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ABSTRACT

In fall 1994, New York City Technical College established the Developmental Education Task Force to review the current state of developmental education (DE) at the college and recommend policy and program changes. The Task Force gathered quantitative data from analyses of DE enrollment trends, student characteristics, and graduation rates, as well as a survey of 372 students in social science courses. In addition, qualitative data was collected from focus groups held with approximately 20 DE students and 20 faculty to determine perceptions of program placement and structure, student expectations, instruction, and faculty expectations. Based on the quantitative and qualitative data, recommendations for program improvement were developed in the following areas: (1) pre-college, including establishing senior college admission requirements over time to avoid admitting students not likely to succeed and designing DE orientation sessions; (2) testing, related to improving assessment instruments and placement; (3) students, including improving academic support provided to DE students and establishing required orientation courses; and (4) curriculum and instruction, focusing on strengthening the connection between reading and writing and linking DE courses with career areas. Appendixes include the task force appointment letter; the Task Force sub-committee reports and recommendations; results from the student survey; data on entrance testing results, percentage of credits and hours devoted to remedial and compensatory education, pass rates for DE courses, multiple repeaters, and class size; and summaries of focus groups. (TGI)

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ED 396 777

REPORT

OF THE

DEVELOPMENTAL EDUCATION

TASK FORCE

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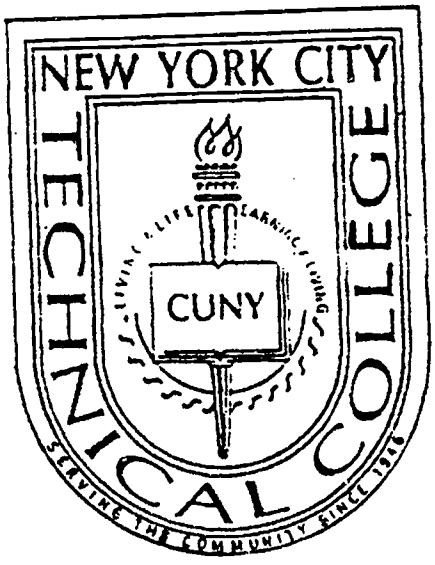

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DEVELOPMENTAL EDUCATION TASK FORCE

TABLE OF CONTENTS

APPENDICES

DEVELOPMENTAL EDUCATION TASK FORCE REPORT

MEMBERSHIP

Hernan Baranda	Construction Technology
Greg Donaldson	Developmental Reading
Lois Dreyer	Dental Hygiene
David Entin, Co-chair	Arts and Sciences
Michael Gage	Developmental Mathematics
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DEVELOPMENTAL EDUCATION TASK FORCE REPORT

I. BACKGROUND

In April, 1994 Provost Emilie Cozzi appointed the twenty-member Developmental Education Task Force to review the current state of developmental education at New York City Technical College and recommend policy and program changes for improvement. The Task Force included twelve faculty, four of whom represented developmental skills areas; three students; and three staff. Over the course of the year, five members left the Task Force due to retirement, resignation, etc. Arts and Sciences Dean David Entin and Associate Provost Bing Inocencio were asked to co-chair the Task Force. The charges to the Task Force included gathering and analyzing data on student remediation, studying various approaches to developmental education at City Tech and elsewhere, examining the current organizational structures, and developing recommendations for improvement. (See appointment letter in Appendix A.)

Major concerns that led to the formation of the Task Force included the large and growing percentage of students and college resources devoted to developmental education; the substantial number of students repeating the same developmental courses again and again; the relatively low pass rates for students taking the freshman skills assessment tests following completion of developmental education courses; and the high overall attrition rate at the College, especially of students starting at the lowest level of developmental education. In short, there was a need to identify means to speed the passage of underprepared students through remediation and increase the academic success of newly entering students, as well as examine current admissions policies that bring large numbers of severely underprepared students to City Tech.

The Task Force held its organizational meeting on May 23, 1994 and formed four sub-committees: Curriculum and Instruction, Students, Testing and Pre-College, chaired respectively by Professors Michelle Gage, Marge Poyatt, Lois Dreyer, and Regina Robin. The Task Force also hired an external consultant with expertise in the area, Dr. Katherine German of the Development Institute of Boston. (See Statement of Qualifications in Appendix B.) The Task Force met monthly during the Fall 1994 and Spring 1995 semesters with the sub-committees meeting in the interim, and occasionally more often, and reporting on their progress at the monthly Task Force meeting.

In the Fall 1994 Semester the Task Force and its sub-committees gathered information and data from a variety of sources. The Student Sub-Committee conducted focus groups of students currently in developmental education courses as well as those who had successfully completed developmental education. The Curriculum and Instruction Sub-Committee listened to focus groups of developmental education faculty as well as career, technical, and arts and sciences faculty teaching beginning level

college courses. In each instance the Task Force's consultant facilitated the focus groups, which provided considerable information about what worked and what was problematic, as well as both student and faculty suggestions for improvement. The Curriculum and Instruction committee also surveyed the academic departments providing developmental instruction, while the consultant and the Dean of Arts and Sciences (Task Force co-chair) interviewed the English and Developmental Studies chairs, the ESL coordinator, the Dean of Enrollment Management, the Director of Testing, and the Registrar. And finally, the Dean and consultant also developed an extensive data request for the newly employed Enrollment Analyst and completed the design of a student survey with extensive input from the Task Force.

During the Spring 1995 the Task Force as a whole examined the data collected, discussed the problems and various possible solutions, and developed and discussed recommendations for change and improvement. The Curriculum and Instruction Committee collected reports in the following areas: mathematics, writing, reading, ESL, and the Learning Center (see Appendix C). The Student Sub-Committee developed characteristics of the typical remedial student and the successful developmental student. An 18-question survey was administered to 372 students in randomly selected social science courses. The results were tabulated and analyzed by the Student Sub-Committee (see Appendix D). The Pre-College Sub-Committee explored the issue of admissions standards and alternatives for the least prepared students at the Educational Opportunity Center and through Continuing Education. The Testing Sub-Committee examined current and possible alternative placement tests and exit criteria. Each Sub-Committee Chair developed a list of recommendations which were reviewed and approved by the Task Force (See Appendix E). The Task Force devoted its last three meetings in April and May, 1995, to developing a vision for the future and discussing the best means for change and improvement. In concluding its year-long work, the Task Force prepared and adopted this report.

II. QUANTITATIVE DATA/EVIDENCE

A major job of the Task Force was to collect and examine data regarding developmental education at City Tech. Important pieces of information gathered included the size of the remedial population and the College resources devoted to developmental education, as well as the academic success of remediation efforts. All entering students who do not attain specified minimum scores on Freshmen Skills Assessment Tests in reading, writing, and mathematics, must be enrolled in developmental education courses. Approximately fifteen percent of the incoming class demonstrates satisfactory proficiency in all three test areas, although the results have

ranged from 11.9% to 20.5% the past five fall semesters. Over sixty percent of the entering students fail to attain the minimum score on the writing or mathematics tests. The percentage failing reading is slightly lower, around fifty percent on average (See Appendix F). For the past two semesters, course enrollment in developmental education and CESL, by area, was:

	Fall 1994	Spring 1995
mathematics	2,118	1,923
reading	1,192	993
writing	1,495	1,308
CESL	2,028	1,922
Total	6,883	6,146

Over the past decade, enrollments in developmental education, CESL and compensatory course work have represented between 22% and 24% of total credit hours offered at City Tech (see Appendix F). It should be noted that many developmental and CESL courses meet four or more hours per week. The Task Force concluded that developmental education and CESL consume approximately one-fifth of the total cost of academic instruction.

Students not attaining college level proficiency are further divided into lower and upper levels for purposes of placement in reading, mathematics, and writing courses, based on actual test scores. In addition, CESL includes three levels of reading and writing, and two levels of speech. Approximately one-quarter of the students in developmental and CESL courses are placed at the lowest level. These students perform below the high school level based on the assessment tests, with many writing, reading, or computing at the fourth, fifth, or sixth grade levels according to national norming standards. The lower level mathematics course, for example, DM055, teaches students arithmetic. Only in the higher level developmental mathematics course, DM065, do students start learning algebra, usually introduced in the eighth or ninth grade of high school. In the fall 1994 semester, 21% of the developmental students in mathematics (448 students) were enrolled in DM055, 33% (396 students) in the lower level reading course, 15% (222) lower level writing, and 37% (757) lowest level of CESL courses. There have been no major changes over the past decade in the percentage or number of students entering developmental courses, except for the significant growth of CESL enrollments. However, given the new mission of the College, the Task Force questioned whether City Tech should be offering academic courses for equated credit at such a low level.

The next area of quantitative research focused on the efficacy of developmental and CESL education. How effective are developmental and CESL courses in moving students up to entrance level college credit courses, and what is the likelihood of

students who enter either level graduating? The pass or "S" grade rate for the lowest level of remediation courses in mathematics, writing, and reading is consistently in the 50% to 60% range, suggesting that more than half of the students are making progress. The rates of satisfactories in lower level CESL, particularly reading and speech, are usually higher. However, it is in the upper level remediation where the CUNY assessment tests are currently required as exit criteria. Here the pass rate in reading is a respectable 55% to 60%, and even higher (70% to 80%) in CESL reading. However, in mathematics and writing, where the bulk of the developmental students are placed, the pass rate is quite low, consistently around 40%, and even lower for the highest level of CESL writing (31% - 32%) (See Appendix H). Current courses, therefore, do not appear particularly effective in helping most students complete their remediation, exit developmental education, and move into beginning level college credit courses, as measured by existing exit tests.

Since a majority of students do not pass out of developmental education in their first try, many repeat the same course a second and third time, while a significant number also leave the college. Considerable resources, both institutional and student, are devoted to repeated attempts to try to pass developmental mathematics or writing courses. A couple of years ago the College began to identify "multiple repeaters," or students who had failed two or more times, in order to begin to address this problem and enforce college policy. A special "Multiple Repeater Project" was established and operated the last three semesters to identify and place these students in special sections where they are provided only one more opportunity to succeed, and must sign an agreement indicating their commitment to and pledging attendance in their remaining developmental course. These special sections are generally smaller than other sections and involve tutorial support to ensure additional assistance in class and beyond. The pass rate has been significantly higher (54.3% of the 466 participating students) than usually experienced for multiple repeaters (See Appendix I). Forcing students to take the course seriously by not allowing additional opportunities and threatening dismissal for inadequate attendance have been key ingredients for the success of this project. An initial study of 154 multiple repeaters from the spring and fall 1994 semesters moving on to credit-level courses indicates that the writing students do as well as other English composition students. However, the rate of nonproductive grades (D and F) in MA175 and 180 exceeded fifty percent and another one third received a W or WU. These results raise serious questions about students with difficulties in lower level mathematics moving further in that subject, which is a foundation for the sciences and engineering.

