Supporting Urban School Students' Preparedness for Post-Secondary Study Through Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP)

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Despite efforts to increase the number of urban school students from low-income backgrounds who graduate from high school and attend college, success in postsecondary continues to be a pervasive challenge. This study examined a Gaining Early Awareness and Readiness Programs (GEAR UP) high school who had received the intervention program beginning in seventh grade. Findings in the study revealed that there was a significant difference in Preliminary Scholastic Aptitude Test (PSAT) scores between the intervention and comparison group. GEAR UP students significantly outperformed the comparison group on their composite PSAT score, as well as on mathematics and reading subtests.

Keywords: college readiness, achievement, underserved, mathematics, reading, PSAT, GEAR UP

INTRODUCTION

Despite efforts to increase the number of students from low-income backgrounds who graduate from high school and attend college, success in postsecondary study for low-income students continues to be a pervasive challenge (Renbarger & Long, 2019; Ward, 2006). Low-income urban students tend to graduate at lower rates than the overall population (McFarland et al., 2020) and at lower rates than their suburban peers (Butrymowicz, 2015), and have demonstrated lower standardized test scores in English and mathematics (Irwin et al., 2021), and are less likely to matriculate to post-secondary institutions than higher income students (National Academies of Sciences, Engineering, and Mathematics, 2016).

Students attending urban high schools are more likely than their suburban peers to be from low-income families, represent underserved racial and ethnic groups, and have parents who did not attend college (IES, 2020). Evidence suggests that students from underrepresented groups, including those from low-income

communities in urban schools, may lack preparation for or access to advanced coursework such as Advanced Placement (AP) courses (Kolluri, 2018). As Butrymowicz (2015) noted "housing patterns and economics determine the educational destinies of their residents" (paragraph 15). Although low-income students comprise about 40% of college students, these students are able to afford the tuition at less than 5% of postsecondary institutions (Postsecondary Value Commission [PVC], 2021). Of US students matriculating to public four-year institutions, about 35% are low income, however less than half of those enrolled students (47%) complete degrees (PVC, 2021) a phenomenon that effectively translates educational barriers for low-income students into their workforce experiences.

Evidence suggests that low-income students may lack social and cultural preparation for college (Maynard et al., 2017) and that life experiences and family background can have profound effects on students' educational attainment. In their study of Chicago students' matriculation into post-secondary institutions, for example, Milesi et al. (2012) found that students who had witnessed violence were 52% less likely to enroll in a four-year college, and that low levels of maternal educational attainment were correlated with lower likelihood of college enrollment. First-generation college students often lack the family-level support to make these plans (Brookover, 2022; Hooker & Brand, 2010) and may therefore often possess low educational aspirations (Wolf, 2007). Likewise, students from low-income families, and in particular first-generation college students, may lack access to robust and detailed information about the benefits of higher education and how to navigate admissions and financial aid processes (Ehlert et al., 2017; Perna, 2015).

Gaining a post-secondary credential has a positive impact on future employment opportunities and earning potential. In 2020, the employment rate for individuals aged 25-34 with a bachelor's degree or higher was 86% compared to 69% for those with only a high school diploma and 57% for those who had not completed high school (Irwin et al., 2021). Trends in average income mirror the trends in employment rates, with sharp differences for those with bachelor's degrees (average income of $55,700) versus those with a high school diploma or less (average incomes of $35,000 and $29,300 respectively) (Irwin et al., 2021). In light of these data, the importance of preparing low-income urban students for success in post-secondary studies and careers is clear.

Building the Foundation in Middle and High School

Research has revealed that effective academic preparation in K-12 is key to supporting student success in post-secondary study (Perna, 2005). Social and emotional competencies such as communication and problem-solving skills can positively impact students' academic achievement and college readiness (Brookover et al., 2022; Lerner & Deeds, 2018). Further, access to advanced classes (Xing et al., 2019) and access to tutoring and other academic supports (Kim et al., 2021; Nickow et al., 2020) also show promise in preparing students for college. Programs that supporting students' development of social and emotional competencies (Brookover et al, 2022; Burrus et al., 2022) and relationships with adults and mentors (e.g., Gibbs Grey, 2018) while also developing educational self-efficacy (Xing & Rojewski, 2022) can be instrumental in preparing students for post-secondary experiences.

