



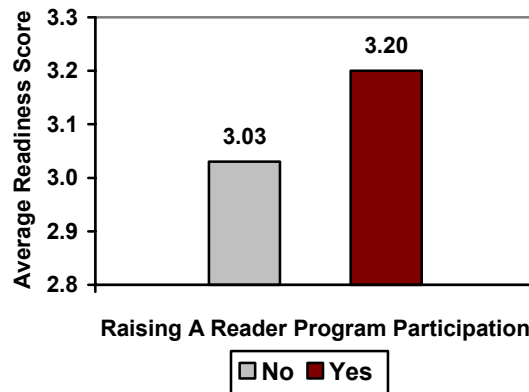
## **Analysis of the *Raising A Reader* program**

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- Background**      The *Raising A Reader* program is an early literacy program in San Mateo County aimed at promoting early literacy skills and a love of reading in children and their families. In the 2001 San Mateo County School Readiness Assessment, kindergarten students who had participated in *Raising A Reader* had higher overall school readiness scores than children who had not. However, crosstabulations of the Assessment data also found that these two cohorts also had varying demographic, socio-cultural or linguistic characteristics.
- Purpose**            Applied Survey Research therefore performed additional analyses of the 2001 Assessment data to determine whether participation in the *Raising A Reader* program enhanced children’s readiness for school after controlling for differences in other demographic or social variables that may impact such readiness. This will examine whether higher readiness scores obtained by *Raising A Reader* participants may be associated with other differences that may exist between those children who participated in *Raising A Reader* and those children who did not. After taking into account these differences, did *Raising A Reader* participants still receive higher readiness scores?
- Research  
Process**            The Child Observation form used in the 2001 San Mateo School Readiness Assessment consisted of 20 dimensions of school readiness along which each child was observed. A 4-point rating scale was used to evaluate the extent to which a child was demonstrating each skill, knowledge or behavior, with 1=’Not yet’, 2 = ‘Beginning’, 3 = ‘In progress’, 4 = ‘Proficient’. A mean score across the 20 observations was calculated for each child, and this was the dependent variable utilized in this analysis.
- An initial analysis of variance (ANOVA) tested whether a significant difference existed in readiness scores for children who had participated in the *Raising A Reader* program compared to those who had not. A significant difference was found between these two

groups<sup>1</sup>, with those children who had participated having an average readiness score of 3.20 on the observation form compared to an average readiness score of 3.03 for those children who had not participated in the program (Figure 1).

**Figure 1: Average Readiness Score of Raising A Reader Participants Compared to Non-participants**



A question unanswered by this ANOVA, however, is whether this observed difference in readiness scores would still be found after controlling for differences that may exist between these two groups. Data was collected on several demographic, socio-cultural and linguistic characteristics, and the current analysis was conducted to see whether the higher readiness scores observed for *Raising A Reader* participants could instead be attributable to differences between these two groups of children along one or more of these other characteristics. For example, within the 2001 data, children with English as their primary language received higher readiness scores than children for whom English was not their primary language. Therefore, it could be the case that a higher proportion of *Raising A Reader* participants had English as their primary language than did children who had not participated in *Raising A Reader*, and that this difference contributed to the results observed in Figure 1.

To further investigate the relationship between participation in the *Raising A Reader* program and readiness scores on the Child Observation form, an analysis of covariance (ANCOVA) was performed on the 2001 San Mateo School Readiness Assessment data. This analysis investigated whether the higher readiness scores by *Raising A Reader* participants would still be observed after controlling for the influence of variable demographic and socio-economic backgrounds. Several variables and combinations of variables were tested to ensure they met the criteria for inclusion in the analysis (see Notes for more details). The following characteristics were suitable for inclusion and were

<sup>1</sup>  $F(1, 394) = 5.73, p < .05,$

therefore examined to determine their influence on the differences in readiness scores observed in the ANOVA: age, ethnicity (Caucasian/non-Caucasian), English learner status, eligibility for free and reduced lunch, and prior attendance at pre-school.

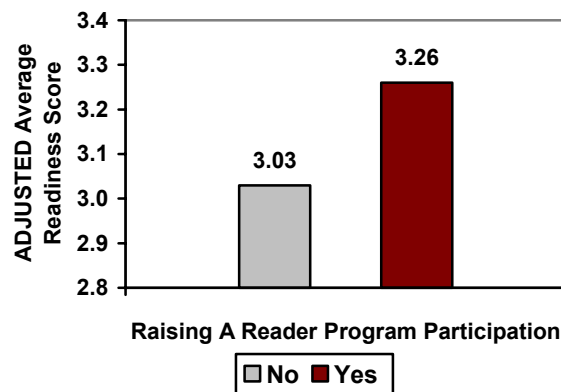
In the ANCOVA, each of the above characteristics was included as a covariate, which means that any differences observed along these dimensions across the two groups of interest (those who had participated in *Raising A Reader* and those who had not), are taken into account and readiness scores are adjusted to account for these differences. A subsequent test of significance on the adjusted readiness scores indicates whether the initially observed higher scores for *Raising A Reader* participants would still be observed after taking into account differences on the covariates.