This analysis leads to a major issue: the long-term academic success and persistence of students who begin college in developmental education. A secondary concern has been the difference between students who start in the lowest level of remediation and those who begin at the higher levels. Two sources of data are

available on these issues. The first, "A Longitudinal Examination of Student Achievement at New York City Technical College" by John Hudesman, James Lap, and Ron Leone, followed through 1989 day students admitted in the fall semesters of 1981, 1982, and 1983. This report demonstrates a clear and statistically significant relationship between initial passage of the CUNY assessment tests and later academic success. The Hudesman-Lapp-Leone study found the following graduation rates based on test passage or failure:

Graduation Rate	Tests Passed/Failed
43%	Passed all tests
47%	Passed writing and mathematics
35%	Passed reading and mathematics
32%	Passed only mathematics
29%	Passed reading and writing
23%	Passed only writing
19%	Passed only reading
12%	Failed all tests

Students placed in developmental courses clearly demonstrate a lower likelihood of graduating. However, there is also a hierarchy of tests, i.e., passage of mathematics, writing, and reading, in that order, enhance success rates. Test passage is similarly correlated with persistence as measured in number of semesters enrolled and credits accumulated, and with GPA. One can conclude from this study that students who enter unprepared in reading, writing, and mathematics, are statistically less likely to succeed academically at City Tech.

At the request of the Developmental Education Task Force, Dr. Eva Chan, who was hired as Enrollment Analyst in November of 1994, has begun examining more recent longitudinal data and discriminating among the levels of developmental education and CESL. She has followed students admitted for the first time in 1988 and 1990 through the Fall 1994. Her initial studies also confirm a negative relationship between inadequate academic preparation and graduation. These data examine the ability of assessment test scores and initial level of enrollment in developmental education to predict graduation, GPA, credits accumulated, persistence (number of semesters completed), and academic performance in beginning level college credit courses.

The graduation rates for students enrolled initially in the various levels of developmental education courses in mathematics, writing and reading or credit level mathematics and English for the 1988 and 1990 entering cohorts were as follows:

	Percentage Graduated Based on Initial Enrollment		
	Lower Level Developmental	Higher Level Developmental	College Credit Course
1988			
Mathematics	11.7%	21.0%	34.1%
Reading	11.0%	19.1%	35.8%
Writing (one developmental level only)	20.1%		33.9%
1990			
Mathematics	4.2%	10.7%	28.9%
Reading	4.9%	12.4%	24.8%
Writing	10.3%	12.2%	23.8%

The differences in graduation rates are statistically significant at the .05 level. These data show important differences between the lower and upper levels of developmental education and even larger differences between developmental students and those who start at the college credit level. Initial enrollment in higher level courses results in significantly higher rates of graduation. The graduation rate for students who begin in the lowest level of remediation is unacceptably low. The lower graduation percentages for the 1990 cohort illustrate the importance of two additional years available for the 1988 entrants to complete their degree requirements. Enrollment by level of developmental education in mathematics, reading and writing predicts GPA and credits accumulated. These enrollment data exclude several hundred students who entered but did not enroll in developmental, English, or mathematics courses, and are assumed to have experienced early attrition.

Scores on Freshmen Skills Assessment Tests are also good predictors of academic success, despite the sizeable number of students who do not enroll in the level of developmental education prescribed by the assessment test scores. In 1988 and 1990 one to two hundred students did not enroll in the proper reading and mathematics course and a larger number enrolled in higher level writing courses than indicated by scores on the Writing Assessment Test. This may explain why mathematics and reading scores predict graduation rates, while writing scores in both cohorts are not related to likelihood of graduation. This discrepancy also raises questions about the validity of the Writing Assessment Test, compared to reading and mathematics. Mathematics, reading and writing scores predict GPA. Mathematics and reading predict credits accumulated, but there is no meaningful relationship between writing scores and credits accumulated (See Appendix J).

This data set explored the relationship of enrollment in developmental courses and assessment test scores to duration, i.e., number of semesters enrolled. The higher the level of initial enrollment in mathematics or English (reading and writing) the greater the number of semesters completed. However the relationship between persistence and

test scores is mixed. A few students who score in the highest group (pass original assessment test) appear to leave earlier than the higher level developmental scorers, perhaps to transfer to other institutions. The data also made apparent what many people have expressed from anecdotal evidence, that CESL students as a whole display considerably more persistence than non-CESL students.

The Task Force wanted to know if enrollment in the various levels of developmental education or assessment test scores were related to performance in introductory college credit courses. Dr. Chan's data set examined student performance in four key introductory college courses for both the 1988 and 1990 cohorts: English Composition (EG101), Fundamentals of Mathematics (MA175), and the first levels of psychology and sociology (PS101 and SO101), dividing students into those who received grades A through C in MA175 and A and B for the other three courses, and those who received lower grades. Students who started college in the lowest levels of developmental education or scored at the lowest levels on the initial placement tests were less likely to receive the higher grades, while those scoring above developmental education levels were more like to outperform their peers academically in these courses. Mathematics enrollment and test scores proved to be the best predictor of grades in all courses except Sociology 101 in 1988. Writing and Reading enrollment was related to EG101 and PS101 academic performance, but not SO101. Writing and Reading test scores predicted performance in EG101 but not in PS101 or SO101 (except writing for the 1990 cohort), as might have been expected. Mathematics continues to be the best predictor of academic success in subsequent college level courses based on tests of statistical significance (See Appendix J).

The conclusion from these data is that students tested and placed in the lowest level of remediation experience a statistically significant decreased degree of success on all academic measures, while students passing the tests and scoring out of developmental education demonstrate the greatest success on all measures except persistence.

As an aside, this most recent available longitudinal data also provides information and insight into overall retention and persistence. The number of credits accumulated by the 2,089 students in the Fall, 1988 entering cohort as of Spring, 1995, six and a half years later, is as follows:

253 students (12%) = 0 credits
796 students (38%) = 1 to 20 credits
334 students (16%) = 21 to 40 credits
130 students (6%) = 41 to 59 credits
576 students (28%) = 60 credits; graduated

It is particularly interesting to note that in the Fall, 1994 semester, six years after entry, twelve of these original students are enrolled in developmental education courses,

including three in DM055, and another eight in CESL courses. Moreover, thirty of the 1988 students are enrolled in three beginning level credit courses, MA175, PS101, and SO101. These figures attest to a remarkable degree of persistence on the part of particular students despite the lack of academic preparation.

Another issue for data analysis was the relationship between class size and academic success. In focus groups and written surveys, faculty and students alike described smaller developmental education classes contributing to student academic success by allowing more individual attention. A preliminary look at grade distribution by class size over the past two semesters, however, does not appear to confirm this observation or perception, except in developmental writing (See Appendix K). The only very clear pattern over two semesters: students in developmental writing do noticeably better as class size decreases. Nationally the research literature on this topic is mixed as well, despite widespread perceptions of both students and teachers about the greater efficacy of smaller classes.

One other major source of data for the Task Force was a survey developed by the Task Force and administered to eight randomly selected day-time introductory social science courses in March, 1995 (See Appendix D). A total of 372 students responded to the written questionnaire. Eighty-three percent had been placed in developmental education courses. Three-quarters felt their placement was correct. In terms of hours employed, the results were:

30% not employed
30% employed 1 to 20 hours per week
40% employed twenty or more hours per week

One might conclude that approximately one-third of the daytime students are employed too many hours for full-time pursuit of academic work. By contrast, respondents also reported the following average number of hours studied per week outside of class in each developmental education course:

29% Under two hours per week
44% Two to four hours per week
27% Five or more hours per week

The average student thus spends two to four hours per week studying for a single developmental education class, a bare minimum by most standards. Nearly thirty percent are putting in less than two hours, which may be a major contributing factor for the relatively high failure rate. Only one-quarter of the students are putting in what most educators would consider sufficient study time. The various data and forms of quantitative evidence listed above helped to inform the Task Force of the status of City Tech's developmental education program and students and suggest ideas for change and improvement.

III. QUALITATIVE DATA/EVIDENCE

In addition to the analysis of the considerable body of quantitative data, the Task Force also collected a range of qualitative data from students and faculty who participated in focus groups and surveys. These data underscore and elaborate on the themes established through the quantitative analysis. (See Appendix L for the written summary reports on the student and faculty focus groups.)

Student Comments

Over twenty developmental students representing a variety of majors participated in two focus groups convened in the Learning Center by the Student Subcommittee on Tuesday, November 22, 1994. The sessions focused primarily on placement in the program, the structure of the program, critical instructional characteristics, and student expectations.

With regard to placement, students wanted more information on the developmental program as they entered the college expecting to begin their majors rather than invest considerable time in skill development. Additionally, while the need for the CUNY-WAT was understood, students also understood the need to develop skills for the majors, and sought help. However, they did find the 50 minute CUNY-WAT time limit unreasonable, seeking additional time to collect and develop their thoughts before writing.

Similarly, their comments on the program suggested that developmental studies should be promoted with more information available to the incoming students so that they can understand the opportunities at the institution and develop the tools for success. They also viewed the development of skills, particularly reading and writing, as critical to their overall success, while the value of math increased as they discussed the question. While they suggested that reading and writing instruction should be integrated within the program, they also suggested that what is taught, for example, small paragraphs in writing, may not be what is needed for success in the majors.

Students had a great deal to say about instruction, particularly class size, which was considered critical, as smaller classes provided a better opportunity for attention, understanding, and real learning. Additionally, they indicated that adult learners seek respect, understanding and support in the educational environment, while developmental students in general need more time -- they're slower, not incapable. As a rule, they found skill and drill, e.g., grammatical, repetitive and boring, and sought more challenge and stimulation. They suggested focusing instruction on the development of concepts and formats (models) and strategies while reinforcing the whole process of developing understanding. Underscoring the need for direct instruction with models, illustrations and examples, as well as feedback is essential. They wanted direction and explanation, as well as help, i.e., demonstrated concern.

Supplementing classroom instruction, the students found tutoring, within the class and beyond, essential, particularly in mathematics where they considered hands-on experience especially useful. Moreover, they indicated that they valued coaching and encouragement, as well as the use of interactive technology which supports student learning throughout the instructional process.

Overall, the ideal learning environment conceptualized by the students would provide instruction through small classes of 15 to 20 students with 2 tutors. Instruction within this environment would provide explanation and direct individual support for work in progress; it would capitalize on the prior learning and experience of the students in an arena of mutual respect. Supplemental instruction, perhaps integrated into the classroom experience, would use tutors and interactive technology. As a result, students would develop their understanding, their skills and their self-concept, and demonstrate their abilities. However, the quality of the instructor is critical; with a good teacher, students can learn a lot more. Ultimately, success breeds success, and student expectations increase.

Student comments on the survey conducted during the spring corroborated many of the perceptions of those participating in the focus groups earlier in the year. With over 35% of the respondents making comments, the students' greatest concern was the attitude of some faculty, specifically those who don't seem to care about their teaching. They want faculty who are supportive and invested in their work, "more attentive to meeting students' needs," who take the time to answer their questions, patiently.

