SELF-STUDY REPORT
CUNY Start Program

Program Overview

The CUNY Start program at Hostos Community College—one of several community colleges within the City University of New York (CUNY) system—provides intensive academic preparation in reading, writing, and math. The CUNY Start program is supported by the City University of New York (CUNY), as the program is located at a total of 8 CUNY colleges (including all the community colleges). In addition to providing intensive academic preparation, CUNY Start also offers a college readiness component that prepares students for college success. All students who apply to a CUNY school are required to take assessment tests in Reading, Writing, and Mathematics to determine their readiness for college-level work.[1] Students who do not pass these assessment tests are required to take remediation, typically in the form of remedial or developmental courses that are both credit and non-credit bearing (for more information about the CUNY Assessment tests, see *Appendix A*).

CUNY Start provides an alternative to taking remedial courses in college, which often require students to use their financial aid. The program enrolls CUNY students who have been accepted to one of the CUNY colleges, but are deemed not yet ready for college-level work based on their scores on the CUNY Assessment Tests. In order to be accepted and enrolled into the CUNY Start program prospective students must participate in a carefully designed intake process. The intake process entails participation in an orientation to the program, followed by a one-to-one interview with a faculty member or an academic advisor who evaluates their readiness for this accelerated program. The intensive intake process helps to ensure that students who enroll into the program are ready for the intensive and rigid structure of the CUNY Start Program.

Once prospective students are accepted, students must attend a two-day pre-course orientation to the program, which includes a tour of key college offices and services, a description of the curriculum and expectations as well as other onboarding activities including a contract of expected attendance and class regulations.[2]

Students pay a nominal fee of $75 to enroll in the CUNY Start program; in this way CUNY Start students are able to save their limited financial aid dollars for credit-bearing college courses, rather than on non-credit remedial courses. The CUNY Start program also provides books and materials at no cost to the students. Additionally, CUNY Start students at Hostos Community College have access to all the key college services such as the library, the Hostos athletic center, the Hostos Children's Center[3], and other services.

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[1] Students may be exempted from these exams based on their high school New York State Regents examination scores or SAT scores.

[2] Attendance requirements for the CUNY Start program are strict; students are limited to a maximum of six absences per semester.

[3] The Hostos Community College Children's Center, Inc. (the Center) is a privately incorporated, campus-based childcare center licensed by the New York City Department of Health. Quality childcare is essential to the educational goals of many Hostos students; thus, the Center strives to provide an environment where language is "a bridge, not a barrier" to obtaining quality, campus-based childcare.

Scheduling and Testing

Because of the intensive nature of the CUNY Start Program, students do not take college courses while enrolled in the program. CUNY Start offers two scheduling options for students, full-time and part-time:

The CUNY Start program includes three major courses, a Reading/Writing course, a Pre-College Math course and a College knowledge seminar.

- The full-time option is 25 hours per week (Monday – Friday, 9 a.m. to 3 p.m.) and students take both the Academic Reading/Writing Course **and** Pre-College Math. This option is for students who require remediation in at least Writing and Algebra, although the typical student has failed at least three tests including reading, writing and one of the Math tests (Pre-Algebra or/and Algebra). In addition, students attend one hour weekly seminar on college knowledge.
- The part-time option is 12 hours per week (afternoon: 2 p.m. to 5 p.m. or evening: 6 p.m. to 9 p.m.) and students take Academic Reading/Writing Course **or** Pre-College Math. This option is typically for students who require remediation in either reading/writing or only in math, but also serves students who have challenging schedules that make it difficult to participate in the full-time option. This Part time option also incorporates a hour weekly seminar on college knowledge.

The CUNY Start program offers 2 phases for students to receive intensive instruction:

- Phase I - provides 15 weeks of instruction for enrolled students. At the conclusion of this Phase, students are required to retake the CUNY Assesment Tests that they need to pass and only in the areas they were preparing for in CUNY START.
- Phase II – provides an addition 3 weeks of instruction, immediately following phase I for students who have not passed their required CUNY Assessment Tests. At the conclusion of this phase, students take the CUNY Assessment Tests they need to pass, again.

After phase II, students are expected to return to their college of acceptance, whether they fail or pass their required tests. Students who have passed their required skills tests are now able to return to their 'home' college and begin taking college level courses. Students who still have remedial needs may need to take additional remedial courses or workshops at their 'home' college, but because of their participation in CUNY Start, their skill levels have increased substantially. This allows these students to complete their remedial work quickly and move on to college-level courses. (See "Outcomes Assessment" section for more information.)

Professional Development for the Instructional Team

CUNY Start instructors and advisors are carefully selected, trained, and supported. Teachers are pre-screened by the CUNY Start Professional Development Team and finalists who meet the basic professional criteria. They are then referred to, and interviewed by the CUNY Start Campus Director and another staff who select the campus candidates. Besides their skills and

experience in teaching or advising, staff is selected for their ability and affinity to work in a very collaborative learning community. Prior to being assigned a group or a class, instructors must complete an apprenticeship for one semester with an experienced teacher or advisor. Once appointed, instructors and advisors are coached and evaluated by the CUNY Start professional development team and given frequent feedback. Additionally, CUNY Start staff and instructors attend staff professional development days to continue honing their craft and staying current with new program developments within and outside the campus. In addition, the CUNY Start Director and/or Coordinator complete a final evaluation of each teacher and advisor, at least once a year.

Program Mission, Goals, and Objectives

CUNY Start is a pre-college program that is housed within the Division of Continuing Education and Workforce Development (CEWD) at Hostos Community College. CEWD plays an important role in the mission of Hostos Community College, which is to provide access to higher and postsecondary educational opportunities leading to intellectual growth and socio-economic mobility. The CUNY Start program contributes greatly to the role of CEWD by providing students with the tools necessary to be successful in their higher education careers.

The primary goal of the CUNY Start program is to support student success through intensive preparation to make students ready for college-level work and successful in their academic endeavors. In order to ensure that the CUNY Start program makes significant progress towards achieving this primary goal, the program has adopted the following objectives:

- Ensure that students complete the CUNY Start program;
- Ensure that CUNY Start students pass their CUNY Assessment Tests and become exempt from remediation or make substantial gains and enroll in college with a reduced need for remediation.
- Support post-CUNY Start college enrollment, particularly enrollment into Hostos Community College; and
- Ensure that students have the college-readiness skills to succeed in college; these include academic career planning, study skills, familiarity with the CUNY systems, and research and critical skills.

