Data-Based Program Reform: A Shift from Supplemental Instruction to Weekly Tutoring Groups

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Abstract

The aim of this analysis was to determine from a pilot project whether a new style of course-connected learning support for students in gateway STEM courses could be more successful on the University of Rhode Island's campus than the traditional Supplemental Instruction (SI) model. The new model, Weekly Tutoring Groups (WTG), addressed several of the challenges (attendance, timing, group size) students and staff reported with the SI model. In the pilot semester, 212 students enrolled in courses previously supported by SI participated in WTG. Compared to SI, the new program saw an increase in students attending regularly, a significant difference in proficient grades between participants and nonparticipants, and a significant difference in the actual grades received by the participants compared to the grades they reported they would have received without participation in the WTG program. The success of the pilot semester has led learning center staff to continue with the WTG program rather than return to SI.

Keywords: learning support, peer-learning, STEM, Weekly Tutoring Groups (WTG), Supplemental Instruction (SI), tutoring program assessment

Supplemental Instruction at the University of Rhode Island

The University of Rhode Island's learning center, the Academic Enhancement Center (AEC), provides tutoring support for "high-risk" gateway courses in STEM disciplines. As is often the case at similar institutions, these courses have many seats per section, which makes them particularly challenging for the many first- and

second-year students that enroll. The proficient grade (ABC) versus unproficient grade (DWFI) rates in these courses helped center staff to identify a handful of courses needing additional attention. For those courses, in addition to its existing tutoring services (walk-in centers and appointments), the AEC began running a Supplemental Instruction (SI) program in 2005.

The AEC's SI model was set up so that students had a leader assigned to work with a specific instructor for a specific course. The SI leader planned and offered two 90-minute review sessions per week. Since students were never required to attend SI, attendance followed predictable patterns: students would tend to show up in large numbers only for the session right before an exam. Students who did attend regularly (defined as 7+ times in a semester), however, usually averaged one grade increment higher (e.g., B+ over a B) than their peers in the course who did not attend SI. This data suggested that SI can work, but that it is more likely to work effectively when students attend regularly. Unfortunately, of the 800-900 students who chose to try using SI (i.e., attended at least one session) in any given semester, only approximately 10% were "regular" attendees. This meant the AEC's sizeable SI budget seemingly served only approximately 80-90 students effectively per semester. Despite efforts by staff to market the information that students who attend SI regularly tended to do better in their courses, poor attendance patterns persisted and canceled sessions were not uncommon due to lack of attendance.

After outreach and marketing efforts failed to make a difference in student attendance, staff surveyed students to determine the reasons they tended not to go to SI. For students who were familiar with SI being offered for their course, a primary reason for not attending involved timing/scheduling conflicts. The timing issue was challenging to address. SI leaders set the time for their sessions, and they were typically offered late afternoon into evening, for these times offered the least amount of conflict for both SI leaders and students. The survey also showed reports of negative experiences, primarily of students not finding the sessions helpful because the sessions were crowded and not tailored to what the individual student wanted. For students who reported this, it is

plausible that they had exclusively attended sessions held directly before an exam. Although students desired to have the sessions be smaller and more tailored, this was not something controlled for within the existing structure of SI where no sign up was required.

Since it was clear that the AEC's SI model was not flexible enough to cater to reported student needs, staff set out to create a new intervention. SI, as it existed, was not working for URI's students; it was not conducive to regular attendance, it had no cap size on sessions, and session timing did not facilitate regular attendance. The AEC wanted to leave those pieces behind and replace them with a new program that would capitalize on the benefits of a program like SI and address the shortcomings. Based on the data collected about the circumstances under which SI had been successful, feedback collected from students, and knowledge of best practices and learning theory as presented in the literature review, AEC staff designed and implemented a new program: Weekly Tutoring Groups. The present study assesses its effectiveness during its pilot.

Literature Review

The literature that addressed some of the weaknesses of Supplemental Instruction at URI's campus and informed the Weekly Tutoring Groups design falls into three main categories: learning theory in group-based learning, the psychology of groups, and general retention theories.

