The Benefits of a Face-to-Face Support Mathematics Class for Project IDEAL PCC Advanced-level Adult ESL Students Enrolled in SkillsTutor Online

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Background

This research project was conducted in conjunction with a Project IDEAL English as a Second Language (ESL) transition mathematics pilot program being conducted at Pitt Community College (PCC) in Greenville, North Carolina. PCC ESL Coordinator, Janice Fisher, provided background information regarding the program (Appendix B).

Introduction

Since 2005, Pitt Community College (PCC) has participated in Project IDEAL (Improving Distance Education for Adult Learners), which is a consortium of states working to develop effective and high-quality distance education programs for adult learners through joint research and practice. In the fall of 2012, to enhance Project IDEAL's programming, PCC offered advanced ESL students an opportunity to enroll in SkillsTutor (ST), an online program of study by Houghton Mifflin Harcourt. The initial assessment used for recruitment into the transition class was CASAS (Comprehensive Adult Student Assessment System). According to PCC ESL Coordinator, Jan Fisher, "Many of the advanced students are trying to transition from ESL to GED (General Education Development) …and there is a need for a transitional course to help these students cross that bridge, so this year we offered SkillsTutor as an online class to our ESL students" (J. Fisher, personal communication, October 15, 2012). To facilitate the transition from ESL to GED, PCC also offered ESL students a choice between ST online-only and ST hybrid (online and 4 hour/week face-to-face class). The purpose of this research project was to determine the benefits of a face-to-face (F2F) support mathematics class for Project IDEAL PCC Advanced-level Adult ESL students enrolled ST and to answer the question: What is the potential for a F2F hybrid support mathematics class to benefit and facilitate learning for qualified students transitioning from ESL to GED? Answers came from researcher-generated questionnaires, instructor observations, and pre/post test results.

Literature Review

Recent research suggests that ESL students have the potential to overcome language and communication impediments with mathematical vocabulary and/or concepts through the implementation of new technologies and innovative instructional strategies geared specifically towards ESL adult learners. Additionally, the research also recommends that ESOL mathematics instructors consider enhancing current teaching strategies by implementing more informed mathematics resources into their curriculum and establishing new methods for teaching mathematics to adult ESL students. The SkillsTutor online program of study has been used by numerous educational institutions to enhance TESOL mathematics instruction and when combined with supplemental face-to-face instruction, the potential for student success appears significant.

Strumminger (2011) reports on the findings of an Adult Basic Education (ABE) Minnesota-based case study using SkillsTutor (ST). ABE students are using the ST online program of study to prepare for General Education Development (GED) exams, Accuplacer tests, and to help fill in knowledge gaps prior to college enrollment. The ST program of study can be used as either a supplemental resource or strictly as a Distance Education program; however, research suggests that a hybrid class has the potential to be more helpful to students transitioning from ESL to GED than DE only. The hybrid is a blended learning approach incorporating face-to-face instruction as a supplement to independent, self-paced, online instruction. The Minnesota case study informed and advanced this pilot study research into the effectiveness of ST as a means of facilitating ESL mathematics instruction and potential transition to GED.

In making a comparison between the Minnesota and PCC ST programs targeted specifically towards the ESL demographic of student, the requirements for participation were similar. For example, in both programs, CASAS scores were used as the means of assessing proficiency in English, but not competency in math. One difference, however, in enrollment

criterion between the two is that in order for ESL students to even enroll in the the Minnesota ST program, they had to have at least a 4.0 GE (Grade Equivalent) math score on the TABE. In contrast, no TABE math score was necessary for ESL students to enroll in the PCC pilot program, although students were assessed for competencies during the first F2F session using TABE mathematics pre-tests. These initial test scores enabled us to: 1) measure current level of mathematical ability, 2) detect any prior knowledge of the subject, and 3) pinpoint areas of weakness. Moreover, in comparing the two programs, both seem to support the notion that ST F2F supplemental classes are beneficial to ESL mathematics students, due to regular interaction with peers and teachers. In fact, statewide research data for the Minnesota study (2011) indicates that ST provides much needed assistance to ABE/ESL students, and determined that there is a significant and positive correlation between student scores and contact with the F2F instructor.