Many other students made recommendations for the improvement of pedagogy. These comments reinforced the need for greater student participation in classes, more time on careful explanations of the material, and increased use of examples, hands-on applications, and independent projects. Some students requested assistance in forming study groups, while others requested more essay examinations, more review of and comment on homework, more effective lectures, and greater faculty accessibility and interaction both in the classroom and outside the classroom. Some made specific curricular suggestions including more writing and spelling, as well as combining mathematics courses and reading-writing courses, and extending the time frame for developmental mathematics to two semesters.

Some students requested smaller classes and a more equitable student-teacher ratio, while others suggested changing examination questions annually, and reinforcing appropriate classroom behavior. Several students suggested increased course availability in the evenings, on weekends, and in the summer, more class meetings per week, and the elimination of "big breaks" between classes. In a variety of ways, students called for improved academic standards with limited opportunities to repeat courses and increased attendance requirements; however, they also suggested more leniency in timeliness for evening working students.

A few students proposed an improved orientation for new students with workshops on study skills and clear statements of the expectations within their majors. And several students requested more tutors, expanded Learning Center and Library services, and more computers and laboratory equipment. Beyond the developmental program, additional comments addressed the inconsiderate behavior of some staff delivering administrative services, as well as the condition of the facility, the cafeteria, and the elevators.

Faculty Comments

Two Faculty Focus Groups involving approximately twenty developmental faculty met on October 26, 1994, followed by an equal number of college faculty representing a cross section of academic disciplines who met on Tuesday December 13, 1994. The sessions focused on student placement, program structure, instruction, and faculty expectations, as well as changes in students and student learning patterns, curricular and instructional requirements, and exemplary teaching-learning experiences.

On the whole, faculty felt that students are generally not acquainted with the requirements of college study, i.e., two hours of work for each class hour, and that although they demonstrate a strong desire to succeed, they have poor self-images and require support for academic and personal development. While some students work diligently; others have the ability, but lack motivation. They need information on college expectations and on financial aid limitations.

Like students, faculty indicated that homogeneity in terms of students' abilities increases student achievement when coupled with small classes and intensive programming suggesting the need for better sorting and the selection of a narrower range of student abilities by course. They also considered the transition from developmental studies to collegiate study difficult, requiring the development of self-reliance along the way.

With regard to curriculum and instructional requirements, faculty suggested that discipline requirements differ in terms of the structural requirements of the teaching-learning process with writing and reading preferring larger blocks of time scheduled less frequently and mathematics requiring smaller blocks of time repeated more frequently. Additional levels of developmental courses would allow for more homogeneity, and self-paced learning would allow for more flexibility. Moreover, disciplinary integration and shared readings would reinforce learning across the disciplines.

In order to emulate exemplary teaching-learning experiences, faculty described:

* small, intensive summer workshops for multiple repeaters with the instructor and two tutors which increased achievement with 16 of 24 students completing the CUNY-WAT and all gaining in confidence;

* small (15), class using enriched readings and providing intensive practice in writing in which successful students moved into Composition One after seven weeks and the balance passed by the end of the semester;

* small (15), intensive express course with tutorial assistance and computer support taught as part of a three-course load with the fourth course being release for a special project;

* instructional strategies which had students working interactively with students on the board to write, critique, and revise topic sentences, paragraphs, etc;

* special classes designed for legal studies to assist a small, homogeneous group of students with the development of reading, studying, and critical thinking skills in the content area;

* the learning disabled student who required special assistance and support within and beyond the classroom to complete the course and pass the CUNY-WAT;

* the tenacity developed through the family mathematics course where students must focus, persist, show resourcefulness and kindness, and use common sense; and

* elegant instructional protocols such as those which build on students' story-telling abilities using the urban myth as the focus, a lesson which requires considerable faculty planning and development prior to implementation.

The critical characteristics of success revealed through exemplary experiences included: small class size; the duration and intensity of the experience; the singular focus of the students and their faculty; the emphasis on production, practice and immediate feedback; the active engagement of the learners in the learning experience; the availability of qualified support, e.g., trained peer and/or professional tutors; and the interface of reading, writing, and speaking concepts and skills. Additionally, the experiences emphasized: the merger of content skills applied in the major through interdisciplinary interaction; collaborative learning opportunities; computer labs which require essential technical support and maintenance services; faculty dedication and commitment coupled with a strong sense of humor, patience, and consistently high

expectations; speech as integral to the skill development program; special assessment to optimize the placement of ESL students; and faculty planning time, places to meet and work with students, professional development opportunities, and recognition. In short many developmental faculty suggested that we find innovative and alternative strategies for success.

Faculty teaching introductory college credit courses were also concerned with the placement process, suggesting that the student's environment must be considered during placement and program development, and that enculturation into the academic environment must be encouraged through discipline and preparation, etc. However, the college faculty expressed significantly more concern for the issues in teaching ESL students, indicating that ESL students often perform well on the assessment, but can't actually read with sufficient proficiency to keep abreast of academic assignments. Thus, while they may be talented in their major, they may lack the ability to communicate and read in English.

Faculty also suggested a review between CUNY math proficiency testing and entry into the academic program in order for students to stay current, and strongly suggested that students need a development program before retesting. They recommended that, because the CUNY/WAT has prompted the development of the writing formula, it could be replaced with a variety of writing assignments, but should not be abandoned. The faculty also suggested that consideration be given to the development of a computerized test generator.

On the question of program admission, the faculty indicated that the ambiguity of admissions standards is corrupting the image and self-concept of the institution and requires the development of standards. They recommended that students complete their developmental studies before entering the major. Over the years, they have seen that developmental students who begin with DM 055 have little chance of survival in engineering technology and require both remediation and counseling; students who begin with advanced algebra, MA175 or 275, have a much better chance of succeeding. In fact, the development of programmatic prerequisites has had a dramatic effect on the success of students entering specific programs, e.g., dental hygiene. Finally, the faculty suggested that students are programmed into inappropriate classes, presenting a major problem; they should consult their departments. Perhaps alternatives should be pursued for the delivery of preparatory studies provided either by the college, e.g., continuing education, or by an outside agency, e.g., the Educational Opportunity Center, et. al.

With regard to the developmental program, the college faculty suggested that repetition is not working -- we need to vary the approach. They suggested that remedial and developmental courses need to dovetail and advance simultaneously to integrate academic substance with remedial "nuts and bolts" and ensure skill transfer.
They also suggested that:

Communication, speaking (oral presentation), listening, writing and reasoning skills should be emphasized, particularly in relevant fields.

DS013 requires review in order to prepare ESL students for health related programs or another level of preparation is required.

A science preparatory course is required for students who completed high school without a lab science.

Students entering technical programs, in particular, must be able to read, measure, analyze a problem, and draw conclusions using extrapolation and causal reasoning.

Technical language should be incorporated into the developmental program because the ability to read technical and scientific material is crucial.

The college orientation course should be useful in helping students develop their self-esteem and intellectual curiosity.

Reading and writing should be integrated and refocused from the CUNY tests to academic performance.

Students need to develop their study skills and understand that preparation is critical to their success in the major.

AA101 should be taken by all students and taught by faculty in order to reinforce role models and academic expectations.

With regard to instruction, the college faculty suggested that writing across the curriculum should be revitalized. Viewing innovation as idiosyncratic to the instructor, they suggested that a mechanism is needed to assist faculty in sharing and adopting innovations, particularly teaching strategies for diverse populations. Finally, they suggested that instructional strategies need to capitalize on the thinking skills of ESL students and facilitate the development of language skills; however, instructional strategies need to facilitate the development of both thinking and language skills for native speakers.

Overall, the college faculty observed that the further students progress, the more obvious the gap between those who are prepared and those who are underprepared. In fact, some acknowledged that remediation is "paying the bills" and perhaps

compromising the image of the institution, suggesting that students with little chance of success should be counseled. Additionally, ESL was a much more prominent theme in this conversation, and the need to support the development of student self-esteem remained a strong concern. Several faculty observed that they have become so departmentalized that they've lost touch with the students, their colleagues, and their support system. Moreover, it was acknowledged that students are worked hard by those who work hard, and that we all need to work together to develop the expectations and provide the support and encouragement required to produce. Finally, the faculty were clearly focused on each of the four successive issues to be addressed through the educational process: first, promote student success at the point of entry; second, prepare for placement; third, prepare for college level study; and fourth, prepare for careers.

IV. EMERGING ISSUES AND CONCERNS

The following list of issues emerged from the student and faculty focus groups, the analytical data, and the discussions of the Task Force:

Pre-College need for:

- Marketing program and promotional materials
- Admissions policies and admissions counseling
- Referrals to appropriate programs within the community
- Improved registration and advising
- Effective interface with high schools, GED, etc.
- Increased financial aid

Assessment need for:

- Effective assessment and placement process
- Appropriate instruments for placement and completion
- Alternative assessment strategies or instruments
- Dissociation from the curricular and instructional constraints of CUNY Skills Assessment Tests, especially Writing Assessment Test

Curricular and instructional need for:

Curriculum:
- Supportive organizational structure
- Increased contact and credit hours
- Integration of reading and writing
- Interface with collegiate courses
- Multiple levels of skill development
- Emphasis on proficiency
- Programmatic cohesion

Instruction:
- Use of active learning strategies
- Increased instructional intensity and duration
- Planning time and professional development
- Recognition

Support Services:
- Transitional support to college courses
- Administrative support for the program and faculty

Students need for:

- Interventions for multiple repeaters
- Clarification and enforcement of attendance policies
- Integration of AA101 with the developmental program
- Heterogeneity of abilities within classes
- Need for challenge and support
- Need for motivation and increased self-esteem

These issues and concerns were reinforced and corroborated by a review of the literature examining the characteristics of successful developmental programs. According to the results of the National Study of Developmental Education reported last year, those programs which have proven most successful are effectively organized, require assessment and placement, and provide an integrated curriculum with an array of instructional support services, often delivered through a Learning Center, including tutoring as well as advising and counseling.

Such programs require remediation with mastery level performance supported by frequent testing and feedback. Often these programs provide individualized instruction integrating the teaching of critical thinking skills across the curriculum. Frequently, supplemental instruction is provided with support services in close proximity to the classroom. Student success in these programs is high, with 82% of the students completing reading and succeeding in their first college-level course; 71% of the students completing writing and succeeding in their first college-level course; and 73% completing mathematics and succeeding in their first college-level course. (See Developmental Education: A Status Report in Appendix M.)

With this background, the members of the Task Force identified the characteristics of a successful student: a good high school average, high placement test scores, and some academic aptitude; knowledgeable about the importance of developmental skills and the relationship between successful completion of developmental studies and performance in college-level courses in their major; committed to their studies and willing to invest 4 to 5 hours of study per week for each class; ready to use tutors and the Learning Center; and determined to accomplish their goals.

Members of the Task Force also considered the characteristics of an ideal program, identifying characteristics such as: a program of integrity, with talented, committed faculty, supportive policies and procedures, and adequate space; a program which is linked to the students' academic needs as well as the needs of the departments; a program supported by effective assessment and placement, a well-defined curricular structure, interactive pedagogy, and student success.

