the community but pulling the service in-house could increase the quality and access in service of this mission. Finally, early childhood is by far the most valuable time for an educational intervention. High quality early education has been associated with higher likelihood of graduating high school, finding employment, and financial self-sufficiency.\textsuperscript{72}

**Policy Option 10: Incentives to Reduce Absenteeism in Schools**

This option proposes a collection of methods to incentivize students to minimize absences from school. The education literature has consistently shown evidence of a link between high absentee rates and low academic achievement.\textsuperscript{73} Our data show that absenteeism is a major problem for many Chumash students, and may contribute to decreased academic outcomes. Starting a program to incentivize students to regularly attend school might extrinsically motivate students to attend school on a more consistent basis. Over the long-term, the program could also lead to students placing a greater value on academic achievements.

Schools and districts across the country have implemented a variety of programs to decrease absentee rates: a nationwide competition among schools

\textsuperscript{70} Education Department Staff, Personal Interview, 11 Feb 2014.
rewarded schools with the highest rate of improvement in absenteeism with a concert, the Elk Grove District just outside of Sacramento offered prizes to students with perfect attendance, and other school groups have offered movie nights and treats such as gift cards and books.\textsuperscript{74} The Chumash already reward their students’ academic achievements but it might also be worthwhile to consider incentives for students to purely attend school on a routine basis in order to ensure they’re gaining the instruction they need.

Table 7: Summary of Proposed Policy Options for New Education Center Programming

<table>
<thead>
<tr>
<th>Proposed Policy Options for New Education Center Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Option 8: Parenting Classes/Nurse Family Partnership</td>
</tr>
<tr>
<td>• Registered Nurse home visitation program designed to promote pre-natal and infant health</td>
</tr>
<tr>
<td>• “Baby college” parenting classes on infant and toddler care</td>
</tr>
<tr>
<td>• Designed to improve parental behavior and environmental conditions early in life</td>
</tr>
<tr>
<td>Policy Option 9: Preschool</td>
</tr>
<tr>
<td>• Chumash Pre-K educational program</td>
</tr>
<tr>
<td>• Educationally stimulating childcare provided to all tribal members from ages 1-4</td>
</tr>
<tr>
<td>• Designed to promote full kindergarten readiness in all tribal members</td>
</tr>
<tr>
<td>Policy Option 10: Incentives to Reduce Absenteeism in Schools</td>
</tr>
<tr>
<td>• Create prizes or rewards to student attendance at their schools</td>
</tr>
<tr>
<td>• Reward students quarterly or yearly for their attendance achievements</td>
</tr>
<tr>
<td>• Designed to increase student achievement via school participation</td>
</tr>
</tbody>
</table>

\textbf{Evaluative Criteria}

We have generated multiple policy options that individually or in combination have the potential to strengthen the tribe’s efforts to promote the academic achievement of its children. We next examined which options are viable, given how likely they are to affect achievement, and what they would require for full implementation. We evaluated these options across four dimensions: effectiveness, cost, feasibility, and community support to determine which options represent the best use of tribal resources. For each of these criteria, we assigned policy options a

rating on a three-level scale. Details of scale creation and rating levels are provided below. Although we will discuss weighting of the criteria in more detail later in this section, it is important to note that we are treating effectiveness as the most important criterion (feasible options that do not accomplish anything would have no value for the tribe). This analysis allows us to identify what should be included in our recommendations to the Chumash tribe and its Education Department.

1) **Effectiveness:** A policy option’s effectiveness describes how well it accomplishes the goal of improving academic outcomes among Chumash children. We measure effectiveness by determining the expected impact of each program on academic achievement. In determining our ratings of high, somewhat, and low effectiveness, we examined estimates of effectiveness from research and case studies from American Indian and low-income communities. Here we attempt to predict the magnitude of effect for each proposed policy option using evidence from the following three categories:

- 1. Supported by outside research
- 2. Supported by interview data
- 3. Directness of effect on student achievement

**Ranking Guidelines:**

- Low Effectiveness: Little evidence exists that option would have effect on student achievement, not mentioned in interviews, and does not directly impact student achievement.
- Somewhat Effective: Some evidence exists of option of effectiveness (i.e. case studies), but not necessarily supported by academic research, mixed responses in interviews, and some direct effect on student achievement.
- High Effectiveness: Strong evidence (i.e. randomized-controlled trial) for effect on student achievement, directly reflective of highly supported topics in our qualitative data, and direct effect on student achievement.
2) **Cost**: The proposed policy options impose different levels of cost on the tribe. We used publicly available information on program costs and Chumash Department of Education annual budgets from the past five years to determine each option’s yearly budget implications. We adjusted our measurements to reflect the possibility that costs will change over time by comparing across years of budgets to discover upward or downward trends.

By obtaining a range of costs that is dependent on uptake and enrollment, we provided an upper and lower bound for how much the tribe can reasonably expect to spend if it were to implement particular options. To the extent available, we also found the costs of similar programs used by other American Indian tribes and low-income communities.

*Ranking Guidelines:*
- **Will Produce Cost Savings**: implementation of program will reduce expected tribal expenditures
- **Within Existing Budget**: estimated yearly cost of option can be funded with existing available funds. The tribe maintains a general services fund of approximately $100,000, which is available for new programming.
- **Over Budget**: estimated yearly cost of option could only be funded with substantial reallocation or budget increase (> $100,000 per year).

3) **Feasibility**: A policy option’s feasibility describes how difficult it would be to either implement a new program or change significantly an existing program among the Chumash population. This criterion is measured through the interviews we conducted with key stakeholders and an analysis of the experiences of other tribes and low-income communities implementing similar programs. Based on this information, we created a holistic picture of program feasibility and assigned a qualitative rating to each option ranging from “low feasibility” to “high feasibility.” This rating also incorporates a qualitative measure of any anticipated changes to program effectiveness based on differential implementation, as well as the level of difficulty
that may be involved in scaling an existing program up or down among the Chumash population. We considered three main areas of feasibility:

1. **Staff Capacity**: Current tribal personnel could fully implement the proposed program
2. **Resource Capacity**: Program could be implemented using existing tribal resources, including space and equipment
3. **Scale**: Institutional capacity exists for all potential users

**Ranking Guidelines**:
- **Low Feasibility**: Little to no existing staff, resource, or institutional capacity
- **Moderate Feasibility**: Capacity currently exists, but would require significant reorganization of tribal staff or resources
- **High Feasibility**: Tribe currently possess full capacity to implement program and could offer program to all interested users

**4) Community Support**: A policy option’s community support describes the level of support the addition (or removal) of a program would be expected to receive from members of the Santa Ynez Valley Chumash community. High levels of community support are associated with greater uptake and higher levels of user investment in the program. This criterion is measured through interviews with key members of the Chumash community including Tribal Council members, Education Department staff, and parents and relatives of Tribal students. We distilled the information from the interviews into a qualitative measure analyzing prospective community support of a policy option ranging from “low community support” to “high community support.” Our ratings are based off of the following two components:

1. **Community Acceptance**: The program would be generally accepted by the Chumash community
2. **Political Approval**: The program would likely be officially approved by Chumash Tribal leadership
Ranking Guidelines:

- Low Community Support: Interview comments indicated significant community and political resistance to program
- Some Level of Community Support: Interview comments indicated some levels of community and political acceptance of the program
- High Community Support: Interview comments indicated that the program would be enthusiastically accepted by Chumash tribal members and leadership

Results of Policy Option Evaluation for Proposed Policy Options to Improve Current Education Center Offerings

For each policy option described above, we evaluated the program’s predicted cost based on the current tribal budget, effectiveness, feasibility, and community support based on evidence from our interviews and literature review.

Policy Option 1: Increase Outreach Around Program Eligibility

Effectiveness: Somewhat

Increasing outreach may help locate and offer services to eligible tribal descendants. However, because we found limited evidence of current program effectiveness, increasing outreach is unlikely to have a large, immediate measurable effect on academic outcomes.