The decision to have the new program be oriented to small groups was based on the long-established understanding of peers serving as valuable learning resources to one another, as well as common pragmatic concerns that make other modes of support, such as 1:1 tutoring, logistically and fiscally challenging (Mackenzie, et al., 1970; Boud, Cohen, & Sampson, 2014). AEC staff hoped, with the new program, to create a comfortable environment in which, by having the group facilitated by a near-peer, students could learn within the Zone of Proximal Development (Vygotsky, 1978). Due to the inconsistent nature of attendance at the existing Supplemental Instruction sessions, such social dynamics of learning had been difficult to capitalize upon.

With regular attendance in smaller groups, tutors would also be better able to incorporate metacognitive learning strategies and general study skills into their sessions. This is something that AEC student staff in both the SI program and the walk-in tutoring centers reported having difficulty doing since they did not have an opportunity to regularly see the same students. Metacognitive skills were of interest to the center, not only because of their effectiveness for students in STEM disciplines in general (Cook, Kennedy, McGuire, 2012), but also because of their impact in shrinking the achievement gap for traditionally underrepresented students in STEM fields (Wilson, Holmes, deGravelles, Sylvain, Johnston, et al., 2012). Improvement in these skills has been previously demonstrated as a possible byproduct of tutoring (DeBacker, Van Keer, & Valcke, 2012).

AEC staff also investigated social psychological principles and behavioral patterns of students that would help achieve the goal of consistent group attendance. Staff found that asking individuals to create a plan of action increased their rate of follow-through (Rogers, Milkman, John, & Norton, 2015). It was also believed that students would be more likely to attend regularly, and have less resistance to group work, when they could choose their own groups, which would often include friends in their existing social network (Morosanu, Handley, O'Donovan, 2010). These findings led the AEC staff to establish a required a sign-up process as part of the new program.

The social support and small cohort design of the groups was also inspired by organizations such as The Posse Foundation, which has consistently shown success in improving academic integration, persistence, and degree completion for non-traditional college students. The foundation is based on Tinto's model of retention (Tinto, 1975 & 1993), and explicitly includes participation in tutoring services and study groups as essential components of academic integration (Jones & Were, 2008).

The literature also pointed out that learning center support which is sign-up-based often suffers from student "no-shows" (those who commit to showing up, but do not follow through) (Molfenter, 2013). This can result in a waste of fiscal resources (paying a tutor to work when students do not show up). The Weekly Tutoring Groups

program therefore implemented three additional layers of no-show prevention effort as described in the methods.

The literature, combined with URI's own survey data, helped AEC staff define an action plan for creating the new program, and informed the following research questions.

Research Questions

1. Would students' regular attendance rates be higher in the Weekly Tutoring Groups program as compared to the Supplemental Instruction Program?
2. Would there be a difference in grades for students who used the program versus those who did not? And who attended the program regularly? Would students retrospectively report that the grade they expected to receive in the class would be significantly higher than the grade they felt they would have received without participating in the weekly group?
3. Would this new program address some of the other reported shortcomings of SI (e.g., having a small enough group to get to know each other, would the group study together outside of the sessions, would they strengthen study skills, and would they use it for a future class)?

Methods

Weekly Tutoring Groups Design

The new program, Weekly Tutoring Groups (WTG), was designed in Fall 2016 (the final semester SI was running) and piloted in Spring 2017. To address the session-timing issues raised by students in their survey responses, tutoring staff's availability was used to set openings for sessions to be 50-minute blocks, with availability throughout the day (9:00am-8:00pm). Start times were typically set on the hour, similar to the University course schedules, for ease of scheduling sessions between classes. Sessions were capped at six students maximum and two students minimum (to ensure a group learning environment as opposed to one-to-one tutoring). Groups were capped at six due to a combination of space availability, literature support for groups at or smaller than that size, and social psychological principles to increase each member's individual

accountability to the group and decrease the possibility of social loafing.

Utilizing scheduling software (Redrock Software's Tutortrac), AEC staff set course competencies for tutors and linked them to availabilities. Unlike for SI, in which each student staff member worked exclusively with one course, tutors offered sessions for any course in which they were proficient. This meant a student in a course like Introductory Chemistry had many time slots to choose from. Upper division tutors typically specialized by setting their course competencies to those upper-level courses, such as Organic Chemistry. This setup allowed an increase the variety of courses for which the AEC offered support, because the capital invested in hiring and training a tutor who could work with multiple courses meant that fiscal resources stretched further.