In an effort to move toward such a program, each of the four areas involved, i.e., reading, writing, mathematics, English as a Second Language (ESL), and the Learning Center, analyzed their program and provided suggestions for reform including:

> The reading faculty have recommended more levels of reading with more time-on-task, reduced class size and teaching load, variable credit, and improved facilities.
>
> The Learning Center has recommended more tutors, more computers and better maintenance with more software programs, increased hours of service, particularly on Saturdays, more space and greater coordination with developmental faculty.
>
> The mathematics faculty have recommended reduced class size and workload, additional faculty support, increased classroom availability, improved physical environment, and more tutors, computers and books.

The English department has recommended reduced class size and workload, the integration of reading and writing, increased credit hours and/or additional courses, more full time faculty, and improved facilities.

The ESL faculty recommended reduced class size, study space close to faculty offices, and additional full time faculty.

In conjunction with the comments of students and their colleagues, the quantitative data analyzed, and the literature review, these suggestions helped shape the recommendations of the Task Force on the reform of the developmental program.

V. RECOMMENDATIONS

By examining the issues, problems, and solutions of developmental education nationwide, and analyzing considerable data from a variety of sources at the college, the Task Force has arrived at a number of recommendations for change that we believe will improve New York City Technical College's developmental education program and the supplemental educational experiences offered to our students. The main emphases of the Task Force recommendations are to decrease the need for developmental education by raising admissions standards and to improve the effectiveness of college remediation efforts by addressing assessment and orientation as well as teaching and learning. The Task Force recommendations have been developed under four headings: A. Pre-college, B. Testing, C. Students, and D. Curriculum and Instruction.

A. Pre-College

The Task Force found that most students (80-85%) are required to begin their college education with developmental level, non-credit courses under current admissions criteria. However, only around one-fifth of these students graduate, compared to nearly half who enter without needing remediation. The students beginning in the lower level of developmental education courses have a particularly high rate of attrition and low probability (4-12%) of graduation. Under these circumstances, members of the Task Force were concerned both with being honest with students about their chances of academic success and with using the college's limited resources by continuing to serve students with the lowest level of academic preparation and least likelihood of completing their academic program at City Tech. Five specific recommendations for the College resulted from this analysis:

A-1: Establish senior college admissions requirements over time so that CUNY does not admit to New York City Technical College students whose likelihood of academic success is very low;

A-2: Defer admissions to students whose scores on the Freshmen Skills Assessment Tests are at the very lowest levels, e.g., 1 or 2 in writing and 1-5 in mathematics, referring these individuals to CUNY community colleges, the Educational Opportunity Center, and the proposed CUNY language immersion institute.

The adoption of these recommendations will decrease and ultimately eliminate the number of students in the lowest levels of remediation offered at City Tech. To ensure that students are fully informed about developmental education, including the importance of initial assessment testing and the implications of remediation for both delayed graduation date and decreased financial assistance to complete college degree requirements, additional recommendations include:

A-3: Design orientation sessions and print materials for distribution prior to initial assessment testing to better inform admitted students of: (1) the importance of the Freshmen Skills Assessment Tests for placement; (2) the purposes and expectations of developmental education; and (3) the relation of initial placement to their academic future including the implications of these requirements for financial aid and college graduation.

A-4: Organize the way assessment tests are administered by including orientations by current students, breaks between tests, and opportunities for faculty-student interaction before the exams to enhance the likelihood of student success.

A-5: Encourage entering students to enroll in the Summer Session before entering in the Fall, and especially, to take advantage of the Immersion (USIP) program.

B. Testing

The Task Force examined current placement and exit criteria for developmental education at City Tech. Members also reviewed other institutions and practices and discussed current CUNY efforts to change substantially the current policies and procedures for placement testing and rising junior standards. Based on this study and

analysis, the Task Force offers the following observations and recommendations:

B-1: Use specific instruments for distinct purposes: placement, exit criteria from developmental education, and rising junior certification for advanced level college work.

B-2: Continue employment of criteria developed by the departments engaged in teaching developmental skills with input from relevant departments to determine when students exit developmental courses and are ready to begin freshmen level college credit course work.

B-3: Examine and explore other possible placement instruments and strategies that are both effective and efficient, as well as in compliance with CUNY guidelines and requirements for placement testing and certification within the departments.

B-4: Consider development or selection of supplemental instruments for testing non-native ESL students.

B-5: Re-examine exit criteria from developmental courses to focus on demonstration of skills necessary for success in credit-bearing courses through multiple measures selected by the departments engaged in teaching these courses rather than on certification with a single instrument.

B-6: Ensure student placement, through effective advisement and at registration, in developmental education courses so that these requirements are not bypassed or delayed.

B-7: Emphasize to all faculty advisors and students the importance of students completing developmental education courses without delay and as soon as possible.

B-8: Provide administrative and clerical support to clarify, improve, and publicize an appeals procedure for students who feel their test scores and initial placement in developmental education does not accurately reflect their academic preparation and capability.

C. Students

It was apparent to the Task Force from its first meeting that students themselves recognize that their effort is the most important ingredient in academic achievement. The primary reasons students attribute for failure in developmental education are poor attendance, inadequate attention, insufficient study time, and poor study habits. Students also recognize the importance of effective instruction, suggesting that both students and faculty need to be better informed about and prepared to employ the key ingredients for successful learning and teaching. As a result, data from student focus groups and surveys corroborated many of the curriculum and instruction issues and recommendations outlined in Section D below. Specific recommendations relating to students include:

C-1: Provide adequate support and coordination for developmental students, including advising and counseling, monitoring with interventions, tutoring and study groups, and the instructional resources of the Learning Center with programmatic coordination to ensure success and advocacy for the needs of developmental students on campus.

C-2: Require all developmental education students to participate in AA101, Adjustment to College course, or an extended orientation to learn the necessary traits and skills of the successful student, including motivation for college; the importance of mastery in basic academic success skills, such as study habits, time management, classroom behavior, note-taking, textbook reading, test preparation and test-taking; the need for interaction with faculty and peers; and the effectiveness of forming and using peer learning groups.

C-3: Clarify, publicize, and enforce college rules for repeating developmental education courses. For example, offering one initial opportunity, with a second opportunity to take a developmental course contingent upon demonstration of the student's diligence at the first effort as evidenced by attendance and punctuality, completion of homework and course requirements, and recommendation of the faculty member teaching the initial developmental course are clear guidelines. Students not meeting these requirements should be dismissed from the College for insufficient academic progress.

C-4: Insure students' awareness of their commitment to developmental education, through such means as developing and administering a contract to be signed by each student in a developmental education course, indicating the conditions and expectations for the developmental course including attendance, outside study time, course requirements, etc., and the consequences for not successfully completing the course.

C-5: Recognize and reward student progress and achievement in developmental education and especially upon exit in order to honor success and build self-esteem.

C-6: Implement a program of faculty development to promote effective teaching techniques, and to stress the importance of demanding high standards of effort and achievement from students. The program should emphasize the qualities of effective teaching stressed by our students and educators nationwide, e.g., enthusiasm, respect, care and support for students, clear explanations and hands-on practice with relevant applications, assistance outside of class during published and other office hours and other times, frequent feedback, and assistance in forming peer learning groups to function within and beyond class. Classroom management techniques that reinforce good attendance and appropriate classroom behavior, should be addressed.

C-7: Encourage faculty to teach in the developmental education program who demonstrate the necessary interest, knowledge, and skill, as well as care and respect for students.

D. Curriculum and Instruction

A wide range of curricular and instructional ideas were generated by students and faculty, supported by a literature review and consultation with other institutions regarding curriculum and instruction. The major ideas advanced included the design of a more coordinated approach to curriculum, the expansion of effective models of instructional delivery, and improvements in pedagogy, as well as overall structure and organization of the developmental effort. Recommendations include:

D-1: Strengthen the connection between reading and writing, both in terms of curriculum design and skills integration so that reading and writing reinforce each other and produce improved communication skills.

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D-2: Consider linking developmental courses with career areas through block scheduling. Such linkage would enable the use of examples, case studies, and materials in areas relevant to the students' major field of study/career interest.

D-3: Restructure the scheduling of developmental mathematics by offering more classes per week for shorter periods of time, and developmental writing by offering more sustained periods of writing.

D-4: Revise the curriculum in developmental mathematics to include more preparation for algebra at the lowest level and greater emphasis on understanding mathematical ideas, more real-life and career applications and examples, use of calculators, and incorporation of mathematical topics needed by career departments at both levels.

D-5: Experiment in mathematics and reading with developing both accelerated and enriched courses based on research on student success and the analysis of initial assessment scores.

D-6: Integrate the Learning Center's functions into the instructional program of developmental education courses more clearly and explicitly, including use of tutors, shared print materials, and software selected in collaboration with developmental education faculty, as components and supplements of the course.

D-7: Upgrade, institute, and expand use of the Supplemental Instruction and immersion models, both of which have proven effective at City Tech and at other colleges for developmental education.

D-8: Institute a program of professional development for faculty teaching developmental education courses focusing on the following: students' study skills and the concepts from AA101/extended freshmen year orientation; promotion of collaborative learning including the formation of peer learning groups inside and outside the classroom; increased use of appropriate technology to assist and augment instruction; application of classroom research techniques; and development of authentic assessment strategies to obtain feedback on student learning and performance.

D-9: Establish a research program to assess the performance of the Developmental Education program over time, and particularly the effectiveness of changes implemented as a result of this report.

D-10: Make every effort to consider class size in developmental education courses, in that smaller classes do provide greater opportunity for faculty-student interaction and individual attention, both of which enhance student learning.

The Task Force discussed at some length the issue of structural organization of the developmental education program, including moving reading and CESL faculty to the English Department and developmental mathematics faculty to the Mathematics Department. Individual curricular reports either made such recommendations or commented on the pro's and con's of such action. The English Department report commented that reading and writing should be incorporated into the same department for best results. The Task Force learned through the literature that separate developmental skills departments were more common in two year colleges nationally, while four year schools more often include developmental areas within the usual discipline-based academic departments. The Task Force considered more overriding than the actual departmental structure, the issue of necessary curriculum coordination and integration, especially in the reading and writing areas. The Task Force could not reach a consensus regarding a recommendation for change of departmental structure for developmental education.

The Task Force did offer recommendations to foster the program coordination, evaluation and advocacy necessary for an effective and coherent Developmental Education Program and to ensure follow-up to this report:

D-11: Convene monthly in Arts and Sciences a council of the chairs and coordinators responsible for developmental education, including the directors of the Learning Center, Counseling, and Academic Advisement to ensure necessary attention to and coordination of developmental education. It is further recommended that a faculty member be given partial release time to staff this council, gather relevant information and data, conduct periodic evaluations of the developmental education program, and assist in advocating for developmental education.