Feasibility: High

The Education Department has extensive experience hiring and managing new staff. Therefore, it is easily within the capacity of the Education Department’s to hire and manage the outreach coordinator or intern necessary to carry out this initiative.

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75 Sandoval, Niki, Personal Interview, 11 Feb. 2014.
Community Support: Low

The tribe is proud and supportive of the work being done by the current Education Department staff. Neither the tribal leadership nor the tribal community has expressed interest in adding additional staff or complained about current outreach efforts.\textsuperscript{76}

Cost: Within Budget

$15-40,000 per year (outreach coordinator or intern stipend)
$2,600 per year (1-2 hours/week of Education Director time for intern supervision)
TOTAL: approx. $17,600-$42,600

Policy Option 2: Increase Tutor Accountability

Effectiveness: Somewhat

Our research showed that the tribe’s current tutoring program has only limited effects. Setting individualized goals for tutors may help the program better increase academic achievement, but its effectiveness is contingent on student uptake and attendance, as well as skill variation between individual tutors.

Feasibility: High

The Education Director developed the current tutoring program and has significant experience managing educational personnel.\textsuperscript{77} Additionally, all additional activities related to the tutor accountability program could be housed in the Learning Center.

Community Support: Low

We have noted very few complaints about the efficacy of the current tutors. Little demand exists from tribal leadership, parents or community members for reforming the current tutoring system.\textsuperscript{78}

\textsuperscript{76} Education Committee, Personal Interview, 11 Feb. 2014.
\textsuperscript{77} Education Committee, Personal Interview, 11 Feb. 2014.
\textsuperscript{78} Ibid, Chumash Education Department Tutor, Personal Interview, 11 Feb 2014.
Cost: **Within Budget**

$1,000 per tutor (one time SMART goals training compensation) X 27 Tutors\(^{79}\)

$5,200 per year (4 hours of Education Director time per week for preparation and tutor accountability meetings)

TOTAL: approx. $32,200 per year

**Policy Option 3: Homework Club Attendance Incentives**

*Effectiveness: Low*

Currently many students do not attend Homework Club regularly. However, our evidence suggests that Homework Club does not have a meaningful effect on academic achievement. Therefore, even if this program successfully incentivizes student attendance, the overall effect on achievement is likely to be small or nonexistent.

*Feasibility: High*

We believe that the current Education Department staff has the capacity to monitor Homework Club attendance and distribute rewards.\(^{80}\) This program would not require the use of any additional space.

*Community Support: High*

The Education Department staff indicated that reward systems worked well to incentive behavior. This was true even in a larger scale context like graduation gifts.\(^{81}\)

Cost: **Within Budget**

Note: The rewards would have a value of up to $5 per student per month

$5 rewards X up to 26 students\(^{82}\) X 9 months

$2,600 per year (1-2 hours of Education Department Staff time per week for attendance tracking and reward distribution)

TOTAL: approx. $3,770 per year

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\(^{79}\) Based off the number of tutors employed during the 2012-2013 academic year.

\(^{80}\) Chumash Education Department Staff, Personal Interview, 11 Feb 2014.

\(^{81}\) Ibid.

\(^{82}\) This is the count of students who participated in Homework Club during the 2012-2013 academic year.
Policy Option 4: Testing Initiative

Effectiveness: High
Transitioning to a more widely used test will aid the Education Department in comparing academic growth to non-Chumash students and help develop targeted interventions to bolster specific areas.

Feasibility: High
It is technically feasible to institute alternative testing. The tribe already has testing procedures in place from its experience with administering the Brigance test. The new test would not require any additional space or institutional capacity.

Community Support: Some
The community is very supportive of the tribe’s testing program and strongly desires that the program be as strong as possible. The Education Director originally selected the Brigance test, but is receptive to re-evaluating different testing options.

Cost: Within Budget
$15,000 per year (Data Manager Intern Stipend)
$2,600 per year (1-2 hours of Education Department staff time a week for intern supervision)
$3,160.50 per year (Testing Materials: $225.75 per 25 tests)\(^8^3\)
TOTAL: approx. $21,760.50

Policy Option 5: Provide Public School Students with Increased Educational Subsidies

Effectiveness: Somewhat
This program may remove some students from private schools to public and will allow all students to access supplemental educational services. However, we have limited evidence that public schools will create better outcomes than private schools for all students.

**Feasibility:** Low

The program would require additional staff to distribute the subsidy and monitor its use. The Education Department lacks expertise in creating systems to ensure that the subsidy funds are used appropriately and are safeguarded against fraud.\(^8^4\)

**Community Support:** High

Ultimately, this option would allow more students to access more funding; the community would support the flexibility to access funds that they were previously unable to use.

**Cost:** Over Budget

Note: Of the 81 public school students in the 2012-2013 academic year, each student would use, on average $2,000 in subsidies.  
Note: Of the 45 private school students in the same time period, we conservatively estimate that 10% may be induced to re-enroll in public school.  
$2,000 \times 81 \text{ Students}  
($8,000) \times 5 \text{ Students}  
$162,000 - $40,000 = $122,000  
TOTAL: approx. $122,000 per year

**Policy Option 6: Collect and Share Private School Data**

**Effectiveness:** Somewhat

Our research and a review of the literature show that Santa Ynez public schools may provide a superior education to the private schools in the area. Therefore, re-enrolling in public school may have a positive effect on student academic outcomes for some students. Parents are more likely to switch students out of low performing private schools if they are fully informed on local school quality.

**Feasibility:** High

This program would require the hiring of a data management intern to conduct formal comparisons and run information sessions for parents to

\(^8^4\) Chumash Education Department Staff, Personal Interview, 11 Feb 2014.
present his/her finding. It is well within the Education Department’s capacity to hire and manage an intern, as well as provide the intern with a workspace in the Learning Center.  

Community Support: Some

While some parents may be open to discussing school effectiveness, others may be more resistant as their choice of private school is guided by alternate considerations like religious education and class size.  

Cost: Within Budget

$15,000 per year (data manager stipend)
$2,600 per year (for Education Department staff time in intern management)
TOTAL: approx. $17,600

Policy Option 7: Required Justification for use of Financial Aid

Effectiveness: Low

Stricter requirements may prevent some students from accessing educational and recreational activities. The requirements would be structured to discourage students from participating in programs whose effect on academic achievement is questionable. As a result, this option should not decrease academic achievement, but it is also unlikely to lead to increased academic outcomes.

Feasibility: Low

Implementing this program would require a significant increase in staff capacity. The program would require additional staff to distribute the subsidy and monitor its use.

Community Support: Low

The community is unlikely to support stricter requirements for educational funding, as the requirements are already quite extensive. The Education Committee, in conjunction with the Business Committee, would have to

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85 Sandoval, Niki, Personal Interview, 11 Feb. 2014.
86 Education Committee, Personal Interview, 11 Feb 2014.
approve this decision and write new policy; it is unlikely they will support restricting access to tribal funding for educational purposes.

**Cost: Cost Saving**

Note: We estimate that new requirements will disqualify 20% of students currently receiving tuition subsidies. This estimate is based off the current refusal rate of financial aid requests.\(^{87}\)

\[ \left(\$10,000\right) \times 9 \text{ Students} \]

$40,000 per year (additional Education Department staff to monitor new requirements)

Total: approx. $50,000 in savings

The policy programs described above are summarized in Table 8. Options that became our primary recommendations are highlighted in shades of green. Options that became our secondary recommendations are highlighted in shades of orange. These recommendations will be discussed in depth in Chapter Nine.