Financial aid instruments such as Pell grants are necessary in order to address monetary barriers for low-income students (PVC, 2021), but in light of the multi-faceted challenges these students face, it is clear that financial aid alone is not sufficient to support low-income students as they navigate the unique challenges they face in transitioning to and persisting in post-secondary education (Holcombe & Kezar, 2020; Lumina Foundation, 2018). Students who make long-term plans regarding college and careers with the support of families or other personal networks are more likely to enroll in college (Xing & Rojewski, 2022).

College and Career Readiness Programs

College preparation initiatives have proliferated as a result of federal (e.g., Perna, 2015) and state (e.g., Gallegos, 2022) investments in college and career readiness and have resulted in programs with a range of formats and content. Curricula delivered during school hours (Fletcher et al., 2018; Horillo et al., 2021; Perry et al., 2018) and programming delivered during out of school time (OST) hours such as after school

and summer programs (Dabney et al., 2012; Lerner & Deeds; Nuñez, 2019) can support student academic achievement and knowledge about and interest in college and careers. Research has indicated that the context of OST programs permits unique flexibility and opportunities to provide a range of experiences can impact student college and career knowledge and readiness (Cohen et al., 2019; Lerner & Deeds, 2018; NRC, 2015; Sahin, 2013).

College and career readiness programs often focus on some combination of elements such as academic support, test preparation, behavioral or social and emotional learning strategies, and activities designed to increase students' knowledge of college admission processes and familiarity with college culture (Perna, 2015; Maynard et al., 2017; Nuñez, 2019). College readiness programs for urban and low-income students are most effective when they combine features such as academic preparation, support in goal setting, family engagement, career information, college financial aid and admissions support, and social and cultural preparation for college (Maynard et al., 2017; Perna, 2015; Perry et al., 2018; Radcliffe & Bos, 2015).

Because of the multi-faceted nature of college and career readiness, determining students' level of readiness is a complex task, and there is therefore no single widely-accepted measure for college readiness (Green et al., 2021). As Richardson et al. (2016) pointed out, college readiness is "very subtle, very mutable, and difficult to determine, because college readiness has numerous indicators and characteristics" (p. 386). Researchers recognize that indicators are needed that provide information about college readiness before students' reach their senior year of high school in order to provide students with appropriate supports (Clough & Montgomery, 2015; Proctor et al., 2010).

GEAR UP Programs

The Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) program is a federal initiative that takes a comprehensive approach to college and career readiness by engaging cohorts of low-income students in various activities beginning in middle school. GEAR UP sites have latitude to customize activities in ways that best meet the needs of participating students. There is therefore no single model for GEAR UP, and programs may include some combination of elements such as tutoring and other academic supports, mentoring, college admission and transition information, family engagement, and educator professional development (National Council for Community and Education Partnerships, n.d.). The localized nature of programming and the variety of services and supports offered at GEAR UP sites create a complex landscape for program evaluation and outcomes assessments with specific difficulties in relating student outcomes to individual interventions (Freeman & Simonsen, 2015; Maynard et al., 2017; Tillery & Ducker, 2017). There is, however, a growing base of evidence suggesting that participation in GEAR UP programs supports students' middle and high school academic achievement (e.g., Bausmith et al., 2012; Cabrera et al., 2006; Kennedy, 2016; Schaefle, 2018), students' knowledge about and positive dispositions toward college and careers (e.g., Gibson & Jefferson, 2006; Morgan et al., 2015; Ward et al., 2013), postsecondary matriculation (e.g., Fogg & Harrington, 2015; Kim et al., 2021; Weiher et al., 2006), and postsecondary persistence (Knaggs et al., 2015; Sanchez et al., 2018).

Of the 17 studies identified that examined GEAR UP programs and outcomes for high school students, all provided evidence of GEAR UP's positive impact on students. GEAR UP studies used quantitative methods such as analysis of test scores, analysis of post-secondary enrollment data, and student and parent surveys (e.g., Bausmith et al., 2012; Cabrera et al., 2006; Gibson & Jefferson, 2006; Kim et al., 2021; Schaefle, 2018), qualitative methods such as interviews and open-ended survey questions (e.g., Capizzi et al., 2017) and mixed methods that combined quantitative and qualitative approaches (e.g., Knaggs et al., 2015; Morgan et al., 2015).

