

**PA STATE GEAR UP-3
ISSUE BRIEF:**

A Longitudinal Look at Tutoring and Academic Progress

The following issue brief was designed to accompany the Pennsylvania (PA) State GEAR UP-3 Final Evaluation Report, providing a deeper look into a specific topic salient to the seven-year program evaluation. PA State GEAR UP-3 was a seven-year state grant (2014–2021) developed to enhance academic improvement and early college awareness among at-risk youth and their parents. The program was implemented with an entire cohort of students beginning in seventh grade and followed through high school and into their first year of post-secondary education. The combination of academic support through tutoring, exposure to campus life through college visits and summer bridge programs, and information sharing through counseling and other events produced a well-rounded support system for PA State GEAR UP-3 students, enabling them to make informed decisions for their future.



Tutoring was the most frequently
accessed PA State GEAR UP-3 service

31

Average tutoring sessions per student

A Longitudinal Look at Tutoring and Academic Progress

PA State GEAR UP-3 tutoring served students both in the classroom and after school and was one of the most frequently accessed services. Tutoring was designed to support students academically to help them improve their grades and stay on track for graduation. As PA State GEAR UP-3 prepared students for post-secondary education and students learned more about the requirements for admission to universities, students also began to see the relevance of their academic performance to their future. Tutoring was a relied-upon support to help students succeed in their classes as well as reach their post-graduation goals. For this analysis, we looked at data that includes PA State GEAR UP-3 students who participated in tutoring over the five project years (grades 8-12).



TUTORING PARTICIPANTS

Students with mid-level GPAs accessed tutoring the most.

59% of mid-level GPAs

57% of low-level GPAs

51% of high-level GPAs

TUTORING SERVICES

Students who participated in tutoring (61%) utilized the service frequently.

Average number of tutoring sessions per student =

31

The next most frequently accessed services were summer programs (18 sessions) and student workshops (14 sessions).

TUTORING PARTICIPANTS

Almost two-thirds of the PA State GEAR UP-3 students who received FSC services (total of 3,822 students) participated in tutoring (61%; 2,348). The following table outlines the percentage of students by the total number of times they received tutoring across grades 8 through 12, meaning, total sum of times over five years (See Table I-1).

Table I-1: Percent and number of PA State GEAR UP-3 students who received tutoring, by number of tutoring sessions

Number of tutoring sessions	Percentage of PA State GEAR UP-3 students	Number of PA State GEAR UP-3 students
10 or more times	33%	1,241
3–10 times	17%	639
1–2 times	12%	468
No tutoring	39%	1,474

Correlational analysis showed that female students were more likely to receive tutoring than males. Compared to Black, Asian or Pacific Islander, or Hispanic/Latino students, white students were less likely to receive tutoring (see Table I-2).

Table I-2: Correlation analysis of students who received tutoring, by demographics

Demographics of PA State GEAR UP-3 students	Correlation Coefficient	Standard error
Female	0.160***	(0.040)
Asian or Pacific Islander	-0.660***	(0.243)
Hispanic or Latino	-0.426**	(0.203)
Multi-racial or Other	0.286	(0.246)
White	-0.545***	(0.162)

Observations=6240, R^2 , * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

TUTORING AND ACADEMIC PROGRESS

To analyze the relationship between tutoring and academic outcomes, we ran regression models, regressing “endline” grade (MP final grade) on different dosages of tutoring, taking into consideration the student’s baseline grade (MP1 grade) and its interaction with tutoring, controlling for student background characteristics such as gender, ethnicity, English Learner status, absenteeism, and grade-level.

When we examined PA State GEAR UP-3 student level of participation in tutoring together with GPA, we found that there is no statistically significant relationship between amount of tutoring and final GPA, except when a student has participated in tutoring 10 times or more. High-dosage tutoring has been shown to produce large positive effects on math and reading grades (Robinson, et al., 2021). We found this to be true only for students who had a higher baseline GPA (MP1 grade). For students who received 10 or more times of tutoring and had a high baseline GPA, their final GPAs tend to be higher on average than those who did not have tutoring and had high baseline GPAs. Unexpectedly, we found that for students whose baseline GPA (MP1 grade) was low, receiving tutoring 10 times or more was associated with a lower final GPA (MP final grade) compared to those who did not receive tutoring. Therefore, it seems **high doses of tutoring helped students who had better grades entering high school**, whereas it did not help those with low grades entering high school.

This trend applies to mathematics and science grades as well, however in English, students with low baseline English GPAs who received tutoring one or two times had higher final GPAs on average than those students who did not receive tutoring. The effect of three or more tutoring sessions was not statistically significantly different compared to those who had no tutoring. Interestingly, the effect of one or two tutoring sessions on students with high baseline English GPAs was slightly negative. The Robinson, et al. (2021) meta-analyses study shows that tutoring is most likely to be effective when provided three times per week or more—an intensity PA State GEAR UP-3 may not have been designed to provide. While we can’t speculate if tutoring frequency or other reasons are behind these results, we can look to the qualitative data we collected to better understand how tutoring was utilized.

METHODS

This longitudinal look at tutoring and academic performance applied a quantitative-forward integrated analysis to explore participation trends, perceptions from students and teachers, and the effect of tutoring on academic performance. Analysts combined and re-analyzed quantitative participation and academic performance data with qualitative interview and focus group data from Years 2 through 7 of PA State GEAR UP-3.



QUALITATIVE
ANALYSES



QUANTITATIVE
ANALYSES



INTEGRATION
ANALYSES

Through focus groups and interviews, we heard from students, teachers, and tutors that tutoring benefited students academically. Students who were struggling with grades received the **additional support** necessary for them to stay on track or improve. Sometimes having someone other than the teacher explain a concept helped students to **better understand it**. One teacher commented:



"I had a somewhat long list of kids that were in danger of failing..but I got it down to a much smaller number, and a lot of those kids went to GEAR UP:"

In addition, tutoring was also used as a support to students who simply needed **assistance with specific assignments**. A PA State GEAR UP-3 counselor described how students would text her to see if a tutor was available. A teacher also explained:



"This is the first year I've ever had students say, "Well, can I finish this after school on Wednesday?" because that's when GEAR UP is doing after-school tutoring... My students normally would just turn it in half-complete. So, they ask to stay after, they advocate for themselves, and that's really big, for my students in particular."

PA State GEAR UP-3 tutoring was seen by respondents as a benefit to students as well as teachers, as discussed below.

BENEFITS FOR STUDENTS

One practical benefit of tutoring was that it offered students **additional time to work on assignments**. PA State GEAR UP-3 tutoring sessions provided students "practice time" that may not be available in the classroom where teachers are pressed to cover required material. After school, PA State GEAR UP-3 tutors offered **homework help** which students wouldn't otherwise have.

Over time, as a number of tutors worked with PA State GEAR UP-3 students throughout high school, **relationships** developed between students and tutors. PA State GEAR UP-3 students felt supported and comfortable asking questions. One student said, "They bring the same tutors around so you kind of get comfortable like if you have an issue with math, it's not going to be a different person every time." A teacher commented that the **"one-on-one attention"** through tutoring was one of the most beneficial services of PA State GEAR UP-3.



"When they [regularly] see you and they know you and they develop a relationship to you. I think that's one of the best things about GEAR UP and in terms of value; I think that's where we get the best value is these tutors who know the kids."

In one district, a respondent explained that the tutors had been working with the students since approximately 2015, and strong relationships created a "tutoring/mentoring" role where tutors could also help support the students on a personal level.