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\(^{87}\) Education Department Staff, Personal Interview, 12 Dec 2013.
Table 8: Summary of Proposed Policy Options to Improve Current Education Center Offerings

<table>
<thead>
<tr>
<th>Proposed Policy Option</th>
<th>Effectiveness</th>
<th>Feasibility</th>
<th>Community Support</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Option 1: Increase outreach around program eligibility</td>
<td>SOMEWHAT</td>
<td>HIGH</td>
<td>LOW</td>
<td>WITHIN BUDGET</td>
</tr>
<tr>
<td>Policy Option 2: Increase tutor accountability</td>
<td>SOMEWHAT</td>
<td>HIGH</td>
<td>LOW</td>
<td>WITHIN BUDGET</td>
</tr>
<tr>
<td>Policy Option 3: Attendance Incentives</td>
<td>LOW</td>
<td>HIGH</td>
<td>HIGH</td>
<td>WITHIN BUDGET</td>
</tr>
<tr>
<td>Policy Option 4: Testing Initiative</td>
<td>HIGH</td>
<td>HIGH</td>
<td>SOME</td>
<td>WITHIN BUDGET</td>
</tr>
<tr>
<td>Policy Option 5: Provide Public School Students With Increased Educational Subsidies</td>
<td>SOMEWHAT</td>
<td>LOW</td>
<td>HIGH</td>
<td>OVER BUDGET</td>
</tr>
<tr>
<td>Policy Option 6: Collect and share private school data</td>
<td>SOMEWHAT</td>
<td>HIGH</td>
<td>SOME</td>
<td>WITHIN BUDGET</td>
</tr>
<tr>
<td>Policy Option 7: Stricter requirements for financial aid</td>
<td>LOW</td>
<td>LOW</td>
<td>LOW</td>
<td>COST SAVINGS</td>
</tr>
</tbody>
</table>
Results of Policy Option Evaluation for Proposed Policy Options for New Education Center Programming

For each new possible policy option described above, we created an evaluation of the program’s predicted cost based on the current tribal budget and an evaluation of predicted effectiveness, feasibility, and community support based on our interviews and literature review.

Policy Option 8: Parenting Classes/Nurse Family Partnership

Effectiveness: High

Nurse Family Partnerships’ effect on academic achievement is strongly supported by the academic literature. This effect has been replicated with randomized-controlled trials in multiple settings.88

Feasibility: Somewhat

Nurse-Family Partnership requires the hiring of multiple registered nurses and the capacity to oversee a large-scale multi-faceted program. The Santa Ynez Valley likely lacks a deep enough pool of trained health care workers to staff the program. Further, the Education Department does not have experience managing complex interdepartmental programs. However, many of the nurses could work remotely where other clusters of tribal members are housed. Additionally, the Education Department could partner with the health center in this program, pooling resources but also increasing the need for coordination.

Community Support: Some

The community will be divided in its support of this program. While some members may welcome the support provided by NFP, others may find the program invasive.89 We think after an initial period of learning about the program, the community support could grow.

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89 Sandoval, Niki. Personal Interview. 11 Feb 2014.
Cost: **Within Budget**

$8,000 (per family for a 2.5 year period) X 10 families

TOTAL: approx. $40,000 per year

**Policy Option 9: Preschool**

*Effectiveness: Somewhat*

The literature strongly supports the effect of high quality preschool on academic achievement and the development of social-emotional skills later in life. Guaranteeing access to a high quality pre-school, in contrast to current preschool options, ensures Chumash children will gain key early childhood skills. However, these gains are conditional on students attending a high-quality preschool. For instance, evidence on the effectiveness of the Head Start program (a federally sponsored pre-school program for low-income students of varying quality) on long-term achievement is mixed.

*Feasibility: Somewhat*

This option would require hiring at least one preschool teacher and aide; we believe a current tutor may be able to fill this role. The preschool could be run using currently available space in the learning center, though that would require extensive retrofitting to provide all federally required preschool components. The Education Department would also need to be officially licensed by the state of California.

*Community Support: Some*

The community strongly recognizes the importance of early childhood education. It is a priority of the Tribal Council to ensure kindergarten readiness for all Chumash students. There has been concern raised about the equity of locating a pre-school on the reservation though, since 70% of

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92 Gomez, Richard; Business Committee, Personal Interview, 11 Feb 2014.
lineal descendants do not live on the reservation and would not have access to that resource.  

Cost: Within Budget

$25,000 in start-up costs including retrofitting learning center to be safe for young children

$45,000/year (1 teacher at $27,000/year plus 1 teacher's aide at $18,000/year)

$20,000/year operational costs

($9,695) per child per year for unneeded preschool subsidies X 5 students

TOTAL: $25,000 in upfront costs, and then an operating loss of $16,525/year

Policy Option 10: Incentives to Reduce Absenteeism in Schools

Effectiveness: Somewhat

Evidence of the effectiveness of attendance incentives from other districts is particularly strong. However, these programs were implemented at the school and district-levels, while the Chumash Education Department would only be targeting a small subset of students within a school. Therefore, if changing social norms among students was an important part of these programs’ treatment mechanisms, we might expect this program to be less effective in the Chumash context.

Feasibility: High

This option could be easily integrated into the Education Department’s existing incentive systems rewarding student academic achievement.

Community Support: High

The community is happy to celebrate student achievements of all types already – adding another layer in an area where the tribe is eager to continue to improve would probably be well received.

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93 Sandoval, Niki. Personal Correspondence, 15 April 2014.
94 This is a rough estimate based on correspondence with Dr. Niki Sandoval
96 Operational costs include insurance, janitorial services, accounting and other overhead costs
Cost: Within Budget

$50 (per student, per semester) X number of students with perfect attendance
$0 startup cost
TOTAL: An upper-bound of $12,600/year ($100/year for all students enrolled in Chumash Education Department Programs). However, given how few students currently have perfect or near-perfect attendance, we anticipate the true cost to be closer to $3,000/year.

The new proposed policy programs described above are summarized in table 9. Similar to the table above, options that became our primary recommendations are highlighted in green. Options that became our secondary recommendations highlighted in orange. These recommendations will be discussed in depth in Chapter Nine.

Table 9: Summary of Proposed Policy Options for New Education Center

<table>
<thead>
<tr>
<th>Proposed Policy Option</th>
<th>Effectiveness</th>
<th>Feasibility</th>
<th>Community Support</th>
<th>Cost</th>
</tr>
</thead>
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<td>Policy Option 8:</td>
<td>HIGH</td>
<td>SOMEWHAT</td>
<td>SOME</td>
<td>WITHIN BUDGET</td>
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<tr>
<td>Parenting Classes/Nurse</td>
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<td></td>
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<tr>
<td>Family Partnership</td>
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<td>Policy Option 9:</td>
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<td>SOME</td>
<td>WITHIN BUDGET</td>
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<td>Pre-School</td>
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<tr>
<td>Policy Option 10:</td>
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<td>HIGH</td>
<td>WITHIN BUDGET</td>
</tr>
<tr>
<td>Incentives to Reduce</td>
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<td></td>
</tr>
<tr>
<td>Absenteeism in Schools</td>
<td></td>
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</tr>
</tbody>
</table>
Trade-offs and Decision Making Based on Evaluation of Policy Options

Our four criteria measure very different aspects of each educational policy option. To arrive at our final recommendations, we first eliminated all policy options that received a ranking of “low” in either effectiveness or feasibility. We gave these criteria precedence, because if the program will not achieve the desired effect or is very difficult to implement, there is no need for further consideration. Though low community support may indicate an initial barrier to enactment, with proper planning and leadership, this roadblock may still be overcome. Similarly, high costs are a major concern; however, the tribe’s substantial resources are more likely to allow for the funding of even the most ambitious projects. For this reason, we preserved options for consideration despite receiving ranking of “low” in community support or “over budget” in cost. Accordingly, we first eliminated the following policy options:

- Increase parental outreach about program eligibility,
- Allow children who do not use their subsidy to use some of the value to purchase educational goods,
- Stricter requirements for when a student can obtain funds.