Rather than having the times chosen for them, students were then able to choose their own times. The impetus was on students to sign up for groups, using a fillable PDF sign up form, inspired with permission by the sign-up used by staff at the UNC-Wilmington's University Learning Center. Students were asked to find at least one classmate in the course and list their mutual top choice times for a session. Although it was more work for students to need to sign up rather than just being able to show up with no sign-up needed (like for SI), AEC staff were interested in the possibility that this would make students more likely to attend on a regular basis.

Though students were encouraged to do as much of their own group-arranging work as possible, AEC staff allowed students to submit their name as a "free agent" who did not have someone else in the class to sign up with but who wanted to be arranged by center staff into an existing group, or paired with another "free agent," contingent upon availability. Of students who requested as "free agents," 69% of them were matched into groups. To ensure that "free agents" who were not matched did not miss out on support, center staff reached out several times by e-mail to share the existing group times in case the student found one that could work with his or her schedule, a list of walk-in center hours, and directions for making appointments at the center. All students' sign-up forms were then matched on a rolling basis through Tutortrac by an

administrative team comprised of one professional staff member, two graduate students, and two undergraduate program assistants.

Importantly, students were told that joining a group was a commitment to attend that group on a weekly basis. The informal contractual agreement was that if a student missed more than two sessions, he or she would be subject to losing the spot in the group. When marketing the new program through classroom visits and online, AEC staff reinforced the message that students do better when they engage with the course material on a regular basis, including attending AEC services regularly (per past experience with Supplemental Instruction). Staff also advertised that this new format allowed for a more tailored session than a "one-size-fits-all" Supplemental Instruction session.

This attendance policy was a point of concern for some faculty who expressed doubt over whether it was feasible to ask students who already did not attend SI regularly to regularly attend a new, seemingly less convenient, program. They also expressed concern about services being taken away from students who violated the attendance policy. Staff explicated for both faculty and students that any students not interested in the weekly commitment could still participate in one of the AEC's other STEM-related services, including one-time appointments and walk-in tutoring centers.

In addition, three mechanisms for retention, not used in SI, were implemented to encourage regular attendance. First, when students were matched with a tutor, they received a letter e-mailed directly from a learning center staff member, congratulating them on their positive decision to join a group, reminding them of the program's policies, then sharing the date, time, and location of the group's meeting. Second, the center used Tutortrac to send reminder e-mail messages to students. The first went out shortly following the initial group letter, and then a reminder was automatically sent at 8:00 pm the night before the dates a student had a session scheduled. Third, the learning center staff ran bi-weekly reports to see which students had missed a total of two sessions. When this happened, the staff member sent an e-mail to the student encouraging him or her to attend the next session and reminding the student about the attendance policy. For students who persisted in absences, they would be dropped from the group.

Participants

The current study included 3,883 student records obtained for students who were enrolled in at least one of the 11 core courses for which WTGs were offered during the spring semester of 2017 and for whom the center had complete data. Though 451 students participated in a group, across 30 courses, for the most fair and direct comparison, the present study only compared students who were enrolled in at least one of the same 11 core courses that were also served consistently by SI in past semesters, resulting in 212 participants.

All courses were in the subject areas of Biology, Chemistry, Physics and Math. Specifically, the courses included the following: Biology 101 (Principles of Biology I), Biology 121 (Human Anatomy), Biology 242 (Introductory Human Physiology), Chemistry 101 (General Chemistry I), Chemistry 103 (Introductory Chemistry), Chemistry 112 (General Chemistry II), Chemistry 124 (Introduction to Organic Chemistry), Chemistry 227 (Organic Chemistry I), Chemistry 228 (Organic Chemistry II), Physics 203 (Elementary Physics I), and Mathematics 142 (Calculus II).

Of the 3,883 students enrolled in at least one of these specific courses, 212 attended at least one WTG and 3,621 did not use the WTG service. Of students who attended at least one WTG, 56.1% were first-year students and 26.4% were sophomores. In addition, 71.7% of students using WTGs were White, 12.7% were Hispanic/Latino/a and 6.1% were Black. Demographics were nearly identical for those students who did not use WTGs and were consistent with demographics of the student population on this campus.