Four studies identified positive outcomes from GEAR UP participation in terms of student academic achievement using standardized test scores such as the Preliminary Scholastic Aptitude Test (PSAT) and American College Test (ACT) (Bausmith et al., 2012; Cabrera et al., 2006; Kennedy, 2016; Schaefle, 2018). There were also correlations between GEAR UP participation and students' enrollment in college (Fogg & Harrington, 2015; Kim et al., 2021; Knaggs et al., 2015; Morgan et al., 2015; Weiher et al., 2006) and student persistence in college (Kim et al., 2021; Knaggs et al., 2015; Sanchez et al., 2018). In other studies, Morgan et al. (2015) found that students believed that GEAR UP helped prepare them for college, Samel

et al. (2011a) identified positive effects on student resilience from GEAR UP participation, and Gibson and Jefferson (2006) found that GEAR UP positively impacted students self-concept.

In regard to specific programming aspects of GEAR UP, Kim et al. (2021) found that college visits, tutoring, financial aid assistance, and test preparation were positively correlated with students' enrollment in college. Knaggs et al. (2015) in their mixed methods study found evidence that college and career information, community service, and celebrating students' accomplishments helped urban students to overcome college access barriers. Yompolskaya et al. (2006) examined the intensity of students' involvement with GEAR UP academic activities and found that high participation correlated with improved high school GPAs and that students with high participation in non-cognitive activities had fewer disciplinary referrals. Further, the establishment of relationships with program staff and mentors also enables students from underrepresented backgrounds to grow self-confidence and see themselves in college (e.g., Gibbs Grey, 2018).

CONCEPTUAL FRAMEWORK

Evidence suggests that college and career readiness require a nuanced mixture of support academic skills and knowledge (Mishkind, 2014), dispositions about the future including setting short and long-term goals (Falco & Steen, 2018), knowledge about college admissions (Xing & Rojewski, 2022), and knowledge about the social and academic culture of college (Cappizzi et al., 2017).

Conley's (2012) Four Keys to College and Career Readiness encompasses mastery in cognitive strategies, content knowledge, learning skills, and post-secondary transition knowledge and skills. Key cognitive strategies and key learning skills include student ways of thinking and use of 21st century skills such as problem-solving, persistence, time management, collaboration, and technology utilization. Students should also understand the big ideas from core subjects, including technical knowledge and skills according to Conley (2012). Transition knowledge and skills refers to an understanding of what is required to navigate a successful transition from high school to post-secondary study and life. This includes an awareness of coursework, financial aid, and career options.

Social cognitive theory (SCT) distinguishes between three modes of agency; direct personal agency to intentionally influence one's own functioning and life circumstances; proxy agency that relies on others to act on one's command to secure desired outcomes; and collective agency that operates through group action (Bandura, 2002). Students do not live their lives independently, and to achieve desired outcomes (e.g., knowledge, skills, access to resources, etc.) a blend of these different modes of agency is required. Self-efficacy beliefs are at the very core of SCT (Bandura, 1977). Postsecondary education self-efficacy (i.e., a belief in future educational success) has a significant positive influence on establishing higher postsecondary educational goals for adolescents (Xing and Rojewski, 2022). Self-efficacy and goals affect students' immediate postsecondary enrollment. Therefore, opportunities for students to learn about connections between schoolwork, postsecondary education, and work/career options can serve to motivate and achieve postsecondary educational goals.

PURPOSE AND RESEARCH QUESTIONS

This study examined the implementation of a state-level GEAR UP program (SGUP) in an urban school district and the associated college and career readiness outcomes based on program participation from seventh grade to tenth grade. Specifically, this study examined the impact of SGUP on PSAT scores for the 10th grade cohort and a comparison group of prior 10th grade students from the same large, urban high school. Standardized test scores are often used to provide information about students' college readiness beginning as early as the middle school years (Allen et al., 2019). Evidence suggests that student scores on PSAT tests are accurate indicators of whether students in 10th and 11th grades are on track to be ready for college-level coursework (Proctor et al., 2010; Richardson et al., 2016; Vaughan, 2010). Research for this study was guided by the following questions:

Research Question 1 (RQ1): *Is there a significant difference in PSAT composite, reading, and mathematics scores between the GEAR UP cohort and the comparison cohort?*

Research Question 2 (RQ2): *Is there a significant difference in meeting college-readiness benchmarks in reading and mathematics between the GEAR UP cohort and the comparison cohort?*

Study Context

Participants in this study were from an urban school district in a midwestern state which has a U.S. Department of Education Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) funded state-level program. In 1990, this state created a special program to provide college access to economically disadvantaged students who received some guidance in high school and a four-year scholarship to attend a college or university of their choice in the state. Unfortunately, only about four percent of program participants graduate from college on time from their selected institution, and only 26 percent earn a degree within six years (Indiana Commission on Higher Education, 2014). This is compared to 29 percent four-year completion and 52 percent six-year completion rate for all students in postsecondary study. One of the contributing factors to the college completion rate for this state is insufficient preparation in key areas during K-12 education and subsequent burden of required remedial coursework in postsecondary study.

At the beginning of this program, low-income students in this state were losing ground in middle school and this continued across their transition to high school. As is represented in Table 1, 80 percent of free/reduced lunch (FRL) students passed the 5th grade mathematics assessment, 69 percent passed the language arts, and 50 percent passed science. These numbers dropped to 49 percent (math) and 53 percent (ELA) passing by grade 10, and only 39 percent science in 7th grade.

TABLE 1
STUDENT ACHIEVEMENT DATA – % PROFICIENT IN CONTENT AREA BY FREE/REDUCED LUNCH (FRL) STATUS

Grade Level	Math FRL	Math Paid	ELA FRL	ELA Paid	Science FRL	Science Paid
5th grade	80	93	69	88	50	76
6th grade	76	91	67	86	54	81
7th grade	70	90	61	84	39	70
8th grade	71	89	63	85	N/A	N/A
9th grade	54	80	50	77	N/A	N/A
10th grade	49	77	53	79	N/A	N/A

SGUP was designed to begin with two cohorts of 7th grade students in the participating district (two consecutive years) that were provided with additional in-school, in-classroom, school-day instructional support in mathematics, science, and English/language arts, as well as weekly after-school programming sessions focused on college and career readiness and tutoring. The in-school, in-classroom, school-day instructional support included having additional instructors during the regular class period, as well as small group pull-out tutoring for students who needed additional support. Students in SGUP were provided this support from grade seven through twelfth grade.

METHODOLOGY

A quasi-experimental cohort study comparing two 10th grade cohorts of students from who attended Easton High School (EHS – pseudonym) at different times (Cohort 1 = Pre-SGUP; Cohort 2 = During SGUP) on college and career readiness academic outcomes. Quasi-experimental cohort designs have

demonstrated usefulness in educational research as quasi-compatibility can often be assumed between groups because students come from the same community and are usually considered demographically similar (Cook & Campbell, 1979). Further, quasi-experimental cohort designs have demonstrated their usefulness in evaluating the effectiveness of GEAR UP programs (e.g., Lunceford et al., 2017; Sondergeld et al., 2013; Sondergeld & Koskey, 2011). College and career readiness academic outcomes under comparison were from 10th grade PSAT testing.

Instrumentation and Data Collection

PSAT scores were used in this study because they have been validated as a measure of the skills and knowledge research indicates is associated with success in college readiness and retention through an evidence-based reading and writing test as well as a math test (Westrick et al., 2019). Two types of 10th grade PSAT data for EHS students were provided to the research team by the school district's central data administration team: scaled scores and readiness benchmarks. PSAT scaled scores are three-digit scores calculated for each subtest (reading and math). These scores are vertically equated across the SAT suite of assessments so that a student's PSAT and SAT score taken on the same day would be equivalent (Westrick et al., 2019). Further, vertical equating of scores across tests allows for student growth to be evaluated over time. Reading and math subtest scores range from 160-760 and a composite scaled score is the sum of these two subtest scores equaling a range of 320-1520. Scaled scores are contextualized by a dichotomous benchmark rating to indicate whether a student's score either meets the pre-established college readiness benchmark or falls below the benchmark for reading and math sections of the PSAT. Benchmarks were established and tested to show that students meeting or exceeding benchmark would have a 75% chance of achieving a "C" or higher in their first-semester college courses (College Board, 2020). For 10th grade PSAT mathematics the college readiness benchmark level is 480, and for 10th grade reading the college readiness benchmark level is 430. There is no college readiness benchmark level for the PSAT composite score.