At the CUNY-wide level, the CUNY Start Central Office focuses on the outcomes across the 8 CUNY Start programs, as opposed to focusing on the performance of individual programs.

However, in addition to the CUNY Central assessments of CUNY Start, the program at Hostos conducts its own analyses that focus on the outcomes of students in its program. These analyses are based on the program objectives discussed above. The Hostos CUNY Start program has set the following targets based on those objectives:

- Increase, by 5%, the percentage of CUNY Start students who enroll into Hostos Community College after completing the program at the end of each term.
- Ensure that at least 80% of the students enrolled complete the program

- Ensure that 90% become proficient in at least one remedial area (math, reading, or writing)
- Meet the following outcomes goals:
    - 40% of those students needing to pass the COMPASS Reading Test will do so.
    - 50% of those students needing to pass the CUNY Assessment Test in Writing (CATW) will do so.
    - 35% of those students who are remedial math will pass the course and be ready to take college-level math courses.

Outcomes Assessment

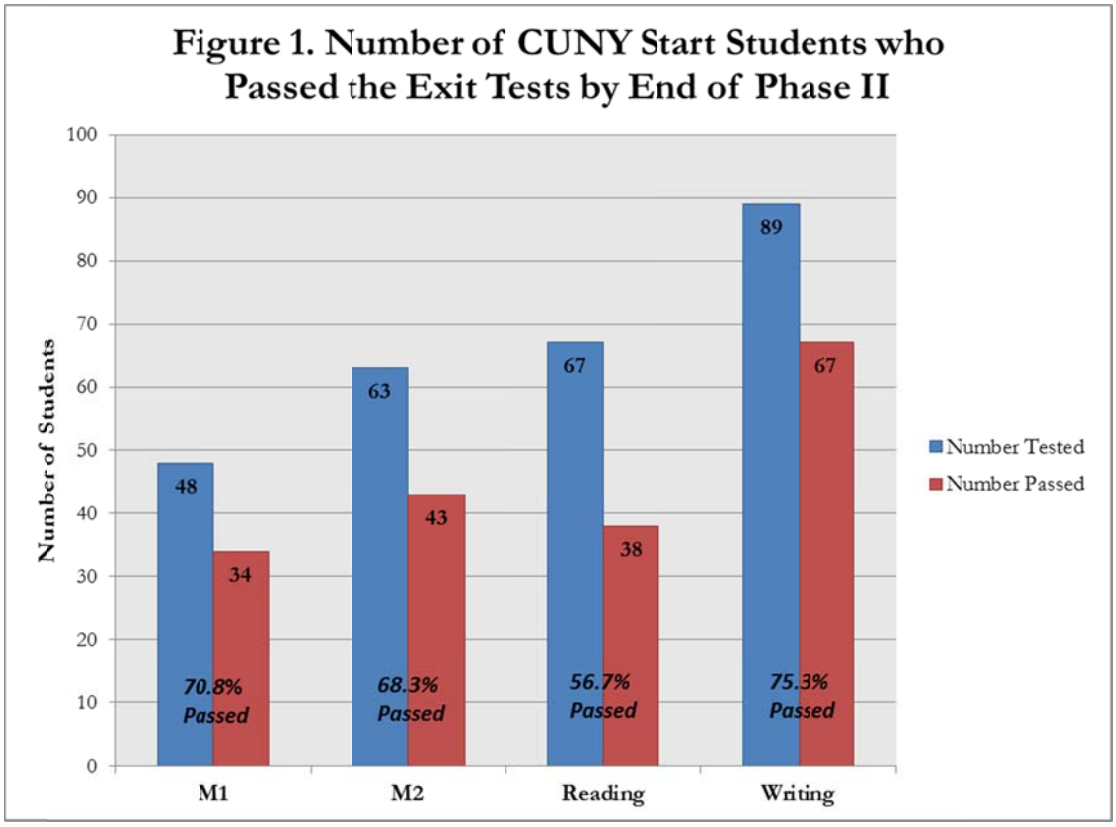
To assess the outcomes, with regards to reaching the aforementioned targets, a study was conducted of the Fall 2011 CUNY Start students[4] who completed the program and took the required exit tests. The study focused primarily on results from the testing data, the enrollment and retention of CUNY Start students into Hostos, and a comparative analysis that compared CUNY Start students to non-CUNY Start students who enrolled in Hostos at the same time.

Testing Results

In the Fall 2011 cohort, 80 students were enrolled in the part-time program and 55 were enrolled in the full-time program (135 students total). Of the 135 students enrolled, 117 completed the program (86.6% completion rate). The study examined the 117 students who completed the program and took exit tests for either pre-algebra (M1), algebra (M2), reading, and/or writing at the end of phase I.[5] Students in this cohort who failed the assessment tests at the end of phase I were able to enroll in phase II and retake the exams they needed.

Figure 1, below, shows the number of Fall 2011 CUNY Start completers who sat for each exit test and the number of students who eventually passed the exams by either the end of phase I or phase II[6] (see Appendix G for more testing results and enrollment and retention data.)