Measures

All data were obtained from surveys administered by the center with the purpose of evaluating WTGs, appointment data recorded by the university learning center, and records kept by the university and uploaded to a campus server. Paper intake surveys were administered to students during their first visit to a WTG, individual visit evaluation cards were collected by the tutors after each visit, and paper exit assessments were given during the final two weeks of WTG sessions. All surveys were given confidentially with private drop-boxes for students to submit replies, but not anonymously

(names and/or ID numbers were used). Students were told that their ratings and comments may be used by professional staff from the center and reported in aggregate. Visit data was recorded in Tutortrac, and student records were accessed via eCampus/PeopleSoft. Data was validated by cross-referencing between these data sources and matching enrollments, attendance, and surveys by student ID number.

Participation in WTGs and Number of Visits. Student attendance to WTGs was recorded each week by group leaders and entered into a database maintained by the learning center. Therefore, at the end of the semester, the student's Tutortrac record includes the total number of times each student visited their WTG(s) for each course. All students who were registered for courses for which WTGs were available, but did not attend a WTG, were recorded as having zero visits and coded as being part of the non-WTG group.

Expected and Actual Grades. Students who used WTGs were asked at the end of the semester to report the grade they expected to receive in the course associated with their WTG, and the grade they believe they would have received if they had not used the WTG. In addition, final course grades were obtained from official university uploads. All grades were entered as letter grades (A, A-, B+, …, F) and converted into numeric GPA scores (e.g., A = 4.00).

Proficient vs. Unproficient Grades. Using the actual course grades uploaded by the university, grades were coded as either proficient (i.e., A, A-, B+, B, B-, C+, C, C-) or unproficient (D+, D, D-, F).

Student Perspectives of WTGs. Students who participated in WTGs were encouraged to complete a survey at the conclusion of their last group session. The response rate was approximately 36%, which provided data for 77 of 212 participants. They were asked to report whether they felt they got to know the members of their group (0=definitely not - 10 =absolutely, yes), whether their group met outside of scheduled visits to study together (0=no; 1=yes), and whether they felt they had strengthened their skills as a product of attending WTGs (0=definitely not - 10=absolutely, yes). Students who participated were also asked to give an overall rating of their tutor (0=terrible - 10=fantastic), and to report the likelihood that they would return to WTGs the next semester (0=definitely not -

10=absolutely, yes). Finally, students could opt to provide additional concerns or comments about their experience using WTGs.

Student Confidence with Course Material. Students who participated in WTGs were asked to report the degree to which they felt confident with the course material before and after each WTG meeting on a scale from one (not at all confident) to 10 (completely confident).

Demographics. Student demographic information (i.e., race/ethnicity and year in school) were obtained from university records.

Analyses

In order to examine attendance patterns for WTGs (RQ1), descriptive statistics were conducted and compared to patterns observed in the past for SI. For the purposes of exploring the effects of WTG attendance, a binary logistic regression was run with proficient versus unproficient grades as the outcome variable and number of visits as the predictor.

To assess whether WTG attendance significantly influenced course grades and confidence with the course material (RQ2), dependent samples t-tests were conducted comparing students' self-reported grade they would have expected to receive had they not attended WTGs and the grade they expected to receive in the course having attended WTGs. The grade expected without WTG attendance was also compared to the actual grade the student received in the course. Additionally, a dependent samples t-test was conducted to assess students' self-reported level of confidence with the course material before and after their WTG sessions. To compare WTG attendees and non-attendees, a chi-square analysis was used to examine proficient grade rates.

Finally, to explore whether the WTG design addressed some of the concerns students had raised about SI (RQ3), descriptive statistics were conducted on the degree to which students got to know other members of their group, whether the group met outside of scheduled WTG time, whether students felt they strengthened their skills as a result of attending WTGs, the effectiveness of the WTG tutor and the likelihood that students would use WTGs for other courses in the future. Open-ended responses provided by students were also evaluated.

Findings

Research Question 1

Would students' attendance rates be higher in the Weekly Tutoring Groups program as compared to the Supplemental Instruction Program?