Of the remaining policy options we prioritized those options that received rankings of “high” in effectiveness, in an effort to maximize the tribe’s resources in service of its mission:

- Nurse-Family Partnership,
- Testing Initiative for more student data.

These options form our primary recommendations. We discuss these in more detail in the Recommendations section to follow. Our secondary recommendations consist of the following options:

- Increase tutor accountability,
- Incentives to reduce school absenteeism,
- Collect and disseminate more data on the effectiveness of tuition-based schools, so families can make more-informed decisions about their children’s education.
Based upon our analysis and the comparisons of our initial policy options, we identified a set of primary and secondary recommendations for the tribe. Our primary recommendations represent the policy options we believe will have the largest and most reliable effects on student achievement. If the tribe intends to adjust programming, we believe they should start here. However, we have identified an additional set of secondary recommendations that we expect will also have a meaningful impact on student achievement. Though we do not expect these options to have as strong an effect as our primary recommendations, we believe -- if implemented properly-- these options could still be important components of any future Education Department programming. Below, we describe each of our recommendations in greater detail and provide important next steps for implementation:

**Primary Recommendations**

*Testing Initiative:* The Education Department should invest in the TerraNova test to better monitor student achievement at all grade and ability levels. This test could be administered and tracked by a data management intern. With improved information on student achievement, the Tribe could better target interventions and evaluate the effectiveness of Department initiatives.

Next Steps:
- Create job description for internship,
• Order TerraNova testing supplies,
• Schedule first test administration date.

*Parenting Classes/Nurse Family Partnership:* The Education Department could partner with the Santa Ynez Tribal Health Clinic to support new mothers and families. Such a partnership would ensure that new Chumash community members have access to necessary resources beginning from the earliest stages of their lives, giving them a solid foundation for future personal development and academic success.

**Next Steps:**
- Schedule and in-depth exploratory meeting with the Tribal Health Clinic leadership,
- Create a strategic plan for partnership mutually agreed on by both entities,
- Accept applications for manager-level roles and field nurses.

*Secondary Recommendations*

*Increase Tutor Accountability:* We recommend all tutors employed by the tribe be required to participate in individualized academic goal setting with each client and that the Education Director incorporate progress toward these goals as part of each tutor’s performance evaluation. This program is difficult and time-consuming to launch; however, if fully implemented it could dramatically increase the effectiveness of the existing program.

**Next Steps:**
- Schedule and organize a SMART goals training for all tutors,
- Create or adjust performance review structure and protocol,
- Incorporate student goal setting meetings into each tutor schedule.

*Increase Parent Empowerment:* The Education Department could create a strategy to collect and share private school data. We recommend the tribe hire an
intern to manage data collection on the performance of K-12 schools available to Chumash students and to guide families through the school choice process.

Next Steps:
- Create a job description for an intern,
- Organize all existing data on school performance and tribal membership,
- Create family outreach plan.

Attendance Incentives: The Education Department could create a series of incentives to encourage students to more regularly attend school. For instance, the department could provide students with perfect or near-perfect attendance with gift cards or other rewards. Since students would report information about absences to the Education Department, this option also has the added bonus of serving as an early warning system for students struggling with truancy.

Next Steps:
- Work with Education Center Staff to design incentive plan
- Announce to students and families
- Begin Attendance Tracking
Chapter 10: Conclusion

The Chumash Education Department mission is to raise student achievement for all Chumash students and ultimately allow all Chumash tribal members to achieve economic self-sufficiency. The Department has instituted a comprehensive set of programs aimed at accomplishing these goals. Our group’s analysis focused on evaluating the impact of these programs on academic achievement. We ultimately determined that these programs are well received by the community, but likely do not lead to large improvements in short-term educational outcomes.

Based on the results of our study, we recommended several ways to make the set of programs more effective including the institution of new and more rigorous student testing, greater tutor accountability and increased outreach to the Chumash community.

Additionally we suggest a new programming option focused on early childhood development: the creation and the institution of a Nurse-Family Partnership type program. With these adjustments and further data collection, we are confident that the Santa Ynez Band of Chumash Indians will see marked improvement in academic outcomes and the creation of a creative, sustainable workforce. We sincerely hope that our research and suggestions will be helpful as this community moves forward.
Appendices

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    Reported in Our Tables ...................................................................................... 88
Appendix A: Timeline of Chumash History

Prior to the 1770s: Prior to the arrival of Spanish explorers, the Chumash Indians lived in several areas along the length of the California coastline, at one point covering 7,000 miles from present-day Malibu to present-day Paso Robles.\(^97\) Their population was in the tens of thousands, divided among around 150 independent villages.\(^98\) The Chumash people developed their own form of currency, methods of transportation, trade relations and thriving culture in the temperate and prosperous California environment.

1769: Gaspar de Portola left from Baja, California on a Spanish land expedition. He and his supporters quickly founded five Spanish missions in the Chumash Territory.\(^99\)

1800s: a majority of Chumash people were fully integrated into the mission system. The Chumash people, introduced to new European diseases, experienced an extreme decline in population, high infant mortality rates, and the loss of much of the older generation.\(^100\)

1831: the Chumash population stood at around 15% of original population estimates, around 2,700 people.\(^101\)

1834: Missions were secularized, and the lands previously controlled by the church were gifted to Spanish families with loyalty to the Mexican government. At the same time other large swaths of land given away or sold at a low cost to influential locals as land grants. Mexican families initially promised to section off remaining land for Chumash tribal members but failed to do so, expanding


\(^{100}\) McLendon, Sally and John R. Johnson. “Cultural Affiliation and Lineal Descent of Chumash Peoples in the Channel Islands and the Santa Monica Mountains.” December 1999. (page vi)

the decline in the Chumash population. The remaining Santa Ynez area Chumash people were eventually forced from their homes at the mission and resettled in area called “Zanja de Cota,” where the reservation is located today.

1870s: The area was now largely Anglo and has started to establish strong economic roots, via agriculture, health, and even the rapidly expanding wealth of Hollywood.

1880s: The region was ensconced as a hub of agriculture and horticulture. Remaining Chumash in the area were forced to find work on local ranches and farms.

1901: At the turn of the 20th century, the tribe of about 2,000 people chose to combat larger trends of persistent poverty and unemployment by seeking federal recognition and assistance from the Bureau of Indian Affairs. The 27-acre Santa Ynez

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103 McLendon, Sally and John R. Johnson. “Cultural Affiliation and Lineal Descent of Chumash Peoples in the Channel Islands and the Santa Monica Mountains.” December 1999. (page vii)
105 Ibid.
reservation was established as part of that recognition on December 27th, 1901. See map for location of reservation in California.\footnote{107}

1977: The Reservation Health Clinic opened to serve both tribal members and nearby residents.\footnote{108}

1979: To promote reservation living, a housing program was begun in 1979, bringing increased amenities such as running water and electricity.\footnote{109} Today there are 97 homes and 249 residents on the Santa Ynez Reservation."\footnote{110}

Late 1980s: Based on cases brought by the Seminoles of Florida and the Cabazon band of Mission Indians in California, the Supreme Court ruled that federally recognized tribes could run gaming operations if the state had any form of legalized gambling.

1988: The Indian Gaming Regulatory Act (IGRA) was passed by Congress. It separated Indian gaming into three categories, required that all gaming take place on trust land and mandated that gaming only occur after the tribe reached a legal agreement with their respective states.\footnote{111}

1999: The tribe successfully signed their tribal-state compact in September, having been working on increasing tribal economic self-sufficiency, via planning to open a gambling establishment on the Santa Ynez Reservation.\footnote{112}

2000: In May, the Bureau of Indian Affairs approved the tribal-state compact with the Santa Ynez Band of Chumash Indians.\footnote{113}

2000: California Proposition 1A was approved. Indian gaming was now sanctioned on reservation lands.\footnote{114}


\footnote{110} Ibid.


\footnote{113} Ibid.