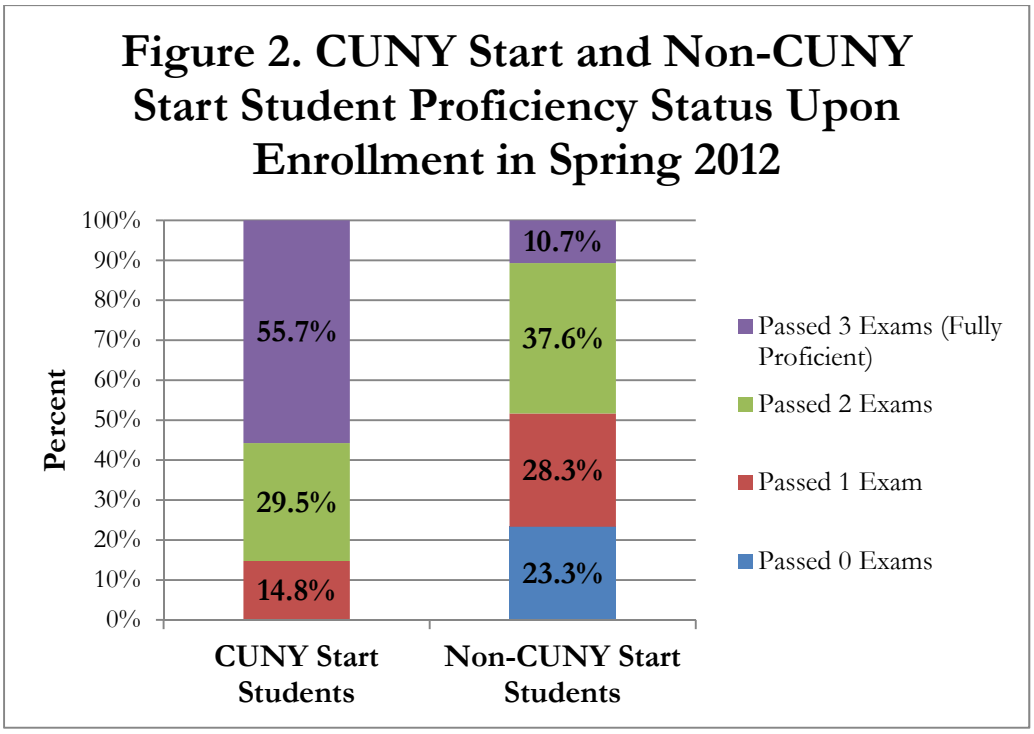
[4] The study goes as far back as the Fall 2011 cohort to be able to track the retention and other outcomes of students who completed CUNY Start and enrolled into Hostos for at least 2 years.
[5] Although there are only 3 CUNY Assessments Tests (Reading, Writing, and Math) the Math test consists of 4 parts (pre-algebra, algebra, college algebra, and trigonometry); students must pass the first 2 parts of the math test to be deemed proficient in mathematics.
[6] The final passing status includes the passing status of a small number of the Fall 2011 CUNY Start students (15) who re-enrolled in the CUNY Start in Spring 2012 and retested at the end of the term.



Comparisons to Non-CUNY Start Students

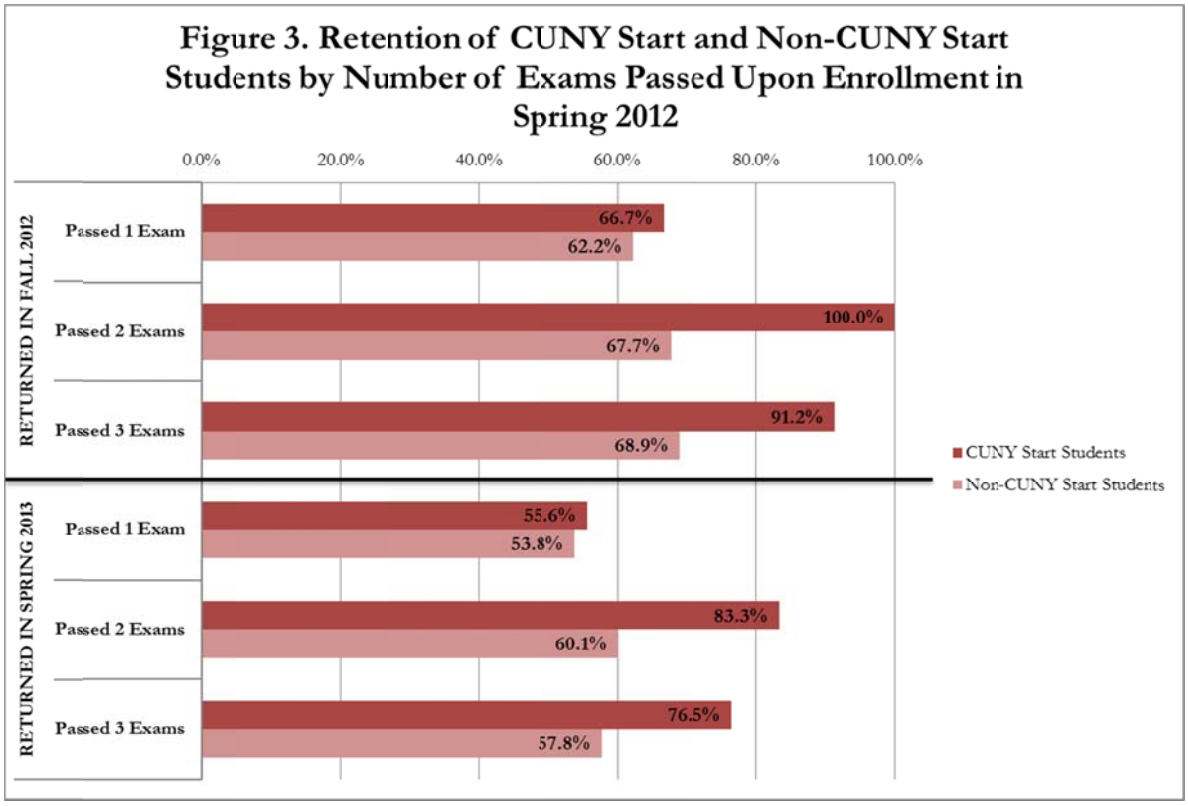
The most interesting findings of the CUNY Start cohort analysis were seen in comparing the CUNY Start students to their non-CUNY Start counterparts. The comparative analysis looked at the 61 students who enrolled at Hostos in Spring 2012 and compared this group to the other first-time freshmen who enrolled at Hostos in Spring 2012 but who had not participated in CUNY Start.

Figure 2, below, shows the enrollment of the CUNY Start students and of the first-time freshman, based on how many exams the students passed prior to enrolling (i.e. passed 1 exam, 2 exams, or 3 exams [fully proficient] upon enrollment). The results show that a much higher percent of CUNY Start students entered being fully proficient (55.7%) as opposed to the non-CUNY Start enrollees (10.7%).



Note that none of the CUNY Start students who enrolled in Spring 2012 entered having passed no exams, whereas **23.3%** of the non-CUNY Start students entered having passed 0 exams.

Further retention analyses of CUNY Start students and first-time freshmen, broken out by the number of exams passed upon enrollment, reinforced the finding that CUNY Start students had higher retention rates than their first-time freshman counterparts. Figure 3, below, shows that the CUNY Start student cohort retention was consistently higher than that of the non-CUNY Start first-time freshmen regardless of the number of exams students passed upon enrollment.



The reason for these findings could be related to the college preparation component that students in the CUNY Start program receive, which first-time freshmen entering Hostos directly may not receive.

These data suggest that the CUNY Start program is effective in preparing students for college success. A larger percentage of CUNY Start students entered Hostos fully proficient and ready to take college-level courses. The results showed that the CUNY Start students had stronger academic performance and higher retention rates than the non-CUNY Start students. Even among the students entering fully proficient, the CUNY Start students had higher retention rates than the non-CUNY Start students.