Of the 3,883 students enrolled in courses for which WTGs were offered, 212 (5.5%) attended at least one WTG session. On average, students visited 7.11 times (SD = 4.86). Notably, 53.5% of WTG participants attended seven times or more and just 10.8% attended only once. In comparison, for students who interacted with SI, 43% of the students only attended one SI session during the semester and only 12% of students attended it regularly (7+ times).

Research Question 2

Would students retrospectively report that their command of the material and the grade they expected to receive in the class would be significantly higher than what they expect they would have received without participating in the weekly group? Would there be a difference in grades for students who used the program? And who attended the program regularly?

Dependent samples t-tests were conducted to examine difference between the grades students reported they expected to earn having attended a WTG, the grades students reported they would have expected without attending a WTG, and the actual grade received in the course. It was found that students' expected grades having attended a WTG (M = 2.74, SD = 0.80) were significantly higher than the grades students reported they would have received without attending WTGs (M = 1.82, SD = 1.04), t (79) = -10.68, p <.001. In letter-grade terms, these expectations equated to students anticipating receiving an average of one full letter grade higher as a result of their participation in the program (specifically, a B- rather than a C-). In addition, their actual course grades (M = 2.69, SD = 0.92) were significantly higher than the grade they reported they would have received without WTG attendance, t (79) = -7.57, p<.001 and were generally the letter grade they expected (B-). Students also consistently reported a significantly higher level of confidence with the material after each of their WTG sessions (M = 8.07, SD = 1.46) than before each of their WTG sessions (M = 5.17, SD = 0.03), t(1,844) = -66.09, p < .001.

Additionally, a Chi-square test of independence was calculated comparing the frequency of proficient grades in WTG attendees and non-attendees. A significant interaction was found ($X^2(1) = 14.12$, $p < .001$), where WTG attendees were more likely to receive a proficient grade (89.60%) than non-attendees (78.90%) (see Table 1.) The unproficient grade rate was more than double for non-attendees than it was for students who participated in WTGs.

Table 1

Proficient Grade Rates Among Attendees and Non-Attendees

		Proficient Grade		
		Yes	**No**	**Total**
WTG Attendance	**Yes**	190 (89.6%)	22 (10.4%)	212
	No	2857 (78.9%)	764 (21.1%)	3621
	Total	3047 (79.5%)	786 (20.5%)	3883

Furthermore, for the 114 WTG participants who were regular attendees (with seven or more visits) to their groups, their proficient grade rate was 93.90% as compared to a 84.8% proficient grade rate for those who participated but did not reach seven visits. Those who went seven times or more were significantly more likely to earn a proficient grade ($X^2(1) = 4.65$, $p<.05$) (see Table 2).

Table 2

Proficient Grade Rates Among Regular and Non-Regular Attendees

		Proficient Grade		
		Yes	**No**	**Total**
WTG Attendance	**1-6 times**	84 (84.8%)	15 (15.2%)	33
	7+ times	107 (93.9%)	7 (6.1%)	114
	Total	191 (89.7%)	22 (10.3%)	213

A binary logistic regression was conducted to assess the influence of number of visits on the likelihood of receiving a proficient grade. It was found that number of visits did not significantly associate with the likelihood of receiving a proficient

grade, although this test approached significance (β = 0.10, SE = 0.06, p = .08).

Research Question 3

Would this new program address some of the other reported shortcomings of SI (e.g., having a small enough group to get to know each other, would the group study together outside of the sessions, would they strengthen study skills, and would they use it for a future class)?

Descriptive statistics were conducted to explore whether the WTG model addressed some of the concerns that had been raised by students about the SI design. In general, students who participated and responded to survey items felt very positive about their WTG experience (see Table 3).