\footnote{114} Ibid.
2004: The Chumash Casino and Hotel Opened. The tribe’s primary goal for using the revenue from the casino was continued economic self-sufficiency. In an ongoing effort to diversify revenue sources, the tribe also holds numerous investments in gas stations, real estate, and hotels across the Santa Ynez Valley. The tribe has dedicated its newfound resources to improving the welfare of the Chumash community by instituting monthly pay-outs to supplement the income of enrolled members, providing a free health care to their members at their health clinic, and creating a number of cultural and educational initiatives aimed at increasing the human capital of the next generation of Chumash.

Appendix B: Budget

2012 Budget Total: $3,587,674.00

2013 Budget Total: $3,365,500.00
2013 Grant Funding: $122,585.80

2014 Budget Total: $3,581,700.00
2014 Grant Funding: $250,500.05

This pie chart represents the percentage breakdown of spending from the 2013 Education Department budget. This visual representation was designed to provide information on allocation of the budget; exact line item amounts were made confidential for the purposes of this report.

Chumash Education Department Budget 2013-2014
Appendix C: Interview Protocol

Interview Protocol

We are conducting a project to evaluate the relative effectiveness of the tribe’s current educational programming. We hope that our findings will help the tribe continue to improve educational outcomes for Chumash students. As a crucial piece of this project, we are speaking to Tribal members involved with the educational department to elicit their opinions and advice as well as build context for our analysis. We appreciate your time and welcome your candor. This interview is completely voluntary and you may ask us to end it and destroy our notes at any time. You are also welcome to review the notes and may choose how and if you are identified in our final report.

Tribal Council/Education Committee Members

1. What is your full name and title?

2. How long have you held office within the tribal government?

3. Are there any important things we should know about the tribe before we formulate recommendations?

4. What were past trends or initiatives that the tribe undertook in education? Why were they discontinued?

5. Can you give us an overview of the tribe’s current educational programming?

6. What are your goals for the educational initiatives? What metrics do you care about using to measure success/failures?

7. Do you feel the current initiatives are the best use of tribal funds? If not, what would you suggest?

8. How do you envision the education department in 10 years? What do you think the future holds?

9. What are the greatest needs of the education department?

10. How are the education programs viewed in the community? How do parents and students feel about them in your opinion?

11. What are the greatest successes of the education department so far? What do you want to see continue?

12. Is there anyone else you recommend that we speak to?
Education Center Staff

1. What is your full name and title?

2. How long have you worked at the education center?

3. What were you doing before working at the center?

4. Are there any important things we should know about the tribe before we formulate recommendations?

5. Can you describe your particular role at the learning center, both in general responsibilities and on a day-to-day basis?

6. How do you view the center's goals? How do you evaluate if you are meeting those goals?

7. What do you see as the biggest strengths and weaknesses of the center?

8. What are the general perceptions of parents and students of the center in your opinion? What, if any, are the major criticisms of the center?

9. Do you believe the center is adequately funded? If the center had more money available how would you like to see it used? If the center had less money available, what would you scale back on?

10. Do you believe these programs have improved outcomes for Chumash students? Is there any group of students you believe has particularly benefited? Is there any group that could be helped more?

11. Is there anyone else you recommend that we speak to?

Tutors

1. What is your full name and title?

2. How long have you worked as a tutor? How long have you worked as a tutor for the Chumash?

3. How did you find out about this opportunity? What was the hiring process like?

4. What is your certification level and subject?

5. What grade level/subjects do you feel the most confident tutoring? Are these the grade levels/subjects that you’re currently tutoring for the tribe?

6. What were you doing before tutoring?
7. How would you describe your interactions with the center/education department?

8. What, if anything, could help you do your job more effectively?

9. What do you see as the biggest barriers to achievement for the students you work with?

10. Compared to non-Chumash students, do you feel like you’re progressing at the same pace with your Chumash students?

(Do you tutor Non-Chumash students?), do you see any differences in how they are responding to the tutoring?

11. Is there anything else about your job that we should know? Is there anyone else that we should speak to?
Appendix D: STATA Do-File

The following is the STATA Do-File used to produce all of our quantitative results.

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egen absences1112 = rowtotal(hasabsences11_2 hasabsences12_2)
egen absences111213 = rowtotal(hasabsences11_2 hasabsences12_2 hasabsences13_2)
gen hasabsences1213 = 1 if absences1213>1 & year>2011 & year<2014 & newabsences!=. recode hasabsences1213 (.=0) gen hasabsences1213_2 = 1 if absences1213>1 & year>2011 & year<2014 & newabsences!=. recode hasabsences1213_2 (.=0) if absences1213==0 gen hasabsences1112 = 1 if absences1112>1 & year>2010 & year<2013 & newabsences!=. recode hastutor1112(.=0) gen hasabsences1112_2 = 1 if absences1112>1 & year>2010 & year<2013 & newabsences!=. recode hasabsences1112_2 (.=0) if absences1112==0 gen hasabsences111213 = 1 if absences111213>2 & year>2010 & year<2014 & newabsences!=. recode hasabsences111213 (.=0)

**Math Failed**
gen haspfm13 = 1 if percentfailed_math!=. & year==2013
gen haspfm12 = 1 if percentfailed_math!=. & year==2012
gen haspfm11 = 1 if percentfailed_math!=. & year==2011

egen haspfm13_2 = sum(haspfm13), by(id) recode haspfm13_2 (2/max=1) egen haspfm12_2 = sum(haspfm12), by(id) recode haspfm12_2 (2/max=1) egen haspfm11_2 = sum(haspfm11), by(id) recode haspfm11_2 (2/max=1)

egen pfm1213 = rowtotal(haspfm12_2 haspfm13_2) egen pfm1112 = rowtotal(haspfm11_2 haspfm12_2) egen pfm111213 = rowtotal(haspfm11_2 haspfm12_2 haspfm13_2) gen haspfm1213 = 1 if pfm1213>1 & year>2011 & year<2014 & percentfailed_math!=. recode haspfm1213 (.=0) gen haspfm1112 = 1 if pfm1112>1 & year>2010 & year<2013 & percentfailed_math!=. recode haspfm1112(.=0) gen haspfm111213 = 1 if pfm111213>2 & year>2010 & year<2014 & percentfailed_math!=. recode haspfm111213 (.=0)

**English Failed**
gen haspfeng13 = 1 if percentfailed_ela!=. & year==2013
gen haspfeng12 = 1 if percentfailed_ela!=. & year==2012
gen haspfeng11 = 1 if percentfailed_ela!=. & year==2011

egen haspfeng13_2 = sum(haspfeng13), by(id) recode haspfeng13_2 (.=0) egen haspfeng12_2 = sum(haspfeng12), by(id) recode haspfeng12_2 (.=0) egen haspfeng11_2 = sum(haspfeng11), by(id) recode haspfeng11_2 (.=0)

egen pfeng1213 = rowtotal(haspfeng12_2 haspfeng13_2) egen pfeng1112 = rowtotal(haspfeng11_2 haspfeng12_2) egen pfeng111213 = rowtotal(haspfeng11_2 haspfeng12_2 haspfeng13_2) gen haspfeng1213 = 1 if pfeng1213>1 & year>2011 & year<2014 & percentfailed_ela!=. recode haspfeng1213 (.=0) gen haspfeng1112 = 1 if pfeng1112>1 & year>2010 & year<2013 & percentfailed_ela!=. recode haspfeng1112(.=0) gen haspfeng111213 = 1 if pfeng111213>2 & year>2010 & year<2014 & percentfailed_ela!=. recode haspfeng111213 (.=0)

tab id if hastutor1112==1 tab id if hastutor1213==1 tab id if hastutor111213==1
tab id if hasmath1112==1
tab id if hasmath1213==1
tab id if hasmath111213==1