Barton & Neville-Barton (2003) present research that: 1) reveals how language affects mathematical understanding for ELLs (English Language Learners) at the college level, 2) provides evidence that ELLs tend to be disadvantaged in mathematics, 3) indicates that ELLs tend to lack knowledge of specific L2 technical terminology, and 4) suggests that ELLs tend to rely on symbolic modes when uncertain about the meaning of text in word problems. Assuming ELLs at the college level have acquired a basic knowledge of the language system, this article indicates that when ELLs are given an opportunity to attend ESP (English for Specific Purposes) courses that focus on the language and/or vocabulary necessary to understand specific academic disciplines, their understanding significantly increases in that particular subject area. It seems that the ST F2F transition mathematics course could be considered an ESP course because it provides ELLs with an opportunity to learn the *language of mathematics* including: a) new and/or previously learned concepts that have been forgotten, b) unfamiliar terminology, and c) specific vocabulary for geometry and Algebra. Barton and Neville-Barton (2003) also suggest that ESP courses might perhaps need to be redesigned in order to meet the language needs of L2 students,

with respect to mathematics and mathematics learning, via applied linguistics models that help identify the relationships between an ELL's language acquisition and mathematics performance.

Research suggests that there is a correlation between ELLs' mathematics language knowledge and content knowledge, and that some math concepts can perhaps be taught without "language," per se, but through the extensive use of symbols, illustrations, graphs, and diagrams. These studies inform and support the PCC pilot study, based on the following: PCC ST hybrid students had difficulty understanding and correctly answering word problems that contained technical and/or unfamiliar terminology, but when an illustration or graph was included, along with teacher or peer assistance, most students were able to figure out the answer. For example, one student could not figure out a text-only word problem that read, "a square with diagonal lines drawn from opposite corners." The term *diagonal* was unfamiliar to this student, so to facilitate her understanding, the instructor had her draw the square, identify opposite corners, and try to figure out the meaning of *diagonal lines* from her drawing. The potential benefit of illustrations with word problems is that when they are included or student-drawn (based on information provided), ELLs may be better able to figure them out on their own.

Although online and hybrid classes have been effective in helping ELLs learn mathematics, a study by Martiniello (2009) indicates that the nonmathematical linguistic complexity in math word problems may present difficulties for ELLs, exclusive of the learning environment. According to Martiniello (2009), linguistically complex mathematical word problems "compromise (the ELLs') understanding of math word problems" (p. 162). The math word problems used in the Martiniello (2009) study had both linguistic and nonlinguistic symbols, and the problems containing symbolic or visual representations were better understood by ELLs even if the text was more linguistically complex. The study by Martiniello (2009) also indicates that the inclusion of low frequency, *non*-mathematical lexical terms in word problems, especially when these terms are necessary for comprehending the item, hinder ELLs' mathematical understanding. When a word problem contains subject specific, unfamiliar,

technically advanced, non-essential lexical language, the ELL's ability to comprehend and/or answer the question is significantly hindered. In contrast, when word problems contain grammatically and linguistically simple, high frequency, non-mathematical lexical items, they are easier to figure out, even if less-familiar mathematical terms are included, because the meanings can be derived from context. Martiniello's research is relevant to the PCC hybrid mathematics class study, because it contains applicable information regarding ELLs and their ability to understand and answer linguistically complex mathematical word problems, with or without the advantage of pictures or graphs. Moreover, Martiniello's study supports the PCC research because quite a few of the advanced ESL students in the ST hybrid class had some difficulty understanding and answering linguistically complex word problems, as in the student's case mentioned earlier. On the other hand, these same students correctly solved linguistically simple word problems, even when the problems were presented orally, without written text or visuals.

Recent research not only indicates that ESL mathematics students benefit from online and/or supplemental mathematical instruction, and adequately illustrated word problems (depending on linguistic complexity), but Abedi, et al. (2006) also suggest that the ELL's past exposure to concepts and subsequent mathematical abilities may significantly impact his or her skills and performance in the present. However, no matter what the ELL's previous level of proficiency, Abedi proposes that when ELLs are provided with sufficient content and skills delivered by competent math instructors, they seem to be able to learn higher level mathematics and demonstrate progress in mathematical performance, thus indicating that prior knowledge of mathematics at any grade level impacts the ELLs performance at the next level. Instructional strategies from this study were incorporated into the PCC ST hybrid math class, including: (1) taking an holistic approach (inter-connectedness between mind, body, and spirit) to teaching mathematics by incorporating specialized instructional strategies, such as teaching to various learning styles, etc., (2) allowing group work/peer tutoring in class, and (3) allowing ELL students to use their L1 in class to better understand the concepts being taught in the L2.