## Finding

The results of the ANCOVA indicate that after adjusting for differences in age, ethnicity, English Learner status, eligibility for free and reduced lunch, and prior attendance at pre-school, children who had participated in the *Raising A Reader* program had significantly higher readiness scores <sup>2</sup> than children who had not participated in this program.

The average adjusted readiness score of children who had participated in the *Raising A Reader* program was 3.26, compared to an average readiness score of 3.03 for those children who had not participated in the program (Figure 2). This demonstrates that higher readiness scores were associated with *Raising A Reader* participation, after taking into account the influence of each of the above factors.

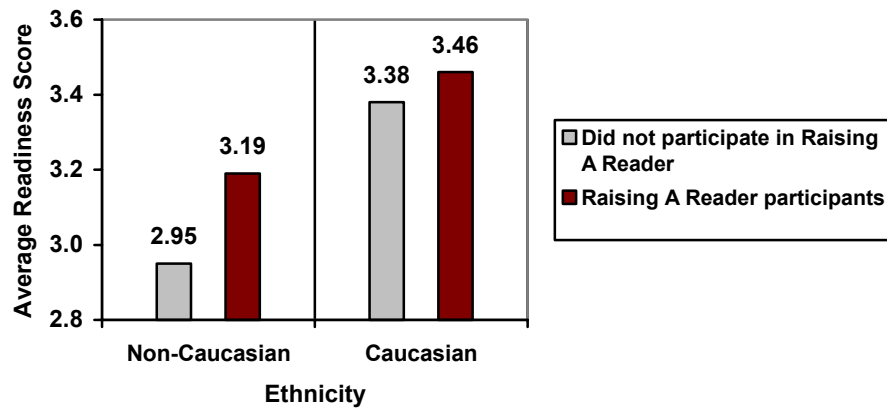
Figure 2: Raising A Reader Participation and ADJUSTED Average Readiness Score



## Notes

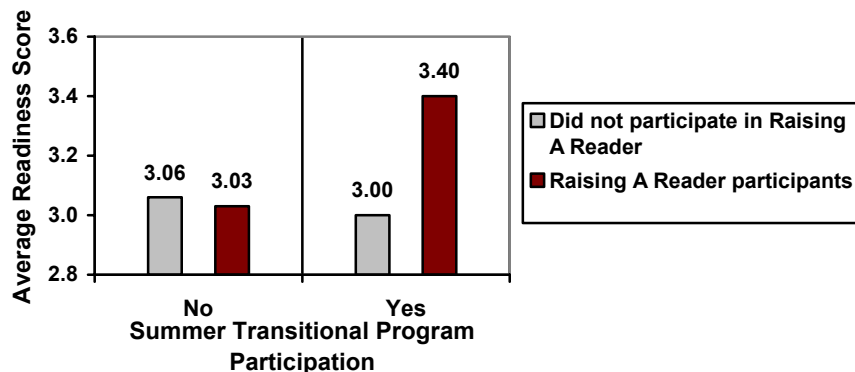
In order for a variable to be included as a covariate, a similar relationship needs to exist between that variable and the dependent variable (readiness scores) for each group (those who had participated in *Raising A Reader* and those who had not). For instance, as seen in Figure 3 below, participation in *Raising A Reader* was associated with higher readiness scores for both ethnicity groups (Caucasians and Non-Caucasians), though Caucasians with *Raising A Reader* participation had much higher scores than non-Caucasians. This illustrates that higher readiness scores associated with *Raising A Reader* participation were observed for both Caucasians and Non-Caucasians.

**Figure 3: Raising A Reader Participation, Ethnicity, and Average Readiness Score**



This type of 'predictable' relationship was observed with each of the other covariates, which meant they were valid covariates to include in the ANCOVA analysis. However, participation in Summer Transitional Program could not be included as a covariate in the ANCOVA because this variable did not meet the necessary requirements for inclusion in the analysis, as illustrated below in Figure 4.

**Figure 4: Raising A Reader Participation, Summer Transitional Program Participation, and Average Readiness Score**



For children who did not participate in the Summer Transitional Program, participation in the *Raising A Reader* program was not associated with higher readiness scores. However, for children who had participated in the Summer Transitional Program, participation in the *Raising A Reader* program was associated with higher readiness scores. (Note – the difference between the Summer Transitional Program non-participants who had or had not participated in *Raising A Reader* (3.06 compared to 3.03) is not a significant difference.) This inconsistent relationship across Summer Transitional Program participation and *Raising A Reader* participation violates a statistical assumption of ANCOVA, and therefore this factor could not be controlled for within the ANCOVA analysis.

Two other aspects of the ANCOVA need to be mentioned. First, neither participation in Head Start nor having special needs were included as factors in the ANCOVA because only a small percentage of the observed children fell into either of these categories. Secondly, excluded from analysis were children for whom we did not have data on one or more of any of the variables included in this analysis. The overall ANCOVA, containing the five characteristics included as covariates, included data from 301 children.

Finally, this analysis examined children's composite readiness scores across all 20 indicators measured by the Child Observation Form. It may be the case that *Raising A Reader* participation may impact certain indicator (skill) areas to a greater extent than others, and this may also be true for the other child characteristics that were included in the analysis. Using a measure of average readiness across all 20 indicators, as was done here, provides a good assessment of a child's overall condition of school readiness. Future, more specific analysis, however, would be valuable, especially given the ongoing nature of this project.

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