Sample

During the year the Pre-SGUP Cohort was at EHS, there were approximately 496 students per grade level (9-12) and about 516 students per grade level for the During SGUP Cohort. Aggregate demographics from Pre-SGUP Cohort (n=220, 44.44% of grade level) and During SGUP Cohort (n=453, 87.79% of grade level) students who completed the PSAT in 10th grade are presented in Table 2. Chi-square tests of proportions were conducted on all demographic values between cohorts to look for differences in samples. No significant differences were found (p>.05). There was a nearly even split between females and males in each cohort, and almost two-thirds of students were free and reduced lunch eligible. While there were slight variations in students' race/ethnicity between cohorts with slightly more Hispanic (2.41% points) and Black or African American (3.22% points) students in the During SGUP Cohort and marginally more White (6.41% points) students in the Pre-SGUP Cohort, these differences were not statistically significant.

TABLE 2
AGGREGATE DEMOGRAPHICS FOR EHS 10TH GRADERS COMPLETING THE PSAT BY COHORT

Student Demographic ***Values***	**% Pre-SGUP Cohort**	**% During SGUP Cohort**
Gender		
Female	49.37%	50.00%
Male	50.63%	50.00%
Race/Ethnicity		
American Indian/Alaska Native	<1.00%	<1.00%
Asian or Asian/Pacific Islander	<1.00%	<1.00%
Hispanic	28.95%	31.36%
Black or African American	13.77%	16.99%

Student Demographic *Values*	**% Pre-SGUP Cohort**	**% During SGUP Cohort**
Race/Ethnicity		
White	51.03%	44.62%
National Hawaiian/Other Pacific Islander	<1.00%	<1.00%
Two or More Races	4.79%	5.86%
Free and Reduced Lunch Eligible		
Eligible	62.99%	61.71%
Not Eligible	37.01%	38.29%

EHS cohorts of students completed the ACT Aspire test in 8th grade as a part of the SGUP grant. Average scores on the four ACT Aspire sections are provided in Table 3. Independent samples *t*-tests showed no statistically significant differences in these scores between the Pre-SGUP Cohort (comparison group) and the During SGUP Cohort which was only in their second year of GEAR UP programming ($p>.05$). Statistically similar cohorts based on student demographics and early-programming academic measures allows for "quasi-comparability" to be assumed in order to draw causal inferences (Cook & Campbell, 1979).

TABLE 3
AVERAGE 8TH GRADE ACT ASPIRE SCALED SCORES FOR EHS STUDENTS BY COHORT

ACT Aspire Section	**Pre-SGUP Cohort**	**During SGUP Cohort**
English	424	424
Mathematics	419	420
Reading	419	418
Science	419	418

Analysis

To investigate for statistically significant differences in PSAT average composite, reading subtest, and mathematics subtest scores by cohort (Pre-SGUP vs. During SGUP) in research question 1, descriptive statistics along with multiple independent samples *t*-tests were implemented. Student scaled scores were then transformed into one of two categories based on reading and mathematics subtest benchmarks to be classified as below college readiness benchmark (reading score < 430; mathematics score < 480) or meeting and above college readiness benchmark (reading score ≥ 430; mathematics score ≥ 480). Chi-square tests were then computed because both variables in research question 2 were categorical: EHS Cohort (Pre-SGUP vs. During SGUP) and college readiness benchmark classification (below vs. at or above).

RESULTS

PSAT Scaled Scores by Cohort

Independent samples *t*-test findings showed that the During SGUP Cohort significantly outperformed the Pre-SGUP Cohort in terms of 10th grade PSAT scaled score composite ($p<.001$), mathematics ($p<.001$), and reading ($p<.01$). While the differences were statistically significant, the effect sizes were small with Cohen's *d* ranging from 0.166 to 0.421. Further, neither cohort's average 10th grade PSAT scaled mathematics score reached the benchmark level of 480. Yet the During SGUP cohort averaged above the 10th grade PSAT scaled score benchmark level of 430 in reading, while the Pre-SGUP Cohort did not. See Table 4 for complete descriptive and inferential results.