External Partnerships and Collaborations

CUNY Start works closely with a number of offices and programs both within and without the college in order to help students transition smoothly into college once they complete the program.

On Campus Partners

- The CUNY Start program collaborates with the Admissions office for recruitment, readmission, and other admission-related issues.
- CUNY Start works with the Financial Aid office to support our students as they apply and reapply for financial aid and to be oriented to issues and policies in financial aid.

- Students use the Single Stop office to get emergency transportation, food, and other important vouchers in order to maintain their attendance in the program while addressing their personal needs.

- CUNY Start students who self-identify as learning disabled or challenged get support from the Accessibility Office staff and advisors at Hostos Community College who enable them to access various services and receive class or testing accommodations as appropriate.

- CUNY Start works with the Registrar to help students with a prior transcript (one semester or less than 12 credits) at Hostos who need to stop out of college to complete CUNY Start for their remediation needs. Registrar helps students readmit to college without paying a readmission fee.

- The program gets support from the Office of Academic Affairs (OAA) and other academic departments. College faculty participate in the CUNY Start Career Exploration Seminar CUNY Start attend at the beginning of each semester and make presentations to students on their programs and curricula. OAA works closely with the program to help with the smooth transition of the CUNY start students into college. For example, the office of Academic Affairs has been the Liaison with other academic departments and offices to collaborate with the program to offer CUNY Start courses to students who had stopped out the college and need to pass one or more remedial classes.

- The college's Success Coach Unit refers students to the program during college registration. The Success Coaches also collaborate with CUNY Start advisors to advise students and help them register in the proper academic programs once they complete the program.

- Referral Offices: CUNY Start gets referrals from various special programs in the college including the College Discovery (CD), the Accelerated Study in Associate Program (ASAP), College Now, the Hostos' GED programs and the Young Men's Initiative Impact program (YMI). (CD and ASAP refer out students who are not eligible for their programs or do not meet their entrance criteria).

External Partners

In addition to the numerous on campus collaborations in which the CUNY Start program engages, the program also works closely with several external partners, including:

- Harlem Children's Zone: CUNY Start works closely with the HCZ guidance counselors who refer students who have been admitted to CUNY, but have failed two or more of their CUNY entrance tests.

- 1199 Union: CUNY Start works closely with the 1199 Hostos-housed program to accept and advise potential 1199 members who are in need of additional remedial support on their journey to pursuing higher education within the CUNY system.

- College and Community Fellowship: CCF guidance counselors have also worked closely with the Hostos CUNY Start program to refer formerly incarcerated members attempting to return to college. Many have done well in college and have been used as motivational speakers at workshops and other orientations for new students.

- Manhattan Educational Opportunity Center's College Connections Project: CUNY Start has also established an ongoing relationship with this project to accept students who have gone through their college-readiness programs and have successfully completed their application to CUNY.

Customer Analysis

Many of the students that participate in the CUNY Start program at Hostos Community College reside in the same neighborhood as the college. Thus, the demographic make-up of program participants tends to mirror the demographic make-up of the neighborhood and the college.

Table 1, below, provides a demographic breakdown of students' gender, race, age, and enrollment status since the CUNY Start program was first piloted at Hostos Community College in Fall 2010.

Table 1. Demographic Breakdown of CUNY Start Students Served between Fall 2010 and Spring 2013

	AY2010 - 2011	*AY2011 - 2012*	*AY2012 – 2013*
Total Enrollment	**116**	**238**	**329**
Enrollment Status			
Full-time	0.0%	35.3%	46.5%
Part-time	100.0%	64.7%	53.5%
Gender			
Female	67.2%	57.6%	62.0%
Male	32.8%	42.4%	38.0%
Race			
Asian	3.4%	2.1%	0.9%
Black	38.8%	38.7%	36.8%
Hispanic	54.3%	57.1%	60.8%
White	2.6%	2.1%	1.5%
Age Group			
20 and under	26.7%	47.9%	45.9%
21 to 25	31.9%	31.9%	28.6%
26 and older	41.4%	20.2%	25.5%

Between Fall 2010 and Spring 2013 CUNY Start served a total of 683 students, with the number increasing every year since 2010-2011. The data show that from the program's inception there have always been more students enrolled in the part-time program than in the full-time option; however, over the past 3 years the number of full-time students has increased substantially. As mentioned previously, the gender and racial breakdown of the CUNY Start students closely

mirrors that of the college community, with a majority of participants being female and of Hispanic descent. Interestingly, the number of participants age 20 and under jumped from only 26.7% in AY2010-2011 to over 45% in AY2011-2012 and AY2012-2013; this could be related to the fact that there was only the part-time program option in AY2010-2011 and younger students may have more flexibility with regards to enrolling in the full-time option (i.e. younger students may have fewer work/family responsibilities that might limit their ability to enroll in the program full-time).

Personnel, Facilities, and Resources

The CUNY Start program at Hostos is funded by the City University of New York with tax-levy funds. The funding supports salaries for all instructional and administrative staff, as well as books and materials for CUNY Start students.

The CUNY Start staffing structure is well developed and includes a cadre of well-trained staff, teachers and aides. The program is managed by the CUNY Start director, a Program Coordinator, and an experienced full-time administrative assistant. The program also has several instructional and support staff roles, including (for more information about specific staff roles, please see *Appendix F*):

- 5 Core instructors (continuing education lines) deliver instruction in reading, writing or math.
- 1 Master/Lead teacher (Continuing education line) teaches Reading/Writing and coaches 2 to 3 teachers-in-training each semester and attends professional development meetings as needed.
- 3 full time (HEO Assistants) Academic Advisors: Teach College knowledge seminar, help with recruitment and new students' orientation, provide one on one and group advisement sessions, meet with the teachers assigned to their cohorts on a weekly basis and with the coordinator.
- 2 Reading writing Assistants (part time college assistants): assist core reading/writing teachers in and outside class.
- 1 Support Reading/Writing Instructor (continuing education teacher line): assists two instructors and acts as a substitute teacher within and outside Hostos for CUNY START.
- 2 part time Math tutors (college assistants: assist Math instructors within and outside class.
- 1 Cooperating Advisor in training (continuing education line): in charge of a 50 student cohort- same as full time academic advisors (above). In addition, Coop observes senior advisors and gets additional professional development support from the campus and by the Central Office CUNY Start team.