D-12: Request that the academic departments, support offices and programs providing Developmental Education, over the next two academic years, incorporate into their annual reports assessments, progress, and impacts of implementing the recommendations contained in this Report.

VI. EPILOGUE

The Developmental Education Task Force met for over a year to collect and analyze a wide range of relevant data before discussing proposals for change and improvement in such areas as academic policy, admissions, pedagogy, curriculum, and administrative structure. While members of the Task Force did not always agree; they worked toward the consensus represented in this report. Despite the intrusion of the current budget crisis, the Task Force continued its focus on longer range directions, interventions, and improvements.

The recommendations of the Task Force outlined in the previous section offer a vision for the future and specific direction for change and improvement. Concrete action in such significant areas as admissions requirements and registration procedures, as well as placement criteria and exit standards in conjunction with increased faculty and interdepartmental cooperation, curriculum integration, and student responsibility will strengthen developmental education and fulfill the Task Force's vision for a coherent, coordinated, and effective developmental education program.

For the students, these recommendations should encourage a focus on the College's expectations and requirements for their academic success and graduation. Developmental education is a means to an end, not an end in itself. Consequently, students must either arrive with requisite skills, or acquire them at the beginning of their college experience. As City Tech moves to senior college status, the level of both initial skills expected and college-acquired skills demonstrated will, inevitably rise. What the College can offer students, and what students must do for themselves, are basic issues explored in this report.

For faculty members, these recommendations should help clarify the role of developmental education within the College's broader mission of providing an increasingly sophisticated and wide-ranging technical education for the twenty-first century. The articulation between developmental offerings and expectations and degree-granting departments and programs is a major focus of the report, and this focus must be further sharpened through continuing dialogue, experimentation, and development. Though most students currently begin their college career with developmental studies, helping students adjust to the rigors and expectations of college life and preparing students for more advanced academic work as well as career training is the responsibility of the entire College community, not just faculty teaching developmental courses.

It is the hope of the Developmental Education Task Force that these recommendations, submitted for consideration of the College community, will serve as the basis for continuing conversation and an ongoing process of self-examination in the light of changing realities at the College and within the City University of New York. We commend this report to the entire community and our colleagues at CUNY.

New York City
Technical College
The City University of New York

APPENDIX A

Office of the Provost and Vice President
for Academic Affairs

September 19, 1994

Professor Hernan Baranda
Construction Technology - V433

Dear Professor Baranda

As City Tech continues to face the challenge of preparing qualified students for a national work force, a reassessment of its academic programs and student support services is necessary to determine how the demands of a diverse student population can best be addressed.

In the Fall 1992, the college embarked on a self assessment of its curricular offerings and academic support services. This undertaking resulted in the college' Strategic Plan document with calls for **alternative instructional methodologies, strengthening of language laboratories, tutorial reinforcement, sequencing and placement procedures, a review of policies on remediation (including assessment and strengthening of developmental course offerings), advisement, block programming, and other methods of linking developmental and degree-credit course work, and reviewing the 12 credit policy for completion.**

To address the issues facing students who are in need of developmental education, you have been selected to join the membership of the **Developmental Education Task Force.** Specifically, the Developmental Education Task Force is charged with the following:

1. Gathering and analyzing data on student remediation, including types of assessment tests (entrance and exit), and profiles of multiple repeaters

2. Studying various approaches to developmental education at colleges similar to NYCTC with assessment of their success rates

3. Investigating current approached to developmental education at NYCTC including course offerings and curriculum, pedagogical approached, use of instructional technology, experimental projects, departmental housing of developmental education programs and use of supplemental instruction in learning centers

300 Jay Street
Brooklyn. NY 11201-2983
718-260-5560

4. Recommending approaches for acceleration of remediation, improving testing, assessing developmental education learning outcomes and curriculum, developing pedagogical alternatives and instructional technology

5. Recommending a comprehensive systemic approach for the improvement of developmental education at NYCTC

6. Providing a suggested timetable of activities implementing task force recommendations

7. Other activities as determined by the Task Force.

The task force will present its recommendations in a report at the end of the Fall 1994 semester.

Both President Merideth and I feel confident that your expertise and contribution to the work of the Developmental Education Task Force will result in the identification of very progressive initiatives for our City Tech students. Please confirm you willingness to serve on this task force with my assistant, Ms. Gladys Portalatin, at extension 5560.

Thank you for considering this request.

Sincerely

Emilie A. Cozzi
Provost

c: Dean Peter Mannello, Associate Dean, Technology
Dean David Entin, Associate Dean, Arts & Sciences
Professor Elliot Colchamiro
file

DR. KATHERINE L. GERMAN, PH.D.
STATEMENT OF QUALIFICATIONS

Katherine L. German is an organizational consultant committed to the education sector. With a background in the design and implementation of developmental programs, Katherine has been assisting colleges and universities with the reformation of curriculum and instruction for over twenty years. Now Vice President of Development Institute, Inc., Katherine has also served as Vice President of Academic Affairs at Endicott College, as well as Division Chair of English and Communications and Director of the Academic Support Center at North Shore Community College. Throughout her career in higher education, Dr. German has continued to teach English composition and experiment with emerging curricular and instructional techniques.

Dr. German earned her Ph.D. in Education at the University of Illinois at Champaign-Urbana. Additional study includes a Certificate of Advanced Study from the Harvard Graduate School of Education, a masters in Education from Bowling Green State University, and a bachelors degree from Pennsylvania State University. In addition to formal study, Dr. German has continued her growth and development through programs offered by the Center for Creative Leadership, the American Council on Education's National Identification Program, and Higher Education Resource Services, as well as the Leaders for the '80's Next Step. Areas of professional competence include: organizational development and strategic planning, management and professional development, and resource development. A complete resume is available upon request.

Development Institute, Inc., is incorporated under Chapter 156B of the General Laws of the Commonwealth of Massachusetts. Since 1980, D.I. has provided consulting services to a variety of governmental agencies, colleges and universities, school systems, non-profit organizations and associations.

The mission of Development Institute is to deliver personalized consulting services and high quality technical products that strengthen the management and effectiveness of organizations engaged in providing educational and human services. We strive foremost to deliver a process and products in the manner expected and differentiated by superior standards of competence.

Among the recently active clients of D.I. are 24 colleges and universities, 8 school systems, 3 statewide associations, 6 human service organizations, and 3 governmental agencies. A notable characteristic of the consulting relationships is the frequency of repeated contracts with D.I. One consulting contract has continued over 10 years, and more than half of the clients have requested second or third contracts. Almost all of D.I.'s work derives from unsolicited "word of mouth" recommendations.

APPENDIX C

NEW YORK CITY TECHNICAL COLLEGE
of the City University of New York

College Learning Center
Room AG 18
(718) 260-5874

Date: November 2, 1994

To: Michele Gage, Academic sub-committee of DETF

From: Marge Poyatt, Director, College Learning Center

Subject: Answers to survey questions

++

3. Describe the instructional technology.

The learning center is supplied with computers (compatible and MAC), video players and limited tape recorders/players. The three LC sites have over 100 compatible computers and 34 MACs.

4. Experimental projects you now have or have had.

Learning Center VATEA funds paid for released time for Dr. Alice Richardson for three semesters. During that released time and during much of her own time, Dr. Richardson worked one-on-one with ESL students who had repeated EL031 and were far advanced with their college careers. With the assistance of highly supervised and very concentrated tutoring many students were enabled to pass the CUNY WAT. This was an extremely labor intensive project but it worked.

Semester	Number of passes
Fall 1992	11
Spring 1993	17
Fall 1993	15

In addition to the above project, individual students who passed the DM065 course exam but not the CUNY MAT have been referred to the ALC for tutoring and retesting. I have not always had a list of the persons referred and I expect it would include many more than those who arrive. Of those who arrive and who persevere through at least several hours of tutoring in one hour per week appointments, about 75% pass the MAT. This amounts to 4-10 passing students per semester. I am not sure how appropriately these students are prepared for successive math courses.

An additional experimental project has been used for Anatomy and Physiology classes in the past two semesters. This method is officially called "Supplemental Instruction". The project involves having a student "SI" leader who is recommended by the subject teacher and who has successfully passed the course preferably in that teacher's class, sit in on the class again and act as a model student. The "SI" leader conducts study groups several times a week which students from that section are invited

to attend. The "SI" leader who has been trained in group facilitator skills and study skills assists the students to take better notes, to make better use of notes, to acquire group study habits and to better prepare for tests. This project has had very good success with a higher percentage of A,B and C grades and a lower percentage of F, and W grades in the group who attend the sessions than in the remaining students in the class who do not attend. The project has not been used for developmental courses.

6. How is supplementary instruction in the learning centers used?

As of 10/27/94 there have been 9,061 fall semester visits to the ALC. Seventy-three percent of those visits were for computer use, 24% for tutor use and 2% for audio and video use. These visits were made by 2,701 unique students.

Unique students	Use	% of unique students
71	PLATO	2.6
616	tutor	22.8
46	audio	1.7
12	video	.4
1841	computer(other than PLATO)	68
94	MAC	3.4

The following unique students indicated visits under course codes listed below:

Unique students	Course code
135	DM065
18	DM055
32	DR092
53	EG092
33	EG091
10	EL031
73	EL
491	EG

****Please note the above statistics are for the first half of the semester. A complete semester of learning center use usually draws 5000 unique students. It is also important to note the above counts do not include the tutoring for the special multiple repeaters classes which occurs outside the learning center itself.

Students who have discovered PLATO are using it on a "skim" basis except for the small number of cases where faculty have sent students specifically to use the program.

What is the student/tutor ratio? In the past there was much one to one tutoring in the learning center. Now there are no individual appointments (except for a few students sent by Prof. Deraney who have "almost" passed the CUNY MAT). Credit level math tutoring has always been 5-6 students to one tutor. Now that the number of tutors per hour in all subjects has been decreased and there are some hours during which no tutor of a given subject is available there are two responses. Some students have observed the dearth of tutors and have stopped coming while others come but express concern, frustration and dissatisfaction at every

possible opportunity. Attached find the fall 1994 result of the ALC/student survey.

7. Needs:

Close interaction between the faculty of the served departments and the CLC is a prime need. When the learning center had funds to hire more tutors, VATEA funds were also used to support released time for tutor trainers in reading, writing and ESL. At present the developmental reading, biology, chemistry, accounting and computer systems technology departments are active in recommending and recruiting prospective tutors for their subjects. These communications help to ensure tutoring which is satisfactory to the departments' standards and consistent with department curriculum.

Writing and math tutors are drawn from a combination of sources: peer tutors from this college and surrounding colleges, graduates, graduate students, adjunct instructors and retired teachers. Some of the adjunct instructors were originally ALC tutors and were hired by departments as a result of their employment in the learning center.

Student surveys indicate a need for more tutoring. The spring 1994 multiple repeaters survey indicated that tutoring supplied for those students was one of the principle factors the students perceived as leading to their eventual success.

