

Evaluation of the Gem-Set Project

Data Brief November 19, 2007

I. Introduction

The PRAIRIE Group of the UIC College of Education serves as an external evaluator for the Gem-Set Project. This is a data brief reflecting findings to date.

GEM-SET's goal as stated in the Year 2 Evaluation Scope of Work is:

“to increase the number of low-income, female students in Chicago Public Schools who pursue and excel in Advanced Placement or college level courses in mathematics, science, and computer science. This goal will be achieved through two main objectives including:

- 1) connecting high school students to positive role models at UIC with a special emphasis on undergraduate women students with similar ethnic/racial backgrounds.
- 2) increasing the access to college level (AP) courses within the high school and as part of the City Colleges of Chicago “College Excel Program for High School Students.”

The evaluation questions for Year 2 were:

1. What challenges/barriers exist at each school relative to AP courses and College Bridge Programs?
2. How do school staff (heads of departments/administrators) view the work of the GEM-SET Program relative to the challenges/barriers they face?
3. How do school staff measure the impact of the GEM-SET Program in their school?

II. Methods

Qualitative data was collected at GEM-SET's target schools, Lake View High School (Lake View) and Young Women's Leadership Charter School (YWLCS) in Fall 2007.

Lake View opened over a century ago and has had a summer program in place to advance students to college-level math courses for more than 15 years. It offers AP math and science courses, including statistics and calculus. YWLCS is an all-girls school less than ten years old, serving grades 7-12. It does not offer AP math or science courses. Both Lake View and YWLS offer College Bridge.

The data points were:

1. A focus group at Lake View with the counselor and math department chair.
2. An interview at YWLCS with the 12th grade physics teacher and GEM-SET liaison.
3. An interview at YWLCS with the college counselor.

Data available from Lake View was limited to the math program. None was specific to girls.

Data from YWLCS reflects the fact that as a charter, this school’s math and science sequences, schedules, and assessments differ from conventional high schools.

III. Challenges and Barriers re Advance Placement and College Bridge

Lack of Data: Neither school has adequate resources for collecting, tracking, or analyzing data on the number of students in college-level courses, their completion rates, or their rates of entering and remaining in college. Any breakdown by subject area, i.e. math and science; or by gender, would be difficult to obtain. The schools were unable to provide quantitative data requested for this evaluation. When asked about percentages of students in AP, for example, one of the Lake View interviewees said, “I’m not sure,” and the other said “quite a few.”

The focus group revealed differing opinions among staff of how many AP courses were offered, when students could take them, etc. A counselor did not have College Bridge data available due to staff changes at the school.

This makes it difficult to pinpoint obstacles to girls’ access to advanced math and science courses, and to plan – on the part of both the schools and GEM-SET – strategies for raising the numbers of girls in the courses in question.

As there is no evidence that the schools can expect additional resources of their own, GEM-SET might consider playing a role in assisting school staff to collect data relevant to GEM-SET goals, i.e. availability of courses; and rates, by gender, of: enrollment in college-level math and science courses, completion of college-level courses, and admission to college.

A. College Bridge

1. Time pressure on students

Bridge requires students to attend classes on campuses sometimes at considerable distances from their home. The classes are after their regular school hours or on Saturdays. This is considered a deterrent by both schools. At Lake View, the option has been pursued by only a handful of students – none last year, two the year before – who arrived from other countries having already completed all the advanced math courses the school has to offer. It was reported that “Bridge is just not emphasized here because there are many other programs.” YWLCS is on a trimester schedule that does not mesh with the Bridge admissions process. Currently only five seniors participate, down from the 10-12 who started as juniors. The drop is attributed by the counselor to the demands of the senior year at this school.

It is not clear how GEM-SET could help resolve this issue.

2. Standardized testing

One counselor expressed strong views on what she described as “filters” limiting access to Bridge. In her experience, the community colleges tend to direct students who don’t do well on standardized entrance exams to certificate programs rather than academic courses.

It is unlikely that GEM-SET will be able to do anything about the standardized testing requirements. However, GEM-SET may wish to play a role in documenting the way girls are tracked in community colleges once they are admitted to Bridge.

3. Bureaucracy

One counselor reported coordination difficulties in getting students admitted to Bridge: “We don’t get applications on time, or sometimes we don’t get information. The person who’s in charge [of Bridge] doesn’t return phone calls.” An interested student last year “kind of fell between the cracks.”

GEM-SET might consider working with College Bridge administrators to facilitate the admissions process.

B. Advanced Placement

1. Inadequate Resources

Students at Lake View who meet all the requirements for AP courses cannot rely on a course being available to them. This year’s AP statistics classes, for example, had 60 places for 150 qualified students. The school does not have the resources to hire additional teachers to meet the need.