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

Based on a review of the internal operations and current outcomes of the CUNY Start Program (as discussed above) several strengths, weaknesses, opportunities, and threats of the program emerged.

Strengths

One of the primary strengths of CUNY Start is the solid pedagogy and curriculum*. The pedagogy and curriculum is developed by the CUNY Start Central Office and utilizes an evidence-based remediation model. In addition to all CUNY Start instructors already being highly experienced, they also receive training in how to effectively deliver the curriculum by CUNY Central. This encourages a standardized framework for instructional delivery that is able to be appropriately assessed and improved upon (if necessary) (see appendices C, D and E). It is this solid pedagogy and strong curriculum that has led participants in the CUNY Start program to yield better pass rates on the CUNY Assessment Tests than their non-CUNY Start counterparts (see "Outcomes Assessment" section.)

Another strength of the CUNY Start program is the stable staffing structure. Many of the CUNY Start instructors have been working for the program for many years. This can be attributed to the fact that instructors in the program are well supported within the program and from CUNY Central. Instructors receive sufficient and adequate training and professional development from CUNY Central and receive adequate supervision, guidance, and professional development from the CUNY Start program at Hostos. For example, instructors often participate in professional development conferences developed and administered by CUNY Central. Additionally, the program instructors at Hostos meet continuously with the director and CUNY Start advisors to troubleshoot potential challenges and develop strategies to lead to improved outcomes. This, in turn, leads instructors to feel supported and active in their own professional development.

One of the unique aspects of the CUNY Start program is also one of its strengths; the program incorporates advisement into its comprehensive remediation instruction model. This takes place via an academic advisement seminar in which all instructors and CUNY Start advisors meet weekly to discuss student progress, curricular developments, and troubleshoot student challenges. This team approach to student support allows the program to engage in early interventions for students at risk of not being successful.

Weaknesses/Threats

One of the biggest weaknesses of the program is that too much administrative time is spent engaging in activities related to recruiting students to participate in the program. CUNY Central holds each CUNY Start program accountable for enrolling a certain number of students into their program each year. Although the program has developed great partnerships within the college, there is no solid system for automatically referring students to the program and triple and double remedial students who may benefit from the program may or may not be aware of the program. As a result, CUNY Start administrative staff (non-instructional staff) spends approximately 50% of their time conducting recruitment throughout the year. For the program, this has meant that time and focus are often shifted away from other important staff functions (e.g. the development of new initiatives, advisement, program assessment, etc.) that could lead to improved outcomes for CUNY Start students.

Opportunities

To lessen the burden of recruitment, the CUNY Start program has identified a potential opportunity to develop partnerships with local GED programs. The hope is that by doing so the

program might be able to identify students who are interested in enrolling in college but may still need to develop certain academic skills prior to enrollment. Thus, CUNY Start could become an academic preparatory hub for students looking to enroll in college from GED programs and position the program as a pre-college program that is central to helping underprepared students achieve academic success in college.

Future Directions and Recommendations

Based on CUNY Start's SWOT analysis, one recommendation to improve upon the success of the program is to convene a multi-divisional board consisting of various key college stakeholders. The purpose of the board would be engage college stakeholders into the success of the program and position the program as a key component for the success of college students who require remediation. The board would most likely consist of stakeholders from the division of Continuing Education and Workforce Development, the Division of Academic Affairs, the Division of Administration and Finance, the Division of Institutional Advancement and the Division of Student Development and Enrollment Management; the primary function of the board would be to discuss potential internal policy changes to that could improve outcomes for not only students in CUNY Start but also students in other remediation courses/programs within the college.

Another recommendation is to work collaboratively with the college divisions of Student Development and Enrollment Management and the Office of Academic Affairs to develop and implement a policy to place triple remedial students into CUNY Start before they officially matriculate into Hostos. As we saw from the analysis, students who enrolled in CUNY Start prior to enrolling in the college, later enrolled being more proficient than those who were not in CUNY Start and had higher rates of persistence. Since the analysis showed that a much higher percentage of CUNY Start students entered being fully proficient, this demonstrates that the CUNY Start program has the potential to help Hostos students overcome one of the primary barriers to college persistence and completion, proficiency in reading, writing, and mathematics.

Appendix A

Information about the CUNY Assessment Tests

WHAT ARE THE CUNY ASSESSMENT TESTS (CAT) IN READING, WRITING, AND MATHEMATICS?

Reading: The CAT in Reading is an un-timed, multiple-choice, computer-based test of reading.

Writing: The CAT in Writing is a 90-minute written essay test in which students are asked to respond to a reading passage that they see for the first time when they sit for the test.

Mathematics: The CAT in Mathematics is an untimed, multiple-choice, computer-based test composed of four sections: numerical skills/pre-algebra, algebra, college algebra, and trigonometry.

WHAT SKILLS DO EACH OF THE TESTS MEASURE?

The CAT in Reading measures reading comprehension. You will be given several readings that may be practical or drawn from prose fiction, the humanities, social sciences, or natural sciences. Questions about the readings will ask you to refer to what is explicitly stated and to determine the meaning of words through context. They will also ask you to reason to determine implicit meanings, to draw conclusions, and to make comparisons and generalizations. The readings are like those commonly assigned in first-year courses in college. For each passage you will be asked a set of multiple-choice questions.

The CAT in Writing is a standardized writing test that measures your ability to do college-level writing in English and assess your readiness for introductory college courses. In the test, you are required to read, understand, and respond to a passage of 250-300 words. The CATW is designed to test your ability to think and write in English, similar to the way you will be asked to think and write throughout your college career. It consists of a reading passage (the text) and writing instructions. You must read the passage and instructions and then write an essay responding to the passage while following the instructions. You have 90 minutes to complete the exam. You may bring a non-electronic dictionary to the test (a paperback dictionary is recommended), bilingual if preferred.

A sample of the writing assignment (along with the scoring guide and sample papers for each score point) and some tips on taking the CAT in Writing is included in the Student Handbook <pdf> prepared by CUNY faculty. Read more >> <pdf>

The CAT in Mathematics is designed to measure students' knowledge of a number of topics in mathematics. The test is organized into four sections: numerical skills/pre-algebra, algebra, college algebra, and trigonometry. Numerical skills/pre-algebra questions range from basic math concepts and skills (integers, fractions, and decimals) to the knowledge and skills that are required in an entry-level algebra course (absolute values, percentages, and exponents). The algebra items are questions from elementary and intermediate algebra (equations, polynomials,

formula manipulations, and algebraic expressions). The college algebra section includes questions that measure skills required to perform operations with functions, exponents, matrices, and factorials. The trigonometry section addresses topics such as trigonometric functions and identities, right-triangle trigonometry, and graphs of trigonometric functions.