tab id if hasela1112==1
tab id if hasela1213==1
tab id if hasela111213==1

tab id if haspfm1112==1
tab id if haspfm1213==1
tab id if haspfm111213==1

tab id if haspfeng1112==1
tab id if haspfeng1213==1
tab id if haspfeng111213==1

tab id if hasabsences1112==1
tab id if hasabsences1213==1

*2011-2012*

sum star_math_score if year==2011 & hastutor1112==1 & hasmath1112==1
sum star_math_score if year==2012 & hastutor1112==1 & hasmath1112==1
sum star_math_score if year==2011 & hastutor1112==0 & hasmath1112==1
sum star_math_score if year==2012 & hastutor1112==0 & hasmath1112==1

sum star_ela_score if year==2011 & hastutor1112==1 & hasela1112==1
sum star_ela_score if year==2012 & hastutor1112==1 & hasela1112==1
sum star_ela_score if year==2011 & hastutor1112==0 & hasela1112==1
sum star_ela_score if year==2012 & hastutor1112==0 & hasela1112==1

sum newabsences if year==2011 & hastutor1112==1 & hasabsences1112==1
sum newabsences if year==2012 & hastutor1112==1 & hasabsences1112==1
sum newabsences if year==2011 & hastutor1112==0 & hasabsences1112==1
sum newabsences if year==2012 & hastutor1112==0 & hasabsences1112==1

sum percentfailed_math if year==2011 & hastutor1112==1 & haspfm1112==1
sum percentfailed_math if year==2012 & hastutor1112==1 & haspfm1112==1
sum percentfailed_math if year==2011 & hastutor1112==0 & haspfm1112==1
sum percentfailed_math if year==2012 & hastutor1112==0 & haspfm1112==1

sum percentfailed_ela if year==2011 & hastutor1112==1 & haspfeng1112==1
sum percentfailed_ela if year==2012 & hastutor1112==1 & haspfeng1112==1
sum percentfailed_ela if year==2011 & hastutor1112==0 & haspfeng1112==1
sum percentfailed_ela if year==2012 & hastutor1112==0 & haspfeng1112==1

*2012-2013*

sum star_math_score if year==2012 & hastutor1213==1 & hasmath1213==1
sum star_math_score if year==2013 & hastutor1213==1 & hasmath1213==1
sum star_math_score if year==2012 & hastutor1213==0 & hasmath1213==1
sum star_math_score if year==2013 & hastutor1213==0 & hasmath1213==1

sum star_ela_score if year==2012 & hastutor1213==1 & hasela1213==1
sum star_ela_score if year==2013 & hastutor1213==1 & hasela1213==1
sum star_ela_score if year==2012 & hastutor1213==0 & hasela1213==1
sum star_ela_score if year==2013 & hastutor1213==0 & hasela1213==1

sum newabsences if year==2012 & hastutor1213==1 & hasabsences1213==1
sum newabsences if year==2013 & hastutor1213==1 & hasabsences1213==1
sum newabsences if year==2012 & hastutor1213==0 & hasabsences1213==1
sum newabsences if year==2013 & hastutor1213==0 & hasabsences1213==1

sum percentfailed_math if year==2012 & hastutor1213==1 & haspfm1213==1
sum percentfailed_math if year==2013 & hastutor1213==1 & haspfm1213==1
sum percentfailed_math if year==2012 & hastutor1213==0 & haspfm1213==1
sum percentfailed_math if year==2013 & hastutor1213==0 & haspfm1213==1

sum percentfailed_ela if year==2012 & hastutor1213==1 & haspfeng1213==1
sum percentfailed_ela if year==2013 & hastutor1213==1 & haspfeng1213==1
sum percentfailed_ela if year==2012 & hastutor1213==0 & haspfeng1213==1
sum percentfailed_ela if year==2013 & hastutor1213==0 & haspfeng1213==1

browse id acadyear fem

sort hastutor1213 id
edit id acadyear hastutor1213

*TUTORS
egen tutorhours = sum(newtutorhrs), by(id year)
sort id year star_math_score star_ela_score
drop if id=id[_n] & year=year[_n]

sum tutorhours if year==2011 & hastutor==1
sum tutorhours if year==2011 & hastutor==1 & hastutor1112==1
sum tutorhours if year==2011 & hastutor==1 & hastutor111213==1
sum tutorhours if year==2012 & hastutor==1
sum tutorhours if year==2012 & hastutor==1 & hastutor1112==1
sum tutorhours if year==2012 & hastutor==1 & hastutor1213==1
sum tutorhours if year==2012 & hastutor==1 & hastutor111213==1
sum tutorhours if year==2013 & hastutor==1
sum tutorhours if year==2013 & hastutor==1 & hastutor1213==1
sum tutorhours if year==2013 & hastutor==1 & hastutor111213==1

*Homework Club
gen hwclub_y = 1 if hwclub_fall!="" | hwclub_spring!="" | hwclub_winter!=""
gen hwclub_fall2=1 if hwclub_fall!="
gen hwclub_spring2=1 if hwclub_spring!="
gen hwclub_winter2=1 if hwclub_winter!="
egen hwclub_t = rowtotal(hwclub_fall2 hwclub_spring2 hwclub_winter2)
replace hwclub_y = 1 if hwclub_fall!="" | hwclub_spring!="" | hwclub_winter!="
recode hwclub_y (.=0) if chumash==1

sum age if hwclub_y==1 & year==2012
sum age if hwclub_y==0 & year==2012
sum age if hwclub_y==1 & year==2013
sum age if hwclub_y==0 & year==2013

sum fem if hwclub_y==0 & year==2012
sum fem if hwclub_y==1 & year==2012
sum fem if hwclub_y==0 & year==2013
sum fem if hwclub_y==1 & year==2013

sum newgrade if hwclub_y==0 & year==2012
sum newgrade if hwclub_y==1 & year==2012
sum newgrade if hwclub_y==0 & year==2013
sum newgrade if hwclub_y==1 & year==2013

sum publicschool if hwclub_y==0 & year==2012
sum publicschool if hwclub_y==1 & year==2012
sum publicschool if hwclub_y==0 & year==2013
sum publicschool if hwclub_y==1 & year==2013

sum star_math_score if hwclub_y==0 & year==2012
sum star_math_score if hwclub_y==1 & year==2012
sum star_math_score if hwclub_y==0 & year==2013
sum star_math_score if hwclub_y==1 & year==2013

sum star_ela_score if hwclub_y==0 & year==2012
sum star_ela_score if hwclub_y==1 & year==2012
sum star_ela_score if hwclub_y==0 & year==2013
sum star_ela_score if hwclub_y==1 & year==2013

sum newabsences if hwclub_y==0 & year==2012
sum newabsences if hwclub_y==1 & year==2012
sum newabsences if hwclub_y==0 & year==2013
sum newabsences if hwclub_y==1 & year==2013

sum percentfailed_math if hwclub_y==0 & year==2012
sum percentfailed_math if hwclub_y==1 & year==2012
sum percentfailed_math if hwclub_y==0 & year==2013
sum percentfailed_math if hwclub_y==1 & year==2013

sum percentfailed_ela if hwclub_y==0 & year==2012
sum percentfailed_ela if hwclub_y==1 & year==2012
sum percentfailed_ela if hwclub_y==0 & year==2013
sum percentfailed_ela if hwclub_y==1 & year==2013