Table 3

Student Perspectives of the WTG Experience

	N	M	SD
To what degree did you get to know the other members of your group? (1-10)	75	7.95	2.74
To what degree did you feel you strengthened your study skills as a result of attending your WTG? (1 - 10)	80	8.94	1.80
How effective was your tutor? (1 - 10)	81	9.34	1.36
What is the likelihood that you will use WTGs for a future course? (1 - 10)	79	9.57	1.39
	N	**Yes**	**No**
Did your group meet to study outside of scheduled WTG time? (Yes/No)	77	42	34

Student Comments:

Intake Comments in response to "Why did you decide to join a Weekly Tutoring Group?"

to do better than last semester

Would like to reinforce what I am learning in a group setting

help to structrue [sic] my stuyding [sic] better understand main points

didn't pass the class in fall '16

not confident in skills

This is my second time in orgo and I want to pass as well as help my gpa.

so i can maintain 3.0 to get into nursing program

to stay on top of this because I don't love chem

I'm slacking a lot

It's a new program and thought I'd give it a try

i realized that with CHM 103 last semester, i should have done something like this. I definitely need extra help it would force me to work on it every week- help w/my schedule

I want to make sure I stay on track with this course took it last semester and failed

I was lost last semester

took the class last semester, didn't pass. need this class to move on in my major

Already got a D lost [sic] semester, needed a c- so I need to understand the material better.

This is my second grade option and want to do well to bring up my gpa

I failed last semester and figured this would help failing last semester

I am re-taking the course

I did not pass Chem last semester so I wish to do much better this semester.

General feedback.

This tutoring group was a lifesaver. Thank you.

LOVED my tutoring session. The group size was perfect and it let me ask questions I couldn't in lecture. Also great time to work with more practice problems step by step.

Loved it! Super helpful. Having other students in the group ask questions helps me with questions that i didn't even know I had.

[My tutor] got to know us and exactly what we learned and liked to be taught. Even got us extra unexpected but very appreciated resources

This tutoring was great. It helped me understand what was going on continuously throughout the semester. [My tutor] was great and extremely helpful.

I am so glad I signed up for this group; [my tutor] has greatly contributed to my success in this course!

[My tutor] is great. Asks you questions on the process to keep you involved in learning the material

The atmosphere is super helpful itself, and the tutors are all very nice and helpful!

> The weekly group is very helpful to stay on top of material, and [my tutor] offers great explanations and advice given that she has taken the class!
>
> Very good small tutoring. Imperative to have groupmates that are individually motivated in order to get work done.
>
> The group setting is less intimidating for students and allows them to form connections with students. I really enjoyed going over the material weekly and believe these groups are a great resource to students! [My tutor] was so knowledgable [sic] and excellent at explanations.
>
> Keep smaller more intimate groups they are much more affective and keep [my tutor] because she's great!
>
> I handed in an application to join a group and it took weeks to find a spot for me, but it all worked out eventually and will definitely be using this as a future resource.
>
> Put tutors in touch with instructors for course they are helping with.
>
> I absolutely loved it and I think it's helpful to have the commitment so you actually go. Also I think it might be nice to have the tutors provide some examples for us so we could work through it together.

Comments regarding session length/frequency.

> I really like these groups. I think it would be helpful if it was twice a week rather than once. If more were made up questions already in place for us to do.
>
> 50 minutes is a short time to study and ask questions to the tutor. Maybe longer sessions if possible.

> It was very helpful, if you were to change anything maybe just make the sessions longer.
>
> In the future it would be a great help if the tutoring groups met twice a week instead of once.
>
> Two 1 hour sessions twice a week or 1 two hour session.
>
> I know this could go both way but the amount of time should be flexible. Some days I wish we had more time, and other times it wasnt [sic] so long, like after an exam. Also, maybe offer it more than once/ week.

Comments with direct comparison to Supplemental Instruction.

> This was a great option, better than SI! More personal!
>
> I liked SI better because there were worksheets
>
> With my tutor, she was also an SI [previously] and therefore had prepared practice problems and worksheets for us with answer keys.
>
> Much more helpful than SI sessions ever were! SI sessions were not helpful and met at awful times. This new tutoring is great and the tutors can be more personal :)

Discussion

Limitations

The assessment of the shift from Supplemental Instruction to Weekly Tutoring Groups was limited in several ways. The most significant impediment to analysis is that neither program has been done in a true experimental format; there is no random assignment into control and experimental groups. Students self-select to participate, which sometimes means students who already have a third-factor of achievement-ambition are the ones who participate,

or the students may be the ones who tend to struggle in their courses and that is the reason they self-select to participate. Evaluation is also limited in the way that analysis of most learning center services is limited: when students achieve a certain grade, there is no sure way to prove a causal link between that grade and their participation in a tutoring program. This analysis also examines only the first semester of data for a pilot project that began in a spring semester (mid-way through the traditional academic year).