Placement into CUNY's required basic math courses is based on results of the numerical skills/pre-algebra and algebra sections. The test covers progressively advanced topics with placement into more advanced mathematics or mathematics-related courses based on results of the last two sections of the test.

Appendix B

CUNY Start Course Descriptions

CUNY provides college transition instruction in two content areas: math and reading/writing. The full-time CUNY Start program (25 hours per week) provides both Pre-College Math (140 hours) and Academic Reading/Writing (140 hours). The part-time program (12 hours per week) focuses on either Pre-College Math (130 hours) or Academic Reading/Writing (130 hours).

Pre-College Math

Pre-College Math focuses on more complex topics in algebra such as functions in new settings and the manipulation of expressions. Understanding is maximized through in-depth study of core math concepts in an interactive, supportive learning environment (see *Appendix C* for CUNY Start Math - Core Values and Teaching Practices).

Academic Reading/Writing

Through an interdisciplinary curriculum, students build key reading and writing skills and broaden their general background knowledge. Skill development includes argumentative and analytic writing, and college-level reading and study skills (see *Appendix D* for CUNY Start Reading and Writing - Core Values and Teaching Practices).

College Success Preparation

All CUNY Start students participate in weekly sessions to explore their academic identity and learn about college structures and campus resources. College advisement helps students align their career goals with educational requirements and prepares them for academic achievement and graduation (see *Appendix E* for CUNY Start Advisement - Core Values and Practices).

Appendix C

CUNY Start Math - Core Values and Teaching Practices

Across all content areas, the CUNY Start program believes that students must be active in the classroom in order to learn most effectively. Accordingly, CUNY Start math classes should emphasize "student talk" over "teacher talk", with practically no lecture-based instruction. Students should be given great responsibility for developing, testing, explaining, and assessing mathematical ideas and answers.

We believe that math is not limited to a set of procedures, but involves relationships between concepts, procedures, and conventions. As a result, CUNY Start instructors are asked not to present rules or procedures to students. Instead, teachers should stimulate student thinking through discovery-based activities and skillful questioning. That way, students can construct their own mathematical understanding. Our aim is for CUNY Start teachers to foster students' ability and willingness to think and communicate like scientists — to be inquisitive, investigate relationships and patterns, make conjectures and generalizations, test their ideas, draw conclusions, and think critically.

We tell students on the first day of class that our goal is for them to develop the "language and thinking of mathematicians". We prioritize discussing and understanding mathematical concepts in depth rather than merely memorizing and applying algorithms and shortcuts mechanically. In CUNY Start math classes, we do not focus primarily on whether students' answers to math problems are right; in fact, their explanations and ideas are valued more highly. We believe that students build confidence and understanding best when they are asked to explain their thinking and assess ideas themselves.

In order for instructors to apply these ideas and values about teaching and learning, the following teaching practices are central to CUNY Start's approach to math:

Student-Centered Instruction

- Asking students to explore, explain, and discuss ideas among themselves, instead of explaining ideas or demonstrating procedures ourselves (as in a traditional lecture).

- Giving students the responsibility for assessing and correcting each other's math ideas, answers, and language by not giving away whether students are right or wrong through facial expressions, tone of voice, hesitating, or not writing students' responses on the board.

- Allowing students time to struggle with math problems and ideas on their own without the teacher "helping" too much or too soon.

- Letting students think and speak for themselves and listen and respond to each other, without rephrasing or even repeating what they say, explaining what they did, providing reasons or steps for them, or reframing their ideas.

- Valuing and encouraging different methods of solving problems that students use.

Questioning

- Asking meaningful questions and posing well-conceived examples in order to stimulate student thinking and discussion.

- Relying almost exclusively on questions (making as few statements as possible) throughout math classes.

- Asking questions that are as open-ended as possible (so that ideas and problems are not framed much for students and they have to think and explore ideas themselves), but as specific as necessary (so that it is clear what is being asked).

- Varying the questions that we ask, both in general to keep students listening and thinking and specifically when one line of questioning proves fruitless.

- Posing more accessible examples when students are truly stuck or confused so that they can make connections between what they already understand and more challenging concepts or problems without the teacher providing explanations or leading questions.

- Directing most questions — especially about a specific student idea or answer — to individual students (not to the class as a whole) for more useful assessment of what they really know and understand.

Developing Real Understanding

- Asking about concepts, pushing students to justify their ideas, and not letting them merely recite answers, procedures, and vocabulary involved in a problem.

- Pushing students to be clear and accurate with their language while leaving room for them to talk about math ideas informally.

- Intentionally bringing out common misunderstandings and errors without indicating that they are wrong so that students examine them, really think about them, and develop clearer comprehension.

Other Practices

- Getting every student in a class to participate and explain her/his ideas — asking questions of all students, not letting either the most vocal students dominate discussion or the least outgoing students avoid talking, while also helping students feel safe and comfortable taking chances and making mistakes.

- Helping students to feel safe and comfortable taking chances and making mistakes, and to know that they do not need to master an idea as soon as they first see it.

- Encouraging student note-taking, requiring use and organization of math binders, and helping students learn to refer to their binders/notes.

Appendix D

CUNY Start Reading and Writing - Core Values and Teaching Practices

CUNY Start teachers create the conditions for students to learn and write better through "cognitive apprenticeships" in which teachers make reading and writing processes visible. As teachers model these processes, they help students develop a metacognitive vocabulary to name what they do.

Although teachers play an active role in modeling thought processes and selecting sub-tasks which students can accomplish, the CUNY Start program also believes that students must be active in the classroom in order to learn most effectively. Accordingly, cognitive apprenticeship emphasizes "student talk" over "teacher talk," providing numerous opportunities for students to practice, refine, and articulate their skills.

Learning to read and write better are ongoing efforts without endpoints. As a result, student progress and achievement will not be linear, and teachers will be less concerned with students reaching a "correct" interpretation of a text or writing a perfect essay than with teaching process and building students' confidence and willingness to struggle. As students become aware of and begin to incorporate the processes of expert readers and writers, their own practices and outcomes become more proficient over time.