Furthermore, Abedi (2006) indicates that a relationship exists between bilingualism and mathematics learning, and that mathematical discourse (i.e., the unique technical language of mathematics) needs to be taught to L2 students, whether they are learning it for the first time or re-learning it in the new language. To illustrate this idea, according to instructor observation during the PCC F2F pilot sessions, the higher level students tutored their peers, collaborated on in-class assignments, asked focused questions that benefitted the entire class, took detailed notes, and copied diagrams and illustrations. While all of these advanced ESL students admitted to having some fear of learning/re-relearning math initially, by the end of the semester, most showed a marked improvement in concept knowledge, computational skills, and overall mathematical ability. Some of the students from Mexico did long division differently from the way it is done here in the U.S. The instructor told them it did not matter how they did it, as long as they understood what they were doing and got the correct answer. The Abedi study is relevant to this instructor's ESOL situation with teaching mathematics to adult ELLs, based on the fact that most of the students in the hybrid class had not had any contact with math for years, and were therefore anxious and somewhat doubtful of their ability to succeed beyond the basics. Being rusty in math does not mean being incompetent; therefore, as the instructor for the PCC ST hybrid class, it is my job to refresh and reawaken the student's ability to think in abstract terms and to make learning/re-learning math enjoyable and as stress-free as possible.

Finally, Reyes & Fletcher (2003) report on a long-term observation of successful math programs for ESL migrant students in the Rio Grande Valley in Texas. The researchers were hoping to identify successful math programs and teaching strategies used for migrant students; however, they discovered something that proved to be more effective than any particular instructional technique: organizational culture (OC). According to the study, an organization's culture, "consists of what its members believe is true, what they value as important, and how they get things done" (p. 316), and the OC found in these schools seemed to be a major factor supporting the math programs directed specifically towards the unique migrant student

demographic. OC at these institutions included: (1) a workplace culture focused on instructional improvement, (2) respect for all students, (3) learner-centered instruction, and (4) a curriculum that emphasized constant review by having students repeat the study of a subject at different grade levels, each time at a higher level of difficulty and in greater depth (2003). Although the PCC ST hybrid class ESL participants are not migrant students, the findings presented in this article are relevant to the PCC pilot study in that they not only illustrate effective ways for maintaining successful math programs for ELL/migrant student populations, but they also reinforce the organizational culture promoted at PCC, where ESOL instruction is learner-centered and the ESL student population is respected, supported, and encouraged.

Method

This research study is a result of a grant proposal put forth by the ESL department at PCC to secure funding for a Basic Skills Distance Learning Program for Project IDEAL. "Many Advanced ESL students at PCC would like to transition from the ESL program into the GED program, but feel inadequately prepared for the mathematics component of the GED; therefore, PCC has offered two classes of SkillsTutor, one being completely online and the other a hybrid" (Fisher, 2012, personal interview). According to Fisher, effective strategies for Project IDEAL programming is to encourage the use of "contextualized instruction in the traditional classroom instruction for hybrid courses which focuses on reading to *learn* rather than *learning* to read." In other words, in an ESL F2F mathematics class, English language acquisition and proficiency, as it relates to adult literacy, is being used as a tool for teaching context-based, hands-on mathematics activities in the classroom.

Participants

The participants for this pilot study were advanced level PCC ESL students that wanted to transition from the ESL program to the GED program. According to Fisher, there had to be at least 30 advanced ESL students enrolled in the SkillsTutor online program for the hybrid pilot class to be funded. Once the funding was secured, at least half of these students had to commit to

attending the face-to-face hybrid class for 4 hours a week for the 16-week semester. On September 14, 2012, 18 students enrolled in the hybrid class and were the control group for the Project IDEAL pilot program, as well as the target population for this study.

Instruments

Project IDEAL and the SkillsTutor ESL hybrid transition math class are grant funded through the College and Career Readiness Division of the North Carolina Community College System, therefore, PCC is required to perform standards-based Assessments for Accountability to measure the effectiveness of the program through an increase in student test scores based on initial pre-testing followed by end-of-semester post-testing (J. Fisher, p.c.). Measuring instruments used for official student assessment included: CASAS (Comprehensive Adult Student Assessment System), TABE (Test of Adult Basic Education), and SkillsTutor Math. Only the TABE and SkillsTutor pre/post test scores were used for assessment and results for the pilot study; however, CASAS scores will not be used because they do not measure mathematical proficiency. Additionally, students were given pre-post instruction questionnaires about the SkillsTutor hybrid/face-to-face class (Appendix A). According to Schmitt (2010), Specific/ General Purpose constructs (tests for specific purposes), such as ST/TABE pre/post tests in mathematics for ESL students, are not only a means for measuring learners' understanding in a specific content area, but also for measuring their L2 proficiency. For example, not only did the pilot program ESL participants demonstrate L2 proficiency based on their pre-post tests, but also, based on teacher observation, their ability to quickly learn/relearn concepts in the L2, discuss and share among themselves in the L1, and then immediately return to the L2 for class discussion, to ask questions, and other F2F interaction with the instructor.