*Public School

gen haspubschol13 = 1 if publicschool==0 & year==2013
gen haspubschol12 = 1 if publicschool==0 & year==2012
gen haspubschol11 = 1 if publicschool==0 & year==2011
egen haspubschol13_2 = sum(haspubschol13), by(id)
recode haspubschol13_2 (2/max=1)
egen haspubschol12_2 = sum(haspubschol12), by(id)
recode haspubschol12_2 (2/max=1)
egen haspubschol11_2 = sum(haspubschol11), by(id)
recode haspubschol11_2 (2/max=1)

egen pubschol1213 = rowtotal(haspubschol12_2 haspubschol13_2)
egen pubschol1112 = rowtotal(haspubschol11_2 haspubschol12_2)
egen pubschol111213 = rowtotal(haspubschol11_2 haspubschol12_2 haspubschol13_2)

gen hasprivschool1213 = 1 if pubschol1213>1 & year>2011 & year<2014 & publicschool!=.
recode hasprivschool1213 (.=0)
recode hasprivschool1213 (0=.) if chumash==0
gen hasprivschool1112 = 1 if pubschol1112>1 & year>2010 & year<2013 & publicschool!=.
recode hasprivschool1112 (.=0)
recode hasprivschool1112 (0=.) if chumash==0
gen hasprivschool111213 = 1 if pubschol111213>2 & year>2010 & year<2014 & publicschool!=.
recode hasprivschool111213 (.=0)
recode hasprivschool111213 (0=.) if chumash==0

sum age if year==2011
sum age if publicschool==1 & year==2011
sum age if publicschool==0 & year==2011
sum age if year==2012
sum age if publicschool==1 & year==2012
sum age if publicschool==0 & year==2012
sum age if year==2013
sum age if publicschool==1 & year==2013
sum age if publicschool==0 & year==2013

sum fem if year==2011
sum fem if publicschool==1 & year==2011
sum fem if publicschool==0 & year==2011
sum fem if year==2012
sum fem if publicschool==1 & year==2012
sum fem if publicschool==0 & year==2012
sum fem if year==2013
sum fem if publicschool==1 & year==2013
sum fem if publicschool==0 & year==2013

sum newgrade if year==2011
sum newgrade if publicschool==1 & year==2011
sum newgrade if publicschool==0 & year==2011
sum newgrade if year==2012
sum newgrade if publicschool==1 & year==2012
sum newgrade if publicschool==0 & year==2012
sum newgrade if year==2013
sum newgrade if publicschool==1 & year==2013
sum newgrade if publicschool==0 & year==2013

sum newabsences if year==2011
sum newabsences if publicschool==1 & year==2011
sum newabsences if publicschool==0 & year==2011
sum newabsences if year==2012
sum newabsences if publicschool==1 & year==2012
sum newabsences if publicschool==0 & year==2012
sum newabsences if year==2013
sum newabsences if publicschool==1 & year==2013
sum newabsences if publicschool==0 & year==2013

sum percentfailed_math if year==2011
sum percentfailed_math if publicschool==1 & year==2011
sum percentfailed_math if publicschool==0 & year==2011
sum percentfailed_math if year==2012
sum percentfailed_math if publicschool==1 & year==2012
sum percentfailed_math if publicschool==0 & year==2012
sum percentfailed_math if year==2013
sum percentfailed_math if publicschool==1 & year==2013
sum percentfailed_math if publicschool==0 & year==2013

sum percentfailed_ela if year==2011
sum percentfailed_ela if publicschool==1 & year==2011
sum percentfailed_ela if publicschool==0 & year==2011
sum percentfailed_ela if year==2012
sum percentfailed_ela if publicschool==1 & year==2012
sum percentfailed_ela if publicschool==0 & year==2012
sum percentfailed_ela if year==2013
sum percentfailed_ela if publicschool==1 & year==2013
sum percentfailed_ela if publicschool==0 & year==2013

*Brigance
newbrign_vocab_s
newbrig_fluency_s
newbrig_fluency_p
newbrig_compskills_s
newbrig_comparate_s
newbrig_comparate_p

egen brigold_v = rowmean(brig_vocab_p brig_context_p newbrig_fluency_p ///
brig_spelling_p)
egen brigold_m = rowmean(brig_compskills_p newbrig_comparate_p brig_psolving_p)

egen brigyoung_v = rowmean(brig_letterslowers_p brig_lettersupper_p brig_lowerdict_p ///
**CHUMASH EDUCATIONAL INITIATIVES**

```stata
egen brigyoung_m = rowmean(brig_numeralcomp_p brig_countrote_p brig_count_p ///
brig_readnumb_p)

corr brigold_v star_ela_score
corr brigold_m star_math_score
corr brigyoung_v star_ela_score
corr brigyoung_m star_math_score

*Niki's Stuff*
recode newlineal_descend (.=0) if _merge==3
gen newtution = 1 if tuition_aid=="x"
recode newtution (.=0) if _merge==3
gen newother = 1 if other_aid=="x"
recode newother (.=0) if _merge==3
gen newfosterchild=1 if fosterchild=="x"
recode newfosterchild (.=0) if _merge==3

gen newmarital = 1 if maritalstatus=="M"
replace newmarital=0 if maritalstatus=="S"
gen newiep=1 if iep=="x"
recode newiep (.=0) if _merge==3
gen newtutoring_niki = 1 if tutoring_niki=="x"
recode newtutoring (.=0) if _merge==3

* Fixed Effects*
gen y2013 = 1 if year==2013
recode y2013 (.=0)
gen interaction = y2013*chumash
reg star_math_score chumash y2013 interaction if year==2012 | year==2013,
cluster(id)
areg star_math_score chumash y2013 interaction if hasmath1213_2==1, absorb(id)
reg star_ela_score chumash y2013 interaction if hasela1213_2==1, cluster(id)

gen y2012= 1 if year==2012
recode y2012 (.=0)
gen y2011 = 1 if year==2011
recode y2011 (.=0)
gen interaction2 = y2012*chumash
gen hasmath1112_2 = hasmath1112
edit id year hasmath1112 star_math_score hasmath1112_2 if year==2011 | year==2012
reg star_math_score chumash y2012 interaction2 if hasmath1112_2==1, cluster(id)
gen hasela1112_2 = hasela1112
edit id year hasela1112 star_ela_score hasela1112_2 if year==2011 | year==2012
reg star_ela_score chumash y2012 interaction2 if hasela1112_2==1, cluster(id)
reg star_math_score chumash y2013 interaction if hastutor1213_2==1, cluster(id)
reg star_ela_score chumash y2013 interaction if hastutor1213_2==1 &
hasela1213_2==1, cluster(id)
reg star_math_score chumash y2012 interaction2 if hastutor1112_2==1, cluster(id)
reg star_ela_score chumash y2012 interaction2 if hastutor1112_2==1 &
hasela1112==1, cluster(id)

gen tutorinteract2 = hastutor*year2013
reg star_math_score hastutor year2013 tutorinteract2 if hasmath1213==1
reg star_ela_score hastutor year2013 tutorinteract2 if hasela1213==1

gen hwclubinteract2 = hwclub_y*year2013
reg star_math_score hwclub_y year2013 hwclubinteract2 if hasmath1213==1
reg star_ela_score hwclub_y year2013 hwclubinteract2 if hasela1213==1
```
sum star_math_score if hasmath1213_2 == 1 & chumash==1 & year==2012
sum star_math_score if hasmath1213_2 == 1 & chumash==0 & year==2012
sum star_math_score if hasmath1213_2 == 1 & chumash==1 & year==2013
sum star_math_score if hasmath1213_2 == 1 & chumash==0 & year==2013

sum star_math_score if hasmath1112_2 == 1 & chumash==1 & year==2011
sum star_math_score if hasmath1112_2 == 1 & chumash==0 & year==2011
sum star_math_score if hasmath1112_2 == 1 & chumash==1 & year==2012
sum star_math_score if hasmath1112_2 == 1 & chumash==0 & year==2012

sum star_ela_score if hasela1213_2 == 1 & chumash==1 & year==2012
sum star_ela_score if hasela1213_2 == 1 & chumash==0 & year==2012
sum star_ela_score if hasela1213_2 == 1 & chumash==1 & year==2013
sum star_ela_score if hasela1213_2 == 1 & chumash==0 & year==2013

sum star_math_score if hastutor1213_2 == 1 & chumash==1 & year==2012
sum star_math_score if hastutor1213_2 == 1 & chumash==0 & year==2012
sum star_math_score if hastutor1213_2 == 1 & chumash==1 & year==2013
sum star_math_score if hastutor1213_2 == 1 & chumash==0 & year==2013