Elements of apprenticeship that are core to the curriculum and classroom practices:

Modeling
In a cognitive apprenticeship, students learn not by teachers (expert readers and writers) simply sharing an interpretation ("this is what the story is about"), but by students observing the strategies and processes that teachers use to arrive at those interpretations.

- Teachers model reading and writing strategies by ***thinking aloud*** about the thought processes that underlie "expert" reading and writing.

- Modeling allows students to see how texts are constructed by writers and understood by readers.

- Modeling helps students to learn and better anchor the language and moves used by "experts" (i.e., terms such as "evidence", "interpretation", "authors point of view", as well as conventional ways in which arguments are developed and presented). The language and moves are taught in context, while the teacher models how to interpret texts or construct written arguments.

Scaffolding
Scaffolding is the support that teachers provide to enable students to do a sub-task, even as they can see that task's relation to the whole. As student apprentices grow in ability, they are able to take on increasingly difficult and sophisticated tasks.

- Scaffolding helps move expertise away from the sole provenance of the teacher by providing the student with "smart tools" that allow students some independence as they move towards greater mastery. For example, essay templates let students see a whole essay, while enabling them to practice (and gain confidence with) one small task, such as writing a personal example.

- Discussion procedures and question starters help students internalize the ways that master readers talk about academic texts.

- Pacing is another important aspect of scaffolding. CUNY Start teachers gauge what students are ready for, and provide multiple opportunities and contexts for students to engage in core activities.

- Repetition allows instructors to demand greater sophistication from students over time.

Fading

The expert slowly removes support, handing over more and more responsibility to the apprentice over time. Time to practice and make mistakes is critical for apprentices to take ownership over the process.

- CUNY Start classes provide significant in-class time for reading, writing, and processing information so that all students have the opportunity to participate and practice.

- Teachers create an environment in which students take ownership of their own learning by supporting plentiful opportunities for student talk and peer to peer learning.

- Teachers introduce students to and help them to internalize a metacognitive vocabulary related to reading and writing processes. Students become more aware of whether and how they use those processes, and as they increase control and flexibility, they gradually assume more responsibility for their own learning.

Coaching

- When coaching, the teacher uses a combination of suggestions, questions and examples to redirect students back to a reading, an essay in progress or a discussion with their peers for the purpose of gaining deeper understanding. Teachers provide extensive oral and written feedback to support and guide students through class activities.

- Coaching strategies are individualized and are based on deep knowledge of each student's strengths and challenges.

Classroom Culture and Community

To successfully participate in a cognitive apprenticeship, students must take the risk to expose their own thought processes and mistakes. This is very difficult, especially for students who have had negative school experiences. Therefore, CUNY Start teachers should:

Appendix E

CUNY Start Advisement - Core Values and Practices

CUNY Start advisors work with students both individually and in a weekly seminar, assisting them in reaching academic and personal goals. In both contexts, CUNY Start advisors employ the discovery-based approach used throughout CUNY Start. Their content is "college knowledge" and personal decision-making, and their goals overlap with those of CUNY Start academics – to improve student's communication, critical-thinking and problem-solving skills. Rather than being prescriptive, advisors engage students in a self-reflective process that helps them to assess their physical and social context, individual strengths and challenges that may prevent them from realizing academic and other aspirations. Once students gain fuller self-awareness, advisors teach a problem-solving process, scaffolding the steps, as is done in academic classes. Students learn to assess their problem-solving strategies, and revise them as needed.

Following are the core practices CUNY Start advisors use to help students improve self-awareness, communication, problem-solving and self-advocacy skills.

Individual Advisement

- Helping students increase self-awareness, by asking questions about student's choices and results of actions taken.

- Using non-judgmental, non-punitive language, such as asking questions about progress made toward goals, as opposed to imparting advice or discussing what students "should" do.

- Asking questions to guide students to eliminate or mitigate obstacles to learning or goal achievement.

- Guiding students to use referrals and advocate for themselves, through a step-by-step process of understanding resources, making and preparing for appointments, and follow-up.

- De-scaffolding support provided to students, by gradually releasing intensity of guidance and encouraging students to take increasing responsibility for their own learning and development, based on each student's readiness.

- Demonstrating empathy, such as listening to student's challenges before engaging in problem-solving with them.

- Maintaining clear boundaries and holding students to high standards, by communicating student's fulfillment of program expectations through individual meetings, team meetings and written communication.

- Regularly acknowledging and congratulating students on achievements, regardless on the size of accomplishments.
- Using a “from the cradle to the grave” approach with students, from the point of initial contact during recruitment to departure, assisting students with next steps regardless of whether they complete, withdraw or are dismissed from the program; even dismissal presents an opportunity to improve self-awareness and problem-solving skills and is done without judgment.

Seminar

- Incorporating academic skills into every lesson, including tests, written assignments and mathematical computations.

- Providing opportunities for practice, such as applying for Financial Aid or selecting courses using the college catalogue.

- Providing opportunities for students to speak as experts, such as presenting information about their college major, the culmination of an extensive research project.

- Engaging in in-depth examination of college topics, such as a two-month research project into college majors and related careers, emphasizing academic skills such as research methods as well as “college knowledge.”

- Introducing college norms and expectations, such as policies outlined in college syllabi.

- Using questions to help students think critically about information presented.

- Expanding students’ vocabulary necessary to understand and utilize college systems.

- Emphasizing process, such as asking students to explain how they arrived at their conclusions.

- Circulating to work with individuals and groups, providing individual support.

- Scaffolding complex activities, by breaking them into a series of smaller activities.

Appendix F

Staff roles

Administrative Staff

- Director (HEO): devotes 50% of appointment:
    - oversees budget, program policies, curriculum guidelines, space and facilities, articulation agreements with the college.
    - Advocates to different campus and outside offices on behalf of the program.
    - Hires and supervises full time and part time staff and handles hiring and appointment processes.
    - Meets weekly with the program coordinator and office coordinator
    - Develops and designs proposals, programs, reports to support the program stability and growth.
    - Handles other issues or concerns beyond the scope of the program Coordinator.

- Program Coordinator (full-time HEO assistant):
    - oversees the day to day operation of the program
    - holds weekly meetings with the advisement team
    - oversees recruitment
    - manages and supervises student transition to college
    - supervises and supports instructional staff
    - Coordinates and communicates with campus and central office staff and offices.