Procedure

Thirty advanced ESL students with qualifying CASAS scale scores were given an opportunity to enroll in SkillsTutor online for mathematics. Eighteen of the original thirty

students also enrolled in an F2F, two-night-a-week class. During the first F2F session, students were assessed using a TABE mathematics pre-test which measures competence in: 1) computation: fractions, decimals, integers, division, multiplication, percentages and beginning algebra concepts, and 2) applied math: word problems, geometry, measurements and data interpretation, for a total of 50 questions in all. These TABE pre-test scores provided the foundation for L2 face-to-face class instruction, based on specific areas of weakness per individual student scale score data. During the first six to eight weeks, students were given group instruction only in basic computational concepts, including addition, subtraction, multiplication, and division of whole numbers, integers, fractions, and decimals. All students needed to learn/re-learn the basics in the L2 before attempting to learn more difficult concepts, and worked together on hands-on activities and assigned tasks. During this time, students worked in groups or pairs, using their L1 (as needed/if possible) to explain concepts being taught in the L2. Based on quizzes and instructor observation, after 6-8 weeks of instruction in basic math, students appeared ready to advance to higher-level concepts, such as word problems, geometry, algebra, and data interpretation. Students continued working in groups or pairs, doing worksheets, hands-on activities, and appropriately leveled TABE workbooks specifically targeted to individual needs. One-on-one teacher assistance was provided, as needed. At mid-semester, students took post-tests for computation using the same TABE levels they were tested at originally, and based on these scores, the class as a whole demonstrated overall improvement in mathematical competency and ability. ESL Coordinator, Janice Fisher, will post-test the advanced ESL Students in the ST hybrid pilot program on December 3-4, 2012 using the TABE for mathematics to determine which students are prepared to transition to GED (if possible, these scores will be included in the results data for this project). Those that score below the minimum TABE Math score of 506, will be given an opportunity to re-enroll in ST online and/or the hybrid class, depending on the results of the pilot program.

Findings

TABE pre-test scores were used to identify student strengths and weaknesses in specific math concepts and were used by the L2 F2F instructor for lesson plan preparation and individual instruction/assessment during the semester.

TABE test scores were generated from an initial assessment given at the first class meeting to determine competency levels for computational and applied math (word problems): ***TABE Pre-test Class Average Mastery of Concepts: Computation: 44.8**; Applied Math: 46.6.

Class Average Grade Equivalent (GE) for Computation 4.3 and Applied Math: 5.9.

GE 2.0-2.5 2/18 students with *little* prior knowledge or ability

GE 3.3-5.9 13/18 students with *some* prior knowledge and ability

GE 7.0-12.4 3/18 students with *substantial* knowledge and ability

TABE Pre-test predicted GED Math scores: 2/18 > 410; 13/18 = 300 – 400; 3/18 <300.

TABE Pre-test predicted GED Math scores: 220 minimum; 420 maximum; 300 average.

***TABE Mid-semester Class Average Mastery of Concepts: Computation 67.2**

According to the preliminary findings, based on mid-semester test grades for computation only, teacher observation, and student feedback, the F2F support class proved to be effective in assisting ESL students to increase their knowledge, skills, and abilities in math, especially in the areas of greatest weakness: fractions, decimals, percent, geometry and Algebra. SkillsTutor online and TABE Post-test score data will not be generated until after this research project has been submitted; therefore findings are based on unofficial in-class TABE pre/post-test comparisons, researcher/instructor observation, survey questionnaires, and predictions for student outcomes. Based on in-class quizzes/tests/observations, student outcomes are predicted to show an overall improvement in mathematical competency in both SkillsTutor online and on the TABE.