sum star_ela_score if hastutor1213_2 == 1 & chumash==1 & year==2011
sum star_ela_score if hastutor1213_2 == 1 & chumash==0 & year==2011
sum star_ela_score if hastutor1213_2 == 1 & chumash==1 & year==2012
sum star_ela_score if hastutor1213_2 == 1 & chumash==0 & year==2012

reg star_math_score chumash y2013 interaction if hashwclub1213_2==1, cluster(id)
reg star_ela_score chumash y2013 interaction if hashwclub1213_2==1, cluster(id)
sum star_math_score if year==2011 & chumash==0 & hascounterfact==1
sum star_math_score if year==2012 & chumash==1 & hascounterfact==1
sum star_math_score if year==2012 & chumash==0 & hascounterfact==1
sum star_math_score if year==2013 & chumash==1 & hascounterfact==1
sum star_math_score if year==2013 & chumash==0 & hascounterfact==1

sum star_ela_score if year==2011 & chumash==1 & hascounterfact_ela==1
sum star_ela_score if year==2011 & chumash==0 & hascounterfact_ela==1
sum star_ela_score if year==2012 & chumash==1 & hascounterfact_ela==1
sum star_ela_score if year==2012 & chumash==0 & hascounterfact_ela==1
sum star_ela_score if year==2013 & chumash==1 & hascounterfact_ela==1
sum star_ela_score if year==2013 & chumash==0 & hascounterfact_ela==1

*STAR
xtreg star_math_score hastutor if hasmath1213==1 & chumash==1, i(id) fe vce(robust)
xtreg star_math_score hastutor if hasmath1112==1 & chumash==1, i(id) fe vce(robust)
xtreg star_ela_score hastutor if hasela1213==1 & chumash==1, i(id) fe vce(robust)
xtreg star_ela_score hastutor if hasela1112==1 & chumash==1, i(id) fe vce(robust)
xtreg star_math_score hwclub_y if hasmath1213==1 & chumash==1, i(id) fe vce(robust)
xtreg star_ela_score hwclub_y if hasmath1213==1 & chumash==1, i(id) fe vce(robust)
gen tutorinteract1213 = hastutor1213_22*year2013
gen tutorinteract1112 = hastutor1112_22*year2012
reg star_math_score hastutor1213_22 year2013 tutorinteract1213 ///
  if hasmath1213==1 & chumash==1, cluster(id)
reg star_ela_score hastutor1213_22 year2013 tutorinteract1213 if hasela1213==1 &
  chumash==1, cluster(id)
reg star_math_score hastutor1112_22 year2012 tutorinteract1112 if hasmath1112==1 &
  chumash==1, cluster(id)
reg star_ela_score hastutor1112_22 year2012 tutorinteract1112 if hasela1112==1 &
  chumash==1, cluster(id)
gen hwclubinteract1213 = hashwclub1213_22*year2013
reg star_math_score hashwclub1213_22 year2013 hwclubinteract1213 if hasmath1213==1 &
  chumash==1, cluster(id)
reg star_ela_score hashwclub1213_22 year2013 hwclubinteract1213 if hasela1213==1 &
  chumash==1, cluster(id)

*Absences
xtreg newabsences hastutor age if hasabsences1213==1 & chumash==1, i(id) fe vce(robust)
xtreg newabsences hwclub_y age if hasabsences1213==1 & chumash==1, i(id) fe vce(robust)
xtreg percentfailed_math hastutor age if haspfm1213==1, i(id) fe vce(robust)
xtreg percentfailed_math hwclub_y age if haspfm1213==1 & chumash==1, i(id) fe vce(robust)
xtreg percentfailed_ela hastutor age if haspfeng1213==1 & chumash==1, i(id) fe vce(robust)
xtreg percentfailed_ela hwclub_y age if haspfeng1213==1 & chumash==1, i(id) fe vce(robust)

xtreg newabsences hwclub_y age if hasabsences1213==1 & chumash==1, i(id) fe vce(robust)
xtreg newabsences publicschool age if hasabsences1213==1, i(id) fe vce(robust)
gen absencesinteract1213 = hasabsences1213_2*year2013
gen absencesinteract1112 = hasabsences1112_2*year2012
reg absencesinteract

*Math Failed
xtreg percentfailed_math hastutor if haspfm1213==1 & chumash==1, i(id) fe vce(robust)
xtreg percentfailed_math hwclub_y if haspfm1213==1 & chumash==1, i(id) fe vce(robust)
xtreg percentfailed_math publicschool if haspfm1213==1, i(id) fe vce(robust)

*ELA Failed
xtreg percentfailed_ela hastutor age if haspfeng1213==1 & chumash==1, i(id) fe vce(robust)
xtreg percentfailed_ela hwclub_y if haspfeng1213==1 & chumash==1, i(id) fe vce(robust)
xtreg percentfailed_ela publicschool if haspfeng1213==1, i(id) fe vce(robust)

*Differences Method
sort id year
gen absencesdif = newabsences - newabsences[_n] if id==id[_n-1]
gen tutordif2 = hastutor - hastutor[_n-1]
sort id year
gen agedif = age - age[_n-1] if id == id[_n-1]
sort id year
gen pfmdif = percentfailed_math - percentfailed_math[_n-1] if id==id[_n-1]
gen hwdif = hwclub_y - hwclub_y[_n-1] if id==id[_n-1]
sort id year
gen mathdif = star_math_score - star_math_score[_n-1] if id==id[_n-1]
histogram(mathdif) if hastutor1213==1, bin(6) freq

*Histogram
histogram(mathdif) if chumash==1 & hasmath1213_2==1 & hastutor1213_2==1, width(15) freq ///
   title("Change in Math CST Score Between 2012 and 2013" "for Chumash Children with Tutors") ///
   xtitle("Change in Math Score") ///
   ytitle("Number of Students") ///
   xlab(-75 (25) 75) ///
   ylab(0 (1) 4)
histogram(mathdif) if chumash==0 & hasmath1213_2==1 & hastutor1213_2==1, width(15) freq ///
   title("Change in Avg Math CST Score Between 2012 and 2013" "for Classmates of Chumash Children with Tutors") ///
   xtitle("Change in Math Score") ///
   ytitle("Number of Students") ///
   xlab(-75 (25) 75) ///
   ylab(0 (1) 4)

histogram(mathdif) if chumash==1 & hasela1213_2==1 & hastutor1213_2==1, width(15) freq ///
   title("Change in ELA CST Score Between 2012 and 2013" "for Chumash Children with Tutors") ///
   xtitle("Change in ELA Score") ///
   ytitle("Number of Students") ///
   xlab(-75 (25) 75) ///
   ylab(0 (1) 4)
histogram(mathdif) if chumash==0 & hasela1213_2==1 & hastutor1213_2==1, width(15) freq ///
   title("Change in Avg ELA CST Score Between 2012 and 2013" "for Classmates of Chumash Children with Tutors") ///
   xtitle("Change in ELA Score") ///
   ytitle("Number of Students") ///
   xlab(-75 (25) 75) ///
   ylab(0 (1) 4)
Appendix E: Number of Students with Data for all Averages Reported in Our Tables

<table>
<thead>
<tr>
<th>Number of Students in Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>2011</td>
</tr>
<tr>
<td>2012</td>
</tr>
<tr>
<td>2013</td>
</tr>
<tr>
<td><strong>Average</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Students in Table 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>2011</td>
</tr>
<tr>
<td>2012</td>
</tr>
<tr>
<td>2013</td>
</tr>
<tr>
<td><strong>Average</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Students in Table 3a &amp; 3b</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>2011</td>
</tr>
<tr>
<td>2012</td>
</tr>
<tr>
<td>2013</td>
</tr>
<tr>
<td><strong>Average</strong></td>
</tr>
</tbody>
</table>
References


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