It is not clear why, if increasing the number of AP classes available to qualified students is not an option for the immediate future, the school does not more aggressively pursue Bridge courses for these students. While the resource problem is obviously beyond GEM-SET’s scope, it does complicate the goal of raising the number of girls who qualify for AP math and science courses if places are not available for them. GEM-SET might consider a role in promoting Bridge for students who want to take college courses even if they have to do so outside the high school and in spite of time pressures, particularly if the bureaucratic hurdles are reduced.

2. School-specific programs and schedules

Students who reach the 5th level of the “IMP” math program at YWLCS are engaged in advanced math studies. We do not know if this level is equivalent to a college course, or how students might earn college credit for it. It is not clear whether girls at YWLCS would benefit from AP courses instead of the program currently available to them.

Advocating for AP courses at this school does not appear to be a productive role for GEM-SET, given the size and resources of the school, and the math and science programs in place. GEM-SET might wish to explore the possibilities of college credit being granted for the 5th level of IMP.

IV. Schools’ View of GEM-SET

A. Mentoring

Interviewees had a generally positive impression of GEM-SET and indicated they would like it to continue at their schools. They focused on the mentoring aspect of the program, specifically:

- having college students serve as role models
- making the possibility of college more of a reality
- offering a community to girls interested in math and science
- motivating/inspiring girls to pursue careers in math and science

A typical comment was: “These students would be the first generation attending college. They’re low-income, minority. And many have not seen themselves as academically directed. Especially young women in math and science. So this is crucial.”

The value of GEM-SET’s mentoring is described by school staff with admittedly little familiarity with the details of the program. Future data collection might include interviews or focus groups with students themselves to more precisely understand how mentoring works and how it advances program goals.

B. Communication

None of the interviewees seemed to have much information about the specifics of GEM-SET activities. One counselor said she felt “awful” about her lack of information. She could not suggest changes she’d like to see: “It’s just that it’s an extracurricular thing, the work we do is so intense, it’s really hard to establish that kind of working relationship.” A teacher serving as liaison to GEM-SET referred all questions about BRIDGE and college enrollment to the school counselor, and questions about numbers of students participating in GEM-SET to GEM-SET staff.

It was suggested that inconsistent attendance could be improved with more timely information from GEM-SET. At YWLCS, information to be shared through the school bulletin has to be received by Friday, but information about GEM-SET activities is not available until Monday. GEM-SET communicates with participants electronically, but the students cannot be relied upon to check email. “We weren’t so good about letting the students know,” a teacher said.

This is an area where GEM-SET can be more proactive. Specific steps might be taken to build the “working relationship” with school staff that could boost student participation. At Lake View, this could mean forming stronger relationships with counselors and math and science department chairs to involve them in promoting the program. At YWLCS, it could mean learning how information is transmitted in the school, and targeting ways to make sure students know about GEM-SET activities ahead of time.

C. Competition with Other Programs

Competition from a broad array of after-school options, including the usual sports commitments and clubs, was reported at both schools as a challenge to GEM-SET. YWLCS in particular has a number of universities offering not only after-school science activities there, but on-site summer math and science programs at college campuses and other venues around the country. In addition, it has required after-school tutoring, including a math lab and academic workshops, several days a week for students not yet proficient in core subjects. UIC mentors’ efforts to schedule GEM-SET activities after school on Friday, or on Saturdays, have yielded little student turnout.

GEM-SET might take steps to identify activities that would be attractive to students (such as the chemistry involved in ice-cream making that drew about four times the usual number of participants at YWLCS), distinct from other after-school options, and scheduled to maximize participation.

In the future, GEM-SET might identify target schools in which its offerings are not redundant. The mission of the all-girls charter school, for example, focuses on math, science, technology, and the development of leadership skills, and it has the highest rate of college acceptance of any

non-selective enrollment school in the city. GEM-SET might have a greater impact in a school where fewer resources are available to girls.

V. Measurement of GEM-SET's Impact

There were no measures in place, generated by either GEM-SET or the schools themselves, to determine GEM-SET's impact. No variable can be isolated that correlates GEM-SET participation to girls' preparation for or enrollment in college-level science and math courses, or a change in their interest in math and science. None of the interviewees could provide reliable answers about even the numbers of participants, much less specify GEM-SET's impact on girls' enrollment in college-level courses or on their college or career plans.

We could not address the question on how school staff measure impact as no measures are in place. If GEM-SET would like this data in the future, it might consider working with target school staff to develop and implement measures of impact.

VI. Points for Discussion

How can GEM-SET:

- *Help schools collect and analyze data with regard to girls' preparation for and participation in college-level math and science courses?*
- *Help schools negotiate bureaucratic barriers to College Bridge?*
- *Determine the value of mentoring in raising high school girls' interest in math and science?*
- *Improve communication and build stronger relationships with target schools?*
- *Choose target schools that could most benefit from its activities?*