Discussion

The findings of this study provide evidence as to the benefits of a hybrid face-to-face support mathematics class for Project IDEAL PCC Advanced-level Adult ESL students enrolled in ST. The findings also indicate the hybrid course has the potential for high retention rates, which are essential to both program continuation and student success. Based on the mid-semester F2F test scores, student feedback, and researcher/instructor observation, the PCC ESL SkillsTutor hybrid face-to-face support class does facilitate learning of mathematical concepts for students transitioning from ESL to GED. Of note, based on teacher observation, no matter what the TABE pre-test grade equivalents were for individual students, which ranged from 2.0 to 12.9, all of the pilot program participants showed weakness in the following concepts: fractions, decimals, percent, geometry and Algebra. This is not surprising, based on the researcher's experience with AHS/GED/developmental studies' students at the community college level. Basic math concepts, such as addition, subtraction, multiplication and division, seem readily accessible for the older, non-traditional student, (which include Advanced ESL transition students); however, more complex concepts seem harder to remember and apply. TABE pre-test scores proved advantageous because they helped identify what mathematical concepts students needed to study, determined areas of weakness and allowed the instructor to assign specific tasks targeted to improve skills and performance.

According to student feedback, ST online did not provide clear or adequate directions for completion of some tasks, and did little to advance their understanding of new concepts. The pilot program participants unanimously agreed that they preferred face-to-face instruction, group work, peer tutoring, and one-on-one student/teacher interaction. Students also unanimously agreed that attending the F2F class prior to doing ST online made a difference in understanding difficult concepts and aided in successful completion of online assignments. As Strumminger (2011) states in her study, the ST online program of study proved to be better at providing a "review of

concepts than for presenting totally new concepts" (p. 9). Evidently, some prior knowledge is assumed and explanations are lacking full clarification; therefore, math instruction works best if students are somewhat familiar with the concepts beforehand. The pilot group indicated that certain online ST assignments were easier to understand and complete when those concepts had been previously covered in the F2F support class.

Conclusion

> The PCC ESL department offers effective and comprehensive adult education and literacy programs, such as Project IDEAL and SkillsTutor online/hybrid, so that qualified students can benefit from these programs and hopefully achieve personal, academic, and occupational self-sufficiency and successfully transition to more advanced educational levels (J. Fisher, p.c.).

As a result of this study, what are the implications for using ST hybrid mathematics instruction for PCC Advanced ESL students transitioning to GED? The ST hybrid face-to-face support class, specifically targeting mathematics, has the potential to significantly benefit the ESL student during transition to GED by: 1) assisting students facing unique linguistic challenges and potential disadvantages in mathematics; 2) supporting, encouraging, and motivating students transitioning from ESL to GED; 3) using SkillsTutor and TABE pre-test scores to help identify mathematical weaknesses; and 4) offering regularly scheduled learner-centered instruction that incorporates group work, peer tutoring, and student-teacher interaction.

Even though all of the pilot program participants were at the same competency level for ESL and desiring to transition to GED, they were at different competency levels for mathematics. Mathematical competency seems to be based on the student's level of education completed and any prior knowledge of math concepts. Based on this information, this researcher recommends

that the PCC ESL department consider offering two separate ST online/ST hybrid classes, depending on student need, for Advanced ESL students transitioning to GED: one as a math concepts *refresher* course and another as a math concepts *first-time learner* course. Additionally, according to PCC ESL Coordinator, Jan Fisher, "Student retention in Project IDEAL and SkillsTutor is of utmost importance, and is essentially measured by the total number of students who are both pre and post-tested." The student retention rate for the ST hybrid class was 88% (16/18) and may perhaps be attributed to the regular teacher-student interaction and/or intrinsic student motivation. Whatever the case, the hybrid mathematics class appears to have been a success, and it is clear that, "Students (who) *have* the opportunity to learn… must also be motivated to *take* that opportunity" (Abedi, et al, 2006, p. 76) and to stick with it. Yet, as Strumminger (2006) admits, "(there will) always be some who won't take advantage of supplemental resources and/or lack the intrinsic motivation to even try" (p. 3). On a final note, one male student *summed* (no pun intended) it up nicely, "This class *woke up* my math!"