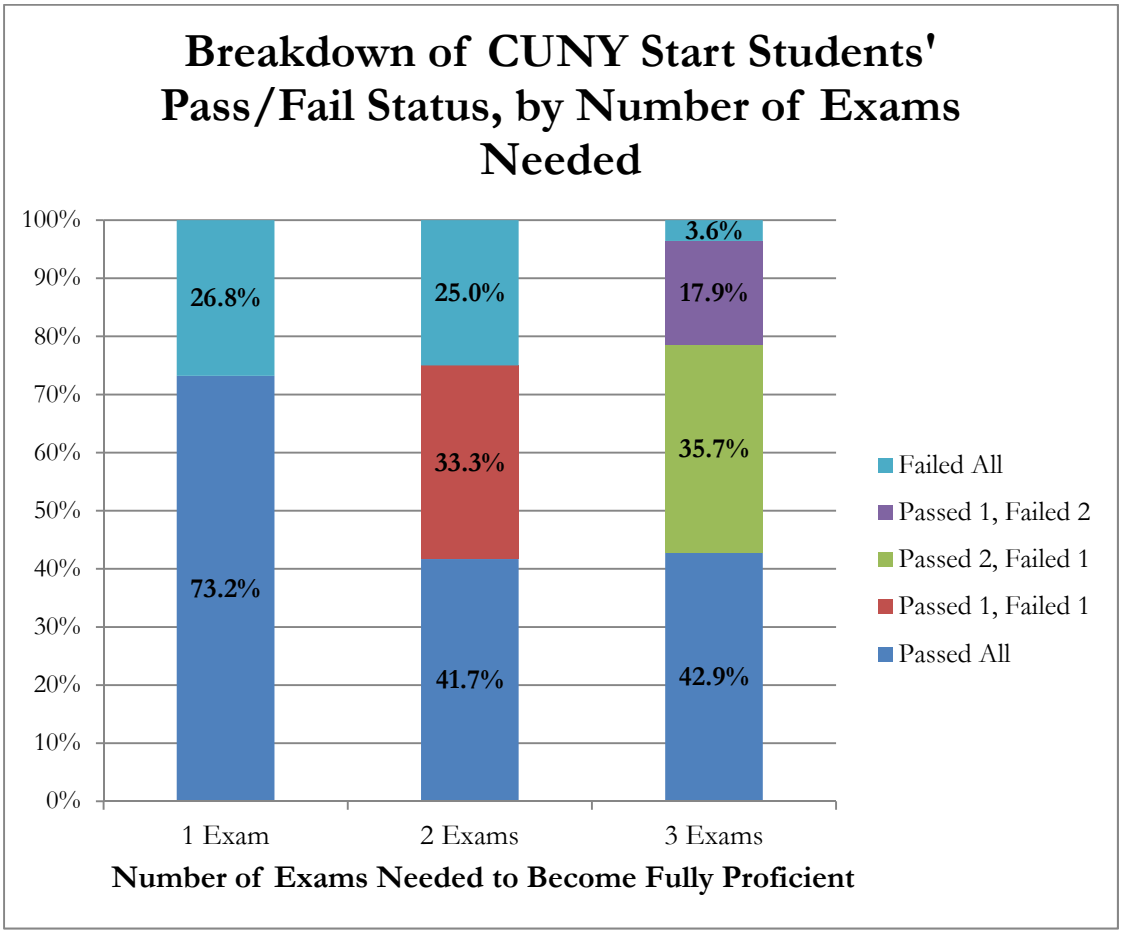
- 1 Office Coordinator (full-time Assistant to HEO line):
    - handles office day to day operation;
    - supervises office aides;
    - manages all paperwork including timesheets, room assignments, supplies;
    - Inputs data and reports to Central office as needed
    - Manages new student recruitment and registration paperwork and processes
    - Produces flyers, brochures and other publications
    - Supports the program coordinator with various tasks.
    - Attends leadership team meetings.

Appendix G

Supplemental Tables and Graphs from CUNY Start Cohort Analysis

Testing Results (CUNY Start Students Only)

The graph, below, shows the percentage of students who passed their needed exams, by the number of exams needed. As the results show, almost three-fourths of the students needing only one examination passed it. For students needing to pass all three exams (i.e., triple remedial students), 42.9 percent passed all three and 35.7 percent passed two of the three. These results mean that over 75 percent of the triple remedial students were either fully proficient or only had one skill area in which to demonstrate proficiency.



Enrollment and Retention (CUNY Start Students Only)

The study showed that, in total, 82 students (70.1%) in the Fall 2011 cohort of CUNY Start students enrolled at Hostos Community College. The table, below, provides a breakdown of first-time enrollment and the retention of enrolled students, by term.

Retention Rates of CUNY Start Students at Hostos, by Term of Entry					
First Semester Enrolled	**First-Time Enrollees**	**Returned in Fall 2012**		**Returned in Spring 2013**	
	Number	*Number*	*Percent*	*Number*	*Percent*
Spring 2012	61	*55*	***90.2%***	*46*	***75.4%***
Fall 2012	19	n/a	n/a	*18*	***94.7%***
Spring 2013	2	n/a	n/a	n/a	n/a

Comparative Analysis (CUNY Start and Non-CUNY Start Students)

The table, below, shows the academic performance and retention of CUNY Start students and first-time freshmen. The data illustrate that the CUNY Start students attempted more credits, earned more credits, and had higher G.P.A.s, on average, than the first-time freshmen who were *not* in CUNY Start over the three semesters. Additionally, the CUNY Start students had higher retention rates than the first-time freshmen. The table also shows the academic performance and retention of CUNY Start students and non-CUNY Start students in both groups who enrolled at Hostos being fully proficient. Although the academic performance for both subgroups was nearly identical, the CUNY Start students had a one-year retention rate that was almost 20 percentage points higher than their counterparts.

Enrollee Academic Performance and Retention through Spring 2013					
		CUNY Start Students (N=61)	*First-time Freshmen (N=420)*	*CUNY Start Students Who Entered Fully Proficient (n=34)*	*First-time Freshmen Who Entered Fully Proficient (n=45)*
Academic Performance	Average Number of Credits Attempted	23.8	18.4	27.3	26.5
	Average Number of Credits Earned	20.3	14.2	23.1	22.6
	Percent of Credits Earned	85.3%	77.2%	84.6%	85.3%
	Average G.P.A.	2.21	1.86	2.35	2.32
Retention	Returned in Fall 2012	90.2%	64.8%	91.2%	68.9%
	Returned in Spring 2013	75.4%	58.1%	76.5%	57.8%