New York City
Technical College
The City University of New York

Inter-Office Memorandum

Date: December 21, 1994

To: Developmental Education Task Force Academic Sub-committee

From: Brian Keener, Chair, BK
English Department

Subject: English Department Response to Remediation Questionnaire

1. COURSES/CURRICULUM

The English Department offers a two-level sequence remedial writing sequence:

EG091 Developmental Writing I (4 cl. hrs., 0 cr.)
Placement: score of 4 or less on CUNY WAT
Exit: satisfactory on departmental final: sentence correction and composing a paragraph.

EG092 Developmental Writing II (3 cl. hrs., 0 cr.)
Placement: score of 6 on CUNY WAT or EG091
Exit: score of 8 or higher on WAT

Developmental Writing I is a beginning course in writing skills focusing on instruction in basic sentence patterns, basic grammer and punctuation, spelling, syllabication, and use of the dictionary. The course emphasizes the writing of paragraphs through which the student develops competence in organization and in supporting a main idea.

Developmental Writing II is an intermediate course in writing skills focusing on composing the short essay including revision and proofreading. The course emphasizes instruction in advanced and varied sentence patterns, attendant punctuation and grammar and the use of the dictionary to investigate word formation and further develop vocabulary. Short readings are studied as models.

2. PEDAGOGICAL APPROACHES

Remedial writing classes combine ample writing practice (perhaps including free writing and keeping journals as well as expository paragraphs and essays) with classroom lecture/discussion/ exercises. A number of classes employ group work.

3. INSTRUCTIONAL TECHNOLOGY

The English Department utilizes computer-assisted instruction in remediation. Each semester ten or so sections meet every other session a week in a computerized room with 24 stations. Faculty are enthusiastic about this approach. Students enjoy composing on a screen, benefit from the opportunity for revision, and take pride in printing their work; meanwhile, the instructor is able to work with the students individually, by visiting stations or tuning into a student's screen. This technology allows the instructor a means of better teaching writing as process, including organization and editing skills. The chief problem is that with only one such facility only a limited number of sections can avail themselves of this approach.

4. EXPERIMENTAL PROJECTS

The department has participated in a number of experiments involving remediation. Last spring an express EG 092 ran, compressing a full semester into a seven week four-days-a-week format. The results were positive, with a high pass rate. This spring we are planning an express EG091 with those passing the final after seven weeks advancing to EG092 the second half of the semester (the remainder shall repeat EG091); similarly, an express 092 shall lead into Psychology 101. Over the past two semesters the department has participated in the multiple repeater project, running four sections each term for these students. This effort has included tutoring, (though not in the spring) a smaller class size, the opportunity to take the final at mid-semester, and contracts with the students about attendance. Again, the results have been encouraging: last spring, approximately one-third the students passed (about twice the number when mainstreamed). The past three Januaries (and last August) the department has participated in the Intersession Immersion Program, running computer-assisted and tutorized intensive two-week EG 092's. These classes have proven very successful with most of the students becoming certified. The department also has had a great deal of success with a special section of EG092 for learning disabled students. The common thread running through these successful experiments is a smaller than normal class size. This factor, along with the special attention manifested in tutoring and the use of computer-assisted instruction, makes a great difference. Finally, it should be noted that each semester the WAT is given on the first meeting of EG092 classes both as a diagnostic and as a failsafe measure to move qualified students out of remediation. The department sets aside two or three late-starting English Composition I sections for these students. This is a cumbersome process, but the department undertakes it in order to accelerate students through remediation.

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5. HOUSING

Ideally, the English Department should house Developmental Reading. Indeed, reading and writing might be combined into the same remedial courses. For example, DR092 and EG092 should be one six hour course. This arrangement would be academically sounder than the present one that separates subjects that complement one another. Students would better comprehend the inherent relationship between the two; faculty--dealing with a reasonable paper load--could better serve the needs of students by assigning even more writing than is now the norm. An exit exam that would test both reading and writing at the same time could be created to complement (or replace) the RAT and WAT. In these budget-lean times, this arrangement is probably the way to go since it would not require additional funding.

Moreover, given adequate resources, College English as a Second Language should also be housed within the English Department. These students at the credit level are mainstreamed into our courses and at the remedial level must pass the RAT and WAT for certification. At present, however, CESL is woefully under-resourced, with adjunct faculty teaching most of the courses. Hence, it is not feasible to house CESL with us, especially since English itself is already half adjunct.

6. SUPPLEMENTARY INSTRUCTION

A detailed response to this question is the responsibility of the learning center coordinator, but a few comments are in order here. Whatever the student/tutor ratio, there are now not enough tutors to meet the needs of our students. In reality all of our 1500 plus remedial students would benefit from tutoring. As is, the learning center can only service a small percentage that require help. Moreover, technology cannot replace tutors fully. Even when using computer programs, students require flesh and blood tutors to monitor their progress.

7. NEEDS

The most pressing concerns are related: class size and workload. Classes of 24 are simply too large for writing courses, especially given the fact that our students enter with grave deficiencies and require a good deal of attention. The Association of Departments of English advocates no more than 15 a class with no faculty member teaching more than 45 students a term; this semester the CUNY English Council (made up of all CUNY English Department chairs) has recommended to the Chancellor that remedial sections top off at 18. The success of experimental sections that feature a smaller class size indicates the importance of this factor. As for workload, faculty currently may teach four or five writing sections (remedial or credit) per semester resulting in a total of over 100 students. The soundest way to ease this burden would be to combine reading

and writing within the same course (note #5). Another way to address this problem would be to increase the hours of English Composition I to four (thereby lessening the overall workload). Although this survey does not deal with credit writing per se, this issue is pertinent here because high-risk writing and reading certified students (including CESL) become composition students. Another suggestion is a remedial sequence that would add a five hour course (EG 093) for EG092 repeaters with a reduced class size, WAT testing at mid-semester, and a strict contract regarding attendance and effort.

An underlying problem is the increasingly troubling unhealthy ratio between full-time and adjunct faculty. By the spring, for the first time, adjuncts will teach over half of our overall sections. As dedicated as the adjuncts are, they cannot be expected to serve the students' needs as well as full-time faculty might. Hence, the department needs additional faculty to carry out its mission. As for facilities, there is a need for at least another computerized classroom. Currently, N601B is used around the clock. Indeed, with the college's room crunch, there is a problem with holding classes in rooms that are windowless, airless, and in general not conducive for learning. There could be more space with desks and file cabinets for our 46 adjuncts; in addition, the department needs release time for a faculty member to supervise the growing number of part-timers.

8. <u>FALL 1994 DATA</u>

1. a)FT faculty: 21
   b)Adjunct: 46

The department has set aside one office (N529) for adjuncts. They share four desks; file cabinets are not available.

2. The department ran 167 sections (64 remedial)
3. Average class size: 24 (24 remedial)
4. Experiments: four multiple repeater sections (17 per section)

   one learning disabled section (11)

   one SEEK section (with tutors,17)

   four intersession sections are planned for January

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Developmental Education Task Force
Curriculum and Instruction Sub-committee
February, 1995

In order to document the current approach to Developmental Education at NYCTC, and to make recommendations for the future, the Curriculum and Instruction Sub-committee asked for the following information from Developmental Skills (Math, Reading and ESL), English (Writing), and the Learning Center.

This is a summary of the responses and recommendations for Developmental Math.

1. Describe the developmental courses/curriculum offered by your department or unit. Please include the desired outcomes of each level. What changes do you recommend? Why?

DM055

Basic Mathematics (4 hours). Uncertified math students who receive less than 10 out of 20 possible points on the arithmetic section of the CUNY MAT AND less than 15 out of 40 possible points on the entire exam are placed in this course. This arithmetic course encompasses whole numbers, fractions, decimals, percents, reading graphs (bar, broken line, circle), adding and subtracting denominate numbers, and word problems. Students are not permitted to use calculators unless they are certified learning disabled. Most of the emphasis of the course is on learning and practicing algorithms. On the final exam, word problems are worth 25 points, straight-forward computation is worth 75 points. Students must receive an 80% average, giving classwork 20% and the final exam 80%. They are then eligible for DM065.

This course was first created as review of arithmetic for pre-business students, and was not designed to lead to algebra. Students who place into DM055 have forgotten the arithmetic they once learned, or never learned it, and/or have learning disabilities. (Math is different from reading and writing in that you don't forget how to read or write, but you may forget how to solve a quadratic equation.)

Experience has shown us that students who enter with such weak math backgrounds do not succeed in majors requiring calculus even if they are successful in DM055. Since the CUNY MAT is a test of "gross mathematical ability," it might be used to counsel entering freshman away from two-year degrees involving mathematics courses beyond MA275. Although we do not recommend choosing a major by looking for the one that requires the least amount of math, it not reasonable to assume that an adult entering the college with very low math skills will succeed in a career that depends so heavily on mathematics, such as ET.

Although many people feel that arithmetic should not be taught in college, students who begin in DM055 do graduate in majors requiring few or no math courses after DM065, such as AD, HS, HT, LO, and NU. All programs now require at least one course beyond DM065. These students would be highly unlikely to pass DM065 in their first semester without something to prepare them for DM065. In fact, they often need more than one semester to pass DM065, even after succeeding in DM055. For a number of reasons, the Mathematics Unit has been considering major revisions in DM055 content:

(1) DM055 should prepare students for algebra, since that is the next course students take. This means that certain pre-algebra concepts need to be developed in DM055.

(2) A recent survey of all major departments raises questions about the course content. Topics that are pre-requisites for many majors are not taught in any math course, and some are appropriate for DM055, such as measurement and foundations of geometry.

(3) The overwhelming focus on computation needs to be balanced with the current accessibility of calculators, and the need for development of important concepts that students weak in mathematics need to succeed, such as ratio and proportion, estimation,

measurement skills, understanding various equivalent ways of expressing quantities, etc. The National Council of Teachers of Mathematics and American Mathematics Association of Two Year Colleges have revised standards for mathematics courses from K through college. They de-emphasize isolated rote calculation and emphasize understanding of mathematical ideas and using math as tool to solve problems in context.

(4) The issue of calculators needs to be addressed. While some algorithms need to be learned without calculators because they lead to understandings important for algebra, others have become superfluous. (We once had to learn how to do square roots by hand.)

DM065

Elementary Algebra (5 hours).Uncertified math students who receive 10 or more out of 20 possible points on the arithmetic section of the CUNY MAT OR 15 or more out of 40 possible points on the entire exam are placed in this course. Students who pass DM055 take this course. Entering students in MA 175 sometimes choose to take this course after a day or two in MA175. Students who take this course have either forgotten algebra, were not initially successful in algebra, or never had algebra. New York City high schools no longer offer algebra, but require students to take Sequential I, a combination of algebra, geometry, logic, statistics, etc. DM065 is a basic algebra course with a review of arithmetic, leading to eligibility for MA175 or MA180. There is a departmental algebra final. With a 70% course average that counts the final almost twice as much as the class average, a student qualifies to once again take the CUNY MAT.