TABLE 4
EHS 10TH GRADE COHORT PSAT AVERAGE SCORES AND INDEPENDENT SAMPLES T-TEST RESULTS (N=673)

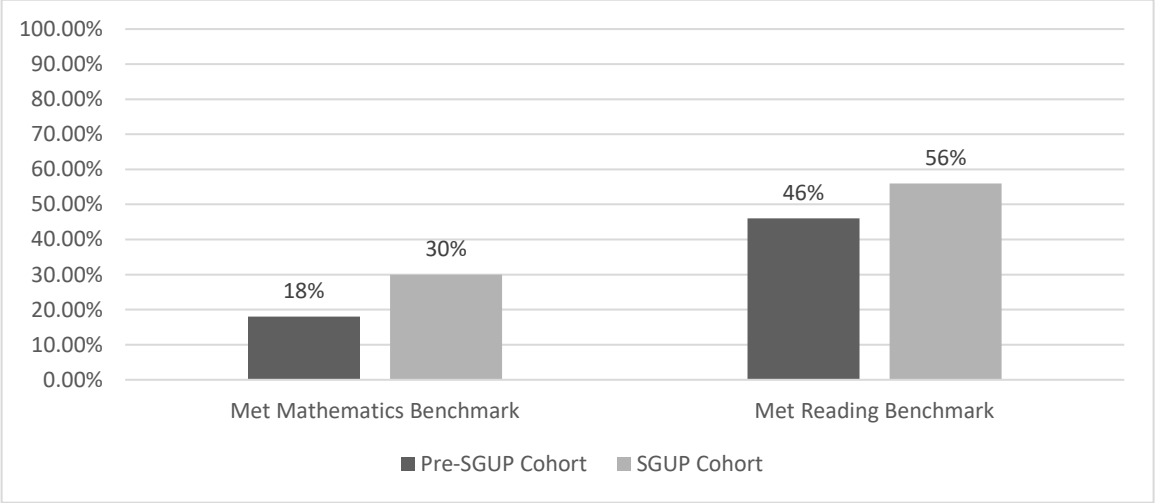
	EHS 10th Grade Cohort Average Scaled Score			
PSAT Scale	**Pre-SGUP *M* (*SD*)**	**During SGUP *M* (*SD*)**	***t*-statistic**	**Cohen's *d***
Composite	837.95 (157.98)	886.65 (160.12)	3.81***	0.305
Mathematics	409.09 (84.85)	442.89 (78.48)	5.25***	0.421
Reading	428.86 (82.82)	443.76 (92.71)	2.07**	0.166

NOTE: *=p<.05, **=p<.01, ***=p<.001

College Readiness Benchmark Classification by Cohort

Chi-square findings showed statistically significant differences in the proportion of students who met the college readiness benchmark by cohort for both mathematics (χ^2= 14.81, p<.001) and reading (χ^2= 42.46, p<.001). The During SGUP Cohort had a significantly greater percentage of students who met the benchmark for mathematics (30%) and reading (56%) compared to the Pre-SGUP Cohort (18% mathematics, 46% reading). Figure 1 graphically represents these results.

FIGURE 1
EHS 10TH GRADE COHORT PSAT % MET BENCHMARK RESULTS (N=673)



DISCUSSION

College Readiness Differences

Findings from this study show that the During SGUP Cohort of students significantly outperformed the Pre-SGUP Cohort in terms of college readiness among 10th grade EHS students taking the PSAT on multiple metrics. These results align with Bausmith et al.'s (2012) and Cabrera et al.'s (2006) findings that also found evidence of improved college readiness among students participating in GEAR UP as evidenced by standardized test scores. The impact of the SGUP program's targeted academic support on students' achievement is supported by findings that such supports can be crucial in preparing low income students for college (Kim et al., 2021; Nickow et al., 2020). Furthermore, the use of both in-school (Fletcher et al., 2018; Horillo et al., 2021; Perry et al., 2018) and OST (Cohen et al., 2019; Lerner & Deeds, 2018; NRC, 2015; Sahin, 2013) hours for college readiness allowed the SGUP program to leverage the unique

advantages of both these settings in supporting student college readiness. The structure of SGUP's activities in focusing on rich academic support also aligns with Yompolskaya et al.'s (2006) and Kennedy's (2016) findings indicating that higher intensity of participation in academic support activities in GEAR UP resulted in improved college readiness as measured by student achievement.