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APPENDIX A
ESL Student Survey Questionnaire Results
SkillsTutor Hybrid Class Fall 2012

1. Why did you enroll in the SkillsTutor program?

2. What do you think are your weak areas in math?
   Percent/Decimals Division Fractions Geometry Algebra

3. Are you doing SkillsTutor online? Yes/No

4. What level are you working on at this time?
   Beginning ABC Basic Math Intermediate Algebra

5. Are you able to complete the SK online before or after the F2F class?
   Before/After

6. Is ST helping you to learn math concepts? Yes/No

7. Is the F2F class helping you to learn math concepts? Yes/No

8. Is F2F better for you? Yes/No

9. Do you think ST hybrid class should continue? Yes/No

10. Would you take this class again? Yes/No

11. Do you think you need this class again? Yes/ Maybe

12. Do you think the F2F teacher is doing a good job? Yes/No

13. Would you recommend the Skills Tutor hybrid class to other ESL students? Yes/No

14. How long have you been in ESL classes at PCC?
   < year one year >year

15. Do you plan to take the GED in English? Yes/No Why?

APPENDIX B
INTERVIEW QUESTIONS
JANICE FISHER, PCC ESL COORDINATOR
October 15, 2012

What is Project IDEAL and how long has PCC been participating in the program?
Project IDEAL is (Improving Distance Education for Adult Learners) and PCC has been involved with the program since 2005. Basically, it is consortium of states working together to develop effective distance education programs for adult learners. Through collaborative research and practice, the consortium works to raise the quality of distance education across the country.

How is Project IDEAL funded?
PCC receives funding for Project IDEAL through grants from the College and Career Readiness Division of the North Carolina Community College System. Without this funding, the ESL department would be limited as to the educational opportunities we can extend to qualified ESL students. In order for the hybrid pilot program to be funded, there had to be at least 30 advanced ESL students enrolled in the SkillsTutor online program. Once we had the funding, then we had to make sure at least half of these students committed to attending the face-to-face hybrid class for 4 hours a week for the 16-week semester.

What is SkillsTutor and why is PCC conducting a SkillsTutor hybrid pilot program at this time?
Many of the advanced students are trying to transition from ESL to GED or curriculum classes and there is a need for a transitional course to help these students cross that bridge, so this year we offered SkillsTutor as an online class to our ESL students. PCC already has the SkillsTutor software program and a number of ESL students who want to get their GED or transition to curriculum classes are using the program as independent study. There is an interest in DE and a definite need for a transitional math class has been established for this population. We believe that a SkillsTutor hybrid will better serve the ESL student population. At the end of the semester, we will compare the two classes, online only and the hybrid, in hopes that we can improve our current DE program and determine ways to improve it. Also, let me say that we want to encourage our ESL instructors to use contextualized instruction in the classroom, especially for the hybrid math course, because this type of instruction really focuses on reading to *learn* rather than *learning* to read. The advanced ESL students know how to read and communicate in English, so they are prepared to read and learn math in English, and they are excited to have this opportunity.

What is the target population for the pilot program?
Students for the project will be recruited from regular ESL classes, from the dropped/withdraw list, and from the community at large. They will be assessed based on CASAS and ESL advanced level scores of 221-235 will determine whether or not students can enroll in the program. Then, based on a survey given during the SkillsTutor orientation, students will be placed in either the hybrid or online-only class. Students must also commit to attending the face-to-face class four hours a week, on Monday and Tuesday evenings from7-9 PM. We really hope that ESL students enrolled in the hybrid math class will be encouraged to stick with it and make progress towards transitioning to GED, especially with the support of the teacher and other ESL students.

How did you select the SkillsTutor instructors for the ESL transition class?

There were already two ESL instructors who had completed the DL 101 training through IDEAL back in April, but we were still looking for a qualified instructor to teach the hybrid math class. I was glad when you called back in May, and was very happy to offer you the position, especially based on your educational background and experience working with GED and developmental studies students here at PCC. You were a Godsend, really, and I am looking forward to seeing how the hybrid math class turns out! In fact, none of the other ESL instructors would even consider teaching a math class!

What are you hoping to accomplish through the SkillsTutor hybrid pilot?
As I said, many Advanced ESL students at PCC would like to transition from the ESL program into the GED program, but feel inadequately prepared for the mathematics component of the GED, so the hybrid class would give them extra support to make the transition. Anyway, what we hope to accomplish with the hybrid class is to get more of the local ESL population participating in our programs and to see our advanced students successfully transition from ESL to GED or college classes. In order to really measure the effectiveness of any program, though, we need to see an improvement in scores and retention rates. The total number of students who are both pre and post-tested in the hybrid class can measure this. Student success is the goal for all our ESL programming. The PCC ESL department offers effective and comprehensive adult education and literacy programs, such as Project IDEAL and SkillsTutor online/hybrid, so that qualified students can benefit from these programs and hopefully achieve personal, academic, and occupational self-sufficiency and successfully transition to more advanced educational levels. Student retention in Project IDEAL and SkillsTutor is of utmost importance, and is essentially measured by the total number of students who are both pre and post-tested.