Research has shown that those who pass DM065 pass MA 175 at the same rates as students who were not initially placed in Developmental Skills, but they are not getting A's and B's at the same rates. Unfortunately, pass rates in DM065 are in the range of 40-45%. The Mathematics Unit has long felt that placement criteria for this course seems too low to provide reasonable assurance of completing the course in one semester. A cut-off point on the entering CUNY MAT has been recently identified above which 60% or more of the students are passing DM065 on the first attempt. Below that point, less than 45% pass on the first attempt. To speed up DM065 and lessen the likelihood of repeaters, those below the cut-off could be given a 6 hour DM065 that meets 3 times a week (as opposed to the 10 hours they now take by repeating the course). Those above the cut-off might succeed in a 4 hour DM065. We recommend that DM pursue the possibility of having these as experimental courses next semester.

DM055 and DM065

While the primary focus in Developmental Mathematics has been on preparation for MA175 and other mathematics courses, a secondary, implicit objective has always been to provide students with the mathematics needed in the first levels of their major department courses, although there has been no format for communicating major department needs and feedback for many years. This year's survey of all major departments raises questions about the course content in DM. Topics that are pre-requisites for many majors are not taught in any math course, and although some are appropriate for DM055, such as measurement and foundations of geometry, students may place into DM065 without first taking DM055. Because the course content of DM065 is so packed, the addition of other topics would require a serious rewriting of the mathematics curriculum, both developmental and credit level.

Another concern, expressed by many faculty members within and outside of DM is the need for students to improve their ability to apply basic mathematics skills to "real world" and "academic" applications and problems. The present attempt to provide a quick algorithmic review of arithmetic operations and then move on to abstract algebraic concepts leaves many students with a set of rules and procedures which they can not use appropriately when they need to. Many students never received the concrete mathematical experiences they needed throughout the lower grades to provide the basis for abstract work. To correct this would require a major shift in emphasis throughout the mathematics

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curriculum and possibly additional time to incorporate more mathematical activities and applications in our courses. To ignore this means that under-prepared students may not get the appropriate preparation they need to succeed in many major departments.

2. What pedagogical approaches have been or are currently in use? (Examples: collaborative learning, role playing, peer tutoring, writing in math class. Do not include instructional technology here.) What changes do you recommend? Why?

Faculty in Developmental Math employ a variety of pedagogical approaches with the individual classroom setting. Generally, they do not lecture, but combine brief presentations of new material with class discussion and individual or small group classwork. The instructors can then circulate through the room and give individual assistance. Some DM055 sections are completely individualized. Some DM065 sections have computers to assist with presentations, testing, and individualized assignments. A few instructors employ writing in math class, collaborative work, and hands-on activities.

The present enlarged class sizes limit the degree of individual assistance that instructors can provide, and the amount of individual feedback they can receive from students. Class size has seen a steady increase during the last 15 years. The original concept for the developmental programs included extensive individualized instruction. Class sizes were fewer than 20 students and tutors were employed in many classes. At that time, mastery learning based instruction was common, with students working individually from programmed materials. There also was a more intimate connection between the classroom and the learning labs, which were under departmental administration and located near departmental offices. The number of students an instructor can help in his/her office hours remains the same, while the number of students needing help has increased with class size. During the past ten years, class size has grown from 20-22 students to classes which average 26-30 students.

The teaching of mathematics has been under extensive review at all educational levels. The developmental math curriculum and instruction should be reexamined in light of this change. There is a New Couse Committee exploring changes in curriculum and instruction. In a technical college, the courses could be more hands-on, activity based, project oriented. There can be more collaborative learning, a skill needed in technical careers. The entire course might even be built around a simulated business, where skills and concepts would be developed and reinforced in a meaningful context.

3. Describe use of instructional technology. (Examples: calculators, computers, videos, slides, tape recorders.) What changes do you recommend? Why?

Math unit faculty members have tried using computers, video and audio tape, and slides. The computers have been used for testing, writing in mathematics, and tutoring in the learning centers. This semester, some classes are using computers and books provided by Academic Systems. Faculty in this unit have also used video tapes to replace classroom presentations and to review for exams in the learning center. In the past, slide presentations and audio tapes were available in the math lab for tutoring. The material used in all cases has either been developed by faculty at the college, been purchased, or been provided by textbook publishers whose books are used in the courses. Calculators are not presently being used in DM courses.

Instructional technology should be used when it is as good as or better than other ways to motivate students to learn, to support the students' learning, to evaluate the students' learning. Has it been evaluated in these ways? Is the expense for the various technologies justified or should the resources be placed elsewhere? As a model, selection of programs or products purchased that will be used in developmental math should be done by the appropriate instructors. For example, Academic Systems was chosen by representatives from Math and Developmental Math. The company is providing training and technical

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support to the instructors who are using the systems this semester. There is continued feedback from the instructors to the company so that the system can be adjusted to serve our students.

4. Describe experimental projects you now have or have had. What worked? What didn't? Why? What changes do you recommend?

A DM080 course, now reincarnated as DM/MA Express course is considered generally successful. (WHY?)

Multiple repeaters sections have run for two semesters. Although multiple repeaters can finally pass DM with smaller classes, required attendance and individual tutoring, they are not passing the MA 175 that follows. If smaller classes, required attendance and individual tutoring work in the fourth or fifth semester, then why shouldn't they be given on the first try, or at least on the first repeat? It is unfair to have a student repeat a course many times if we do have a way to help them through earlier. On the other hand, if they are finally passing only to fail the next course, perhaps the limit on number of repeats allowed should be enforced before so many semesters go by. (The number of repetitions allowed will change beginning with Spring 1995 Freshmen.)

Computer based (assisted?) instruction? New . Has not been evaluated.

Summer intensive programs have small classes, tutoring and counseling. These have a high pass rate, but have not been evaluated on how students do in the next math course.

5. Respond to the present departmental housing of developmental education programs. If this is less than ideal, what would make it better? Describe an ideal configuration.

Developmental mathematics could either remain in Developmental Skills or be combined with the Mathmatics Department. This is an issue that has surfaced before. The concerns that have been raised in terms of curriculum and instruction are:

<u>If there is a move</u>

Who will be an advocate for developmental skills students?

Will developmental teachers be teaching more credit-level courses and leave developmental courses to adjuncts?

Will there be a DM coordinator to work with new adjuncts?

It might be easier/harder to change curriculum and instruction in one large department.

<u>If there is no move</u>

It might be easier/harder to change curriculum and instruction isolated from the Math Department.

Whether there is a move or not, in either case, curriculum and pedagogy changes depend upon the initiative and support of the faculty involved.

6. How is supplementary instruction in the learning centers used? Include the nature of the supplemental instruction (peer tutoring, Plato, other computer use, video tapes, etc.) and how many students use it. For tutoring, what is the student/tutor ratio? How has a decrease in the number of tutors changed student interest in or satisfaction with the learning centers?

How are other modes of supplementary instruction used, such as Student Support Services and library?

What changes do you recommend? Why?
[POYATT]

7. Needs: What do you think would improve your department's ability to help students? List in order from the most needed resources down to the least needed resources. Why are the top few items the most crucial? (Examples: reduction of class size, reduction of work load, other teacher support, classroom availability, improved physical environment, air quality, meeting space, tutors, computers, books, classroom furniture, office space for adjuncts, etc.)
Everyone feels that reduction of class size is the most important.

8. Fill in the following data: (Fall 1994)
   1. a. Number of full time faculty members 15
      b. Number of adjuncts 36 (How many have desks, file cabinets, etc.? A few day adjuncts share desks.)

   2. Number of classes run each semester 83
   3. Average class size 28
   4. Number of experimental classes running 2 math express, 4 multiple repeater
   5. Average class size of experimental class 12 - 19

DRAFT

CESL Writing, Reading, and Speech Information
For the Developmental Ed Task Force
Curriculum and Instruction Sub-committee

1. Describe the developmental courses/curriculum offered by your department or unit. Include the desired outcomes of each level. What changes do you recommend? Why?

CESL has 3 levels of writing, 3 levels of reading, and 2 levels of speech available for students whose first language is not English. Student placement is based on the scores they received on the writing and reading certification exams:

Reading	Score
EL012	0-20
EL022	21-25
EL032	26-29 (Nursing and Dental Hygiene students must attain a score of 31 and above.)

Writing	Score
EL011	4 and below
EL021	5 and 6
EL031	For students who have received a grade of S in EL021

Students receive the CUNY-RAT at the end of EL032 and the CUNY-WAT at the end of EL031. However, on the lower levels, instructors are permitted to give the exams to students they feel are competent and have the capacity to pass these exams. All CUNY 3rd level exams are scored and the results are sent to the Testing Office (N103). Any CUNY exam given to students who are at lower levels other than the 3rd are screened by their instructors and only those the instructor feels have a chance of passing are scored and recorded. In order to get certification in the written exam, a student must attain a score of 8 or higher. For reading certification, however, the passing score is based on the score needed to pass that specific exam.

New reading exams have been purchased for testing of in-coming students; Form L is the new reading exam presently being used to test incoming freshmen. No new in-house exams have as yet been purchased.

Speech courses are recommended to students who are at the basic level (EL011, 012, 013) of skills or at the intermediate level of skills (EL021, 022, 203).

All CESL courses were constructed with the understanding that students had a variety of needs in order to become mainstreamed and to successfully compete for their college degrees and for jobs in the work-place. For example:

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EL011
Basic writing "provides a variety of exercises for learning English structures and applying them in the composition of well developed paragraphs. Basic composing techniques to be covered include the development of main idea statements, the elaboration of significant details and the use of signal expressions for coherence." The course objective is "to bring students' writing to a level at which they can create short, clear texts" of at least two paragraphs in length, "that demonstrate mastery of the basic tenses."

Among pedagogies at the basic level are word order, verbs, linking words, word forms, articles, punctuation, capitalization, and composing skills.
Recommended changes could be to do departmental testing of writing and reading students and then place students in specially designated sections for excellerated work or if necessary into sections where those with the lowest levels of skills functioning could be assisted. Students whose skills levels are below those generally required for College level work should probably take courses in adult education programs such as those at Continuing Ed. and not enter the College until they are proficient enough to handle College work.

Since advisement is no longer the purview of CESL but is handled by other departments, student placement has become a problem that CESL has inherited and must unfortunately deal with on an on-going basis each semester. Departmental testing, advisement, and placement of students by CESL itself would greatly assist in avoiding the phenomenon known presently as multiple-repeating of same level courses!

EL012
Basic reading "provides students with the opportunity to recognize in reading the basic structures of EL011, to develop literal comprehension and critical reading skills, to increase receptive and productive vocabulary and to engage in a variety of reading related writing activities such as summarizing and responding to study questions. The focus is on academic texts."

Due to the increasing number of "below basic level skills" students who are occasionally being admitted to the College, instructors have found it difficult to pattern exercises to suit the entire group in EL011 and EL012 classes. The recommended change to Continuing Education would greatly unburden our faculty to apply the pedagogy originally intended for theses courses!