While there were significantly greater proportions of During SGUP Cohort students meeting PSAT mathematics and reading benchmarks for college readiness, in both cohorts more students were meeting college readiness benchmarks in reading compared to mathematics. This finding echoes Kennedy's (2016) study, which found that students participating in GEAR UP tutoring showed significant increases in English but not mathematics standardized test scores. Kennedy (2016) found, in fact, that there was no correlation between mathematics performance and academic mentoring, tutoring in mathematics, or participation in a study skills workshop in high school, suggesting that improvement in mathematics performance may be a particularly intransigent phenomenon. Likewise, Schaefle (2018) found that GEAR UP students' mathematics scores improved less than reading and writing scores for the Latino/a students in the GEAR UP program. Interestingly, however, Schaefle (2018) also found that high participation in mentoring by ethnically diverse low-income college students was correlated with increased student mathematics scores while high participation in mathematics tutoring showed no such correlation. This finding suggests that the use of relatable role models may support students' belief in their capability and have positive impacts on achievement.

Participation in College Readiness Testing

Although it would not be expected for all 10th graders in a school to take the PSAT, the proportional difference between those who completed the PSAT in the Pre-SGUP Cohort (44.44%) compared to the During SGUP Cohort (87.79%) was markedly different. The SGUP program did not pay for either cohort of students to sit for the PSAT, nor had state or district requirements changed related to taking the PSAT in 10th grade.

EHS received extensive support to grow instructional capacity school and corporation wide. Dedicated SGU staff embedded in the school community worked with the intervention cohort beginning in seventh grade to provide academic opportunities and interventions that frequently employed experiential methods. All cohort students enroll in the 21st Century Scholar Support Program by end of eighth grade. The SGU staff served as formal mentors to the cohort, providing support, delivering other college and career ready experiences to students, and assessing each individual students' progress on college/career readiness through the use of the ACT Aspire assessment beginning in seventh grade.

SGU staff worked with students throughout the school day, through co-teaching with regular teachers, doing individualized and group pullouts into the college success room, and delivery of after-school supports for students. Afterschool and out-of-school time enrichment provided a space for students to pursue special interests with the support of adult mentors to build student motivation and academic self-efficacy. Additionally, academic support efforts were bolstered with a fleet of SGU trained tutors to provided individualized attention to cohort students. Many of the tutors were undergraduate students attending a local university; having locally-based near-peer academic modeling and postsecondary mentoring provided both mastery and vicarious experiences for SGU cohort students.

Further, the SGU program partnered with the school corporation, county extension offices, local youth serving organizations, and other community stakeholders to implement college awareness activities for parents/students, work place experiences, college workshop sessions during and after school as well as summer to support struggling students. Twice per month, SGU cohort parents and students are invited to the school after hours for Homework Diner twice a month to receive academic tutoring support, engage in dynamic college and career focused activities, and share a meal to establish more community engagement in the school. Building community and local network of resources around student and family postsecondary aspirations not only builds awareness and access to educational resources beyond high school, but builds college-going culture and capital that supports postsecondary attainment and sustainability.

The SGU program intentionally included college readiness partnership interventions with academically focused programs (early assessment/intervention program, college bridge programs). We conducted early

student cognitive assessments beginning with the 7th grade using the ACT Aspire. Data from the ACT Aspire was analyzed and used formatively to determine student needs and construct intervention curriculum to be used with each cohort. The curriculum was then piloted across the cohort. With annual ACT Aspire assessments staring in 7th through 9th grades, by the time SGU cohort students were in 10th grade they had familiarity with the college-bound assessment as well as individualized feedback and support provided from early interventions.

