



PROJECT IF “INVENTING THE FUTURE”

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[FROM THE METHODS SECTION]

The impact of mentoring on children’s grade point average across years in school was investigated using individual growth modeling. The SAS PROC MIXED procedure was used to fit all models in this analysis. Changes in children's grades were followed between the beginning of second grade through the end of sixth grade. The effects of modified curriculum at each grade and over time were controlled in every model. In order to estimate the effect of mentoring on children's grades at each of second, third, fourth, and fifth grades, while still accounting for previous performance, the intercept was set at corresponding time points in each model.

Final models were generated for each class (GPA’s for reading, spelling, writing/language arts, math, social studies, and science) and for overall GPA. Each model included: time; child's gender, and race; mentoring by model (SB, CB, or Mixed) within each grade (e.g., the effect of mentoring as it varies in each grade); mentoring by model interacting with time (e.g., the effect of mentoring as it varies by the age of the child); modified curriculum at each age; and modified curriculum interacting with time (e.g., the effect of modified curriculum as it varies by child age). Significant and non-significant effects are reported in each model; however, the effect for race was not significant in any of the models and as such was not included in the final result tables. Estimates regarding slope demonstrate the relationship between the predictors and linear changes in children’s GPA over the period encompassed by the model. Estimates for the intercept provide information regarding the association of the predictors with differences in children’s GPA at each of six grades.

The overall sample of 255 included 210 students who had been matched for at least one quarter between 2nd and 5th grades. Because of the way growth modeling incorporates data, it was possible for any given student to contribute data from school-based (SB), community-based (CB), and/or Mixed (SB/CB combination) matches. For instance, a student might initially have had unmatched quarters followed by an SB match that ended and was replaced with a CB or Mixed match. Additionally, the overall sample included 45 students who had never been matched and were used to supplement the de facto comparison data comprised of served students' pre-match grades. These never-matched students had applied for Bigs but had not been matched. At any given point in time, (segmented by quarters of the academic year) all comparison data (never matched or not yet matched) for that period was compared to data for any student who was matched at that point in time¹.

[FROM THE FINDINGS SECTION]

Overview

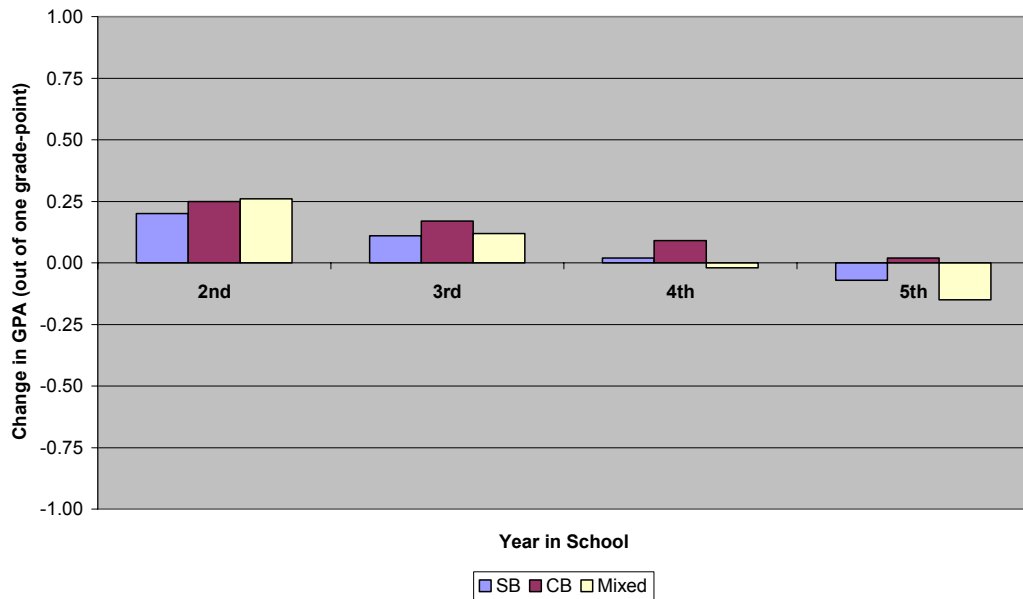
The findings derived from growth modeling are strong and directionally consistent across classes. These are reflected most generally in the modeling of Overall GPA Gains, which reflects the average performance across classes and will be used in this section as a benchmark against which performance in specific classes is compared. Broad summations of the most noteworthy findings are presented below, followed by detailed examinations of overall GPA change and patterns of change observed in relation to each class.

The overarching finding stemming from the growth modeling is that, after accounting for the effects on GPA gain exerted by the variables that were included in the model, GPA gains vary substantially as a function of students' ages. The data shows that, on average, young mentored students would be expected to realize extraordinary gains but older students typically would be expected to gain little or even experience decreases in their GPA's. The size of these gains often was not only statistically significant but also meaningful in practical terms. Served second graders would be expected to average

¹ Growth modeling analyses reflected difference between all students who were matched at a given point in time and all students who were not matched at that time. Thus, the comparison sample associated with any given point in an academic year consisted of the 45 comparison students (who were never matched) plus any student who would eventually be but had not yet been matched or had been matched and was no longer.

gains across all classes and mentoring models in excess of one-fifth of a grade point, a significantly better performance than non-matched students. Conversely, the modeling predicts that served fifth graders should be expected to average very slight decreases compared with non-served students across classes and mentoring models. These findings are summarized graphically for the average overall gains across classes in Figure 1 (next page).

**Figure 1: Change in Overall GPA by Year
(Relative to Non-Matched Students)**



Given the limited evidence available in existing research that demonstrates mentoring's influence on academic achievement, the findings obtained by the growth modeling analyses are noteworthy for their statistical strength. Taken at face value, they would appear to offer very encouraging news about benefits mentoring holds for younger children people, but also discouraging news about the benefits to be derived by older students. Ironically, however, it may be that the modeling done to obtain these findings holds a lesson that ultimately will outweigh the value of the findings themselves: even modeling as sophisticated and complete as that generated for this report seems to be substantially incomplete. Though it generated statistically significant findings, the current modeling explained a relatively small portion of the variance associated with those findings.

Consideration of factors that likely influenced the findings but could not be controlled in the current modeling suggests that both the positive and the negative findings will be shown to be mitigated as more complete models can be generated. Factors such as risk status, urgency of nonacademic needs, and relationship quality/mentoring approach likely will render the change in benefits as a function of age much less pronounced. In fact, as presented below, the regression analyses suggest that mentoring is associated with academic gains and that it may be possible to guide mentors' approach to promote enhanced academic performance. However, those findings must be considered preliminary due to the small sample from which they were derived. Ultimately, the current findings yield a statistically powerful indication of the relationship between mentoring and changes in students' academic performance but investigation is warranted to determine the effects of these additional factors on that relationship.