As this was a pilot semester, there were also limitations with the cleanliness of data; tutors were responsible for entering the attendance for members of their groups and sometimes the attendance data is missing for students (e.g., rather than showing as "attended" or "missed" the student shows as "status pending"). While AEC staff made efforts to reduce this occurrence, it is also likely that this type of error does not harm the analyses, as assessments were based on the number of sessions affirmatively attended (i.e., definitively marked as attended) rather than sessions missed. Thus it is conceivable that attendance data for Weekly Tutoring Groups may in fact be underreported.

Discussion of RQ1

Would students' regular attendance rates be higher in the Weekly Tutoring Groups program as compared to the Supplemental Instruction Program? The data showed, as anticipated with a pilot, that the overall number of students involved in the Weekly Tutoring Groups program was lower than the overall number of students involved with Supplemental Instruction. However, the WTG participants attended the program more consistently, hitting the benchmark of seven visits during a semester at a higher rate than SI participants had in the past. Though the overall participation was lower in the new program, it appears to have the potential to be more effective in serving students since it helps them engage more regularly with the material.

Discussion of RQ2

Would there be a difference in grades for students who used the program versus those who did not? And who attended the program regularly? The analyses showed a significant difference in the rates of earning a proficient grade between participants and nonparticipants in the Weekly Tutoring Groups program. The binary logistic regression

suggested there might be a relationship between number of visits and grades; the higher rate of proficient grades for WTG "regulars" versus "non-regulars" also supports this hypothesis. AEC staff look forward to continuing to collect data on this and test with a larger sample size in future semesters.

Would students retrospectively report that the grade they expected to receive in the class would be significantly higher than what they expect they would have received without participating in the weekly group? Participants did report that they grade they expected to get in the class (approximately a B-) was significantly higher than the grade they expect they would have received without participating in the program (C-). The students' estimates of their grades were corroborated when final grades were entered into the student data system, and the average grade was indeed a B-.

Discussion of RQ3

Would this new program address some of the other reported shortcomings of SI (e.g., having a small enough group to get to know each other, would the group study together outside of the sessions, would they strengthen study skills, and would they use it for a future class)? Descriptive statistics from the final group meeting survey data suggested that the students in the group did get to know each other, though this was the survey item they gave the lowest rating to and with the highest degree of variability. AEC staff intend to adjust the tutor training program to include more group dynamics training to strengthen this piece of the WTG experience. Though it was not an explicit goal of the program, many groups did study together outside of their scheduled sessions and AEC staff will use this information when describing the benefits of the program to students in the future. Students responded with high ratings when asked about their academic skills development from the program, which suggests the tutors were indeed effective in scaffolding skills alongside course content. Staff were also pleased to find the highest rating was given to the likelihood that the student would use a group in a future course. This is not only auspicious for the next semester of running the program, but suggests the center may want to consider expanding offerings for more upper-level courses as WTG participants move forward in their curriculum.

Moving forward

Center staff are actively working to address student feedback that touched on a limitation of the WTG program which was a strength of the SI program: course-connectedness. Students' comments about wishing there were planned worksheets (as there often were in SI, since student staff focused only on one course and had planning time) have prompted center staff to collaborate with the University's office for faculty development to partner in reaching out to faculty to acquire problem sets and other course materials that can assist the tutors. The AEC will also be archiving resources (worksheets, practice books, etc.) for the use of WTG tutors.

Another common piece of student feedback was the request for more time with their groups. Given the scheduling issues (similar to those of SI) that would come with extending session time beyond 50 minutes, center staff anticipate allowing students to belong to two groups for the same course. This was not allowed as an option during the pilot, but for students interested in meeting more than once per week, the option will be available in the fall semester and attendance and success patterns will be monitored for those students.

Despite some limitations to the evaluation of the AEC's shift from Supplemental Instruction to Weekly Tutoring Groups, center staff are pleased with the preliminary results. The AEC at URI looks forward to getting more students involved in the WTG program and having them attend regularly with hopes that, like their regularly-attending peers, they can pass these challenging courses at a higher rate than the general student population in those courses.

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