EL013
The Basic Speech course of Applied Structures and Sounds of English utilizes classroom activities that encompass "academic and social experiences common to ESL students as a basis for presentation

drills and reinforcement of sounds and structures. Emphasis is on listening and speaking." The course objective is "to increase intelligibility in spoken English" through "word stress, syllable stress, division of words into syllables and sentences into phrases," etc.
Recommended changes would be to use the Speech Lab for this level for improved listening and speaking skills practice. The behavioral objectives for this course would have to be modified so that use of the Speech Lab could become a major part of it, the thinking here being that as students improve their language/speaking skills, they will perform better on the reading and writing certification exams.

EL021
Intermediate writing "provides for the learning of appropriate language structures, emphasizing their application in extended paragraphs on a variety of academically oriented subjects. Composing techniques from Level I are reinforced and more advanced aspects of paragraph composition are introduced, enabling students to produce more unified cohesive and well developed texts. The course objective is to have students develop from the writing of sentences to the composition of fuller texts of at least two pages (double spaced) in length." Students focus on articles, plurals, pronouns, comparative and superlative adjectives, verbs including the perfect tenses, gerunds, participle adjectives, passive voice, subordinate clauses, conjunctions, and composing skills including paragraph development with topic statement and supporting details, clarity of thought and preciseness and relevance of details, outlining, summarizing and various modes of written expression including narrative, descriptive, expository, comparison/contrast, and argumentation paragraphs, compositions, and essays.
Recommended changes would certainly be smaller class sizes. EL021 may well be the premier course in CESL due to the concentration of effort in pedagogy and the usually better placement of students who have either come through EL011 successfully or have upon first entering the college scored a 5 or 6 on the CUNY-WAT. A minimum score of 8 is needed for writing certification, and no entering student is allowed into EL031, 3rd level writing, who has a score of 6 unless s/he has successfully passed EL021.

EL022
Intermediate Reading "affords students the opportunity to read critically and increase their vocabulary through exercises based on academic texts." The structure and logical organization of the reading selections provides the basis for writing activities such as paragraph reconstruction and response to discussion questions. The course objective is to reinforce a continuum of reading skills as students continue to build vocabulary, improve reading comprehension, and maximize study skills.
Recommended changes could be to concentrate increased efforts towards certification preparation at this level as well as the 3rd level of reading.

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EL031
Advanced writing is "for students who have attained fluency in writing but need to improve and develop this linguistic skill. Writing assignments are of an increasingly academic nature and allow students to move toward meeting university competency requirements and EG101 entrance criteria. The course objective is to have successful students meet competency standards "by producing essays that are complete and coherent" with a well formulated, thesis, clearly addressed essay prompts, and logical development of relevant ideas and supporting examples and details. "At the syntactical level, successful students will demonstrate competency by producing essays that are free of gross mechanical errors and 'foreignisms' that obscure meaning.

Recommended changes would be to limit the number of these sections and impress upon faculty and advisors the importance of sending to the 3rd level writing classes only those students who have proven themselves to be competent English writers who can handle four-page (double spaced) essays and would benefit from having continued practice in these areas. However, admittedly, 3rd level writing may continue to be unwieldy as long as CESL remains heavily adjunct-staffed especially at the 3rd level.

EL032
Advanced reading is "for students who have attained some fluency in reading but need to improve and develop this linguistic skill. Progressive and systematic training in reading allows students to move toward meeting university competency requirements." The course objectives are to have "students apply a continuum of reading skills" as they continue to build vocabulary, maximize reading comprehension through increasingly challenging exercises in reading comprehension and strategic study skills for test taking.
Recommended changes would be to increase vocabulary through reading reinforcement and skills mastery of such modems as prefixes and word stems, etc.

2. What pedogogical approaches have been or are currently in use? (Examples: collaborative learning, role playing, peer tutoring, writing in math class. Do not include instructional technology here.) What changes do you recommend? Why?

CESL faculty employ a variety of pedagogical approaches within the classroom setting, including lecturing and collaborative learning especially in the writing and reading classes.
Recommended changes would be to have increased vocabularly exercises such as have been generated by trips and guided tours to functions on and off campus, for example trips to museums, concerts, and the theater, etc. Because they have not been introduced to these or have had limited experience with the arts, the sciences, etc., outside tours have been helpful in awakening interests, introducing new vocabularies and promoting cognitive and

affective learning.

3. Describe the use of the instructional technology. (Examples: calculators, computers, videos, slides, tape recorders, etc.). What changes do you recommend? Why?

CESL reading faculty have utilized novels and other forms of fiction and at the end of student analyses and investigation of these have shown films and video tapes of the novels and short stories these classes have used to improve reading comprehension and build vocabulary. Video tapes and slides of outside trips have also stimulated conversation.
CESL writing faculty have used word processors and computers for exercises in composing, and for assistance with grammar, spell checks, parts of speech, verb forms, etc. (One example is the recently purchased program for CESL grammar and speech and other areas known as PLATO presently available in the Atrium Learning Center.)

4. Describe experimental projects you now have or have had. What worked? What didn't? Why? What changes do you recommend?

CESL has been aggressive and cooperative in many aspects of experimentation in CESL classrooms and with SEEK, Student Support Services, Multiple-Repeater classes and workshops, USIP, express courses, team-teaching, and Bridge Courses, etc. All have worked when block-programming was done and, as with the express and the Multiple-Repeaters' classes, students were allowed to take the CUNY-Writing Assessment Test several times during the 6 weeks or the semester. A greater degree of success was attained when the WAT was made available more than twice during the term. Students stated that they felt more relaxed, were less afraid, felt less likely to tense-up when taking the WAT, and expressed relief that they felt less burdened because they were "given an opportunity to succeed" whereas in non-Multiple-Repeater sections they were only allowed "one chance at the WAT" which made "most students freeze" in anxiety and fear.
Recommended changes would be to re-visit allowing 3rd level Multiple-Repeaters of writing to take the WAT exam several times during the semester. These exams could always be screened by the instructors so that only those that seemed viable would be sent to be scored and recorded in the testing office.

5. Respond to the present departmental housing of developmental education programs. If this is less than ideal, what would make it better? Describe an ideal configuration.
CESL has always desired departmental status, and had the full approval of President Schwerin and the College Council in 1988. Being denied equal status or equity with other departments was, admittedly, a disappointment to CESL. Being in Developmental Skills from which it originally arose seems to be the best "other choice" to departmental status. However, the confusion that seems to have

been given rebirth due to re-placement into D.S. is the misperception that CESL is remedial rather than "a new language acquisition" program. For this reason the "ideal configuration" would be departmental status for CESL.

6. How is supplementary instruction in the learning centers used? Include the nature of the supplemental instruction (peer tutoring, Plato, other computer use, video tapes, etc.) and how many students use it.

Tutoring is used, as are Plato, the spell-check and grammar corrections on the computers in the learning centers. Video tapes of novels and short stories are used by some reading instructors as are trips to museums, the theater, etc. The student/tutor ratio is usually one-to-one except where the student is in a multiple-repeater class that has, in the past, had one or two tutors attached to it. Here, the student/tutor ratio has been four to six students to a tutor per hour.
The decrease in the number of tutors has affected student interest in the following ways: students have expressed "fear of a lack of support" for them and their difficulties in learning English proficiently. Instructors have found in some cases increased amounts of cheating by students who do not feel confident that they can succeed in the College unless they resort to this.
As regards other modes of supplementary instruction, CESL has referred students to Student Support Services for diagnosis and assistance with learning disabilities such as dyslexia. Students have been referred to the library to research outside sources, and to view, write about and discuss library exhibits during the semester. A recommended change might be experimentation with peer-tutoring with computer use such as the new Plato programs.

7. Needs: What do you think would improve your department's ability to help students?
List in order from the most needed resources down to the least needed resources.
Why are the top few items the most crucial? (Examples: reduction of class size, reduction of work load, other teacher support, classroom availability, improved physical environment, air quality, meeting space, tutors, computers, books, classroom furniture, office space for adjuncts, etc.)
Reduction of class size is the most important for writing classes especially. Study-space within the office areas of CESL and D.S. would allow students access to assistance from faculty.

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8. Fill in the following data: (Fall 1994)

1. a. Number of full time faculty members. 5
   b. Number of adjuncts 44. (How many have desks, file cabinets, etc.) A few day adjuncts share desks. None have desks, file cabinets, etc.
2. Number of classes run each semester 85-90.
3. Average class size 28 except for speech classes which have not more than 21 students per class due to the use of the Speech Lab which has 21 tape decks with headsets.
4. Number of experimental classes running 2 multiple repeater classes.
5. Average class size of experimental classes 24+.

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To: Curriculum and Instruction Subcommittee of the Developmental Skills Task Force

From: Developmental Reading Unit

Date: March 1995

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1. Describe the developmental courses/curriculum offered by your department or unit. Include the desired outcomes of each level. What changes do you recommend? Why?

Developmental Reading: The desired outcomes of the reading courses are:

DR091: Mastery of basic reading comprehension skills as measured by the Degrees of Reading Power (DRP)--a cloze style Standardized Reading Test

DR092: Certification in Reading as measured by the CUNY Reading Skills Assessment Test (RAT)

DS013: (For Nursing and Dental Hygiene students only.) Three criteria: 70% on final exam based on course content; Certification in Reading; 12th grade reading level on the Nelson-Denny Test.

Developmental Reading courses are designed to provide students with the reading/thinking and study skills necessary for the demands of college level work in their major departments and general education courses. Students are taught strategies to help them understand, extract and retain information from a text. In ideal circumstances, the processes of valuing, being interested in, and being able to apply ideas and concepts are explored and practiced.

The faculty provide a wide range of intensive reading experiences which many students have not received during their secondary school education. Skills and strategies are taught holistically, rather than individually, integrating many concepts at each of the two levels. DR092 provides higher level reading strategies for students whose scores on the incoming CUNY RAT place them at the ninth grade or higher. DR091 provides more basic reading strategies for students testing below this level. DS013 provides specialized reading strategies for Nursing and Dental Hygiene students and requires a 12th grade reading level for exit, as specified by these programs' state requirements.

The developmental reading program has been hampered by several problems: The original CUNY Reading Test was altered to provide more time, lowering reading standards. and answers were widely available in the University community. A new exam has been instituted, but the old exam is still used for certification after initial testing. Focus on standardized assessment has been a distraction from the richer, more complex nature of the curriculum and creates a tension in the course where students tend to focus on the standardized test to the detriment of other aspects of the program. The reading faculty have devoted considerable energy in search of a more appropriate standardized instrument for evaluating students. Recently, alternative grading procedures have been considered which would include students work on assignments during the semester as part of the requirement for passing the course.

The separation of reading and writing programs in 1976, when writing was placed in the English department has hampered the coordination of the teaching and learning of these language skills. Often, because of placement problems, it was difficult to ensure that students who needed both reading and writing courses took them at the same time. Experimentation with coordinated reading and writing sections has been proposed and tried many times, but often