Finally, SGU cohort students benefitted from a suite of college and career readiness activities starting in middle school that pre-SGU cohort did not. By the end of 8th grade, most SGU cohort students had visited a college and/or university. During their freshmen year, SGU cohort students created a graduation plan, participated in an extracurricular activity, and participated in a financial aid seminar 'Paying for College 101.' Upon completion of 10th grade, the majority cohort students had taken a career interest assessment, gained workplace experience, and estimated the costs of college. More postsecondary awareness activities and experiences (including a bridge-to-college, SAT/ACT test prep, college applications, FAFSA completion, etc.) were built into the program for junior and senior years at no cost for the students and families. These support strategies scaffolded across years through high school graduation fostered a commitment and sustained focus on necessary steps required to successfully prepare for and enroll in college.

LIMITATIONS AND FUTURE STUDY

Generalizability of this study's findings are limited because we only investigated college readiness outcomes from one urban high school participating in a Midwestern state GEAR UP program. Further, even though GEAR UP programs all have a similar goal of increasing college readiness amongst participating students, there are no specified curricula or intervention services (National Council for Community and Education Partnerships, n.d.). As many other researchers have noted, the localized nature of GEAR UP services and programming even within states funded by the same grant can be so vastly different that evaluation or conclusions comparisons are challenging (Freeman & Simonsen, 2015; Maynard et al., 2017; Tillery & Ducker, 2017).

Another limitation of this study is that all EHS 10th graders from each cohort did not complete the PSAT. While this is a common occurrence, it limits the sample to only those students sitting for the PSAT. EHS students who did not take the PSAT in 10th grade may very well be different in some ways from those who did making samples not completely representative of the full student body at EHS in either year. Future studies might investigate why students do and do not take the PSAT in 10th grade to have a better understanding of the voluntary nature of this testing and how differences in groups may impact evaluations with the PSAT as an outcome of interest.

Although findings from this quasi-experimental research are suggestive of strong programmatic impact on EHS 10th grade student college readiness as measured through the PSAT, with only quantitative data we cannot be certain as to why the differences in this study were found. The importance of mixed-methods research in comprehensive school reform studies has been documented to help researchers better understand the complex nature of schools and potential confounding variables (Sondergeld & Koskey, 2011). Thus, further qualitative or mixed-methods study of why SGUP programming had such as positive impact on the During SGUP Cohort is warranted to develop a more holistic understanding.

CONCLUSION AND IMPLICATIONS

Access to post-secondary education continues to be a pervasive challenge for urban students from low socio-economic backgrounds in the US (e.g., Ward, 2006). In this study, we examined the implementation of a statewide college and career readiness program (GEAR UP) and the associated outcomes of a longitudinal support program on student outcomes in tenth grade. In this study, SGUP Cohort students were provided intensive support beginning at seventh grade level, including tutoring, instructional support, mentoring, after-school programming, and other activities that continued through their high school years.

This study produced findings that provide insight to the ability of programs such as federally-funded GEAR UP programs to support student knowledge and skills growth that may enable them to succeed in post-secondary study. Through this research we learned that participation in SGUP enabled students to outperform their peer comparison group on the PSAT composite score, as well as the mathematics and reading assessments. This suggests that participation in SGUP provided the students in this study the necessary resources, additional instruction, and support to engage in learning and growing important knowledge. Findings of this study further substantiate a growing evidence base linking participation in GEAR UP and other college and career readiness programs with readiness for success in college as measured by scores on standardized tests such as the PSAT (Bausmith et al., 2012; Cabrera et al., 2006). This study also aligned with previous research findings indicating that GEAR UP students showed more improvement in reading and writing than in mathematics after participating in program activities (Kennedy, 2016; Schaefle, 2018), suggesting that early and continuing focus on mathematics interventions and support in GEAR UP programs might be appropriate and beneficial to students.

More research is needed to examine the impact of various components of GEAR UP and/or college and career readiness programs in order to understand which combinations of activities, supports, and instruction are most impactful on college readiness. In addition, this study's findings suggest that investigations into types of and durations of mathematics supports in college readiness programs could be fruitful and provide important insight for programs such as GEAR UP. Furthermore, there is an ongoing need for longitudinal studies that follow GEAR UP and other college readiness program participants through their post-secondary experiences. Such studies could provide important information about gaps in students' academic, cultural, and affective preparation that could inform college readiness program structure lend further insight into features of programs that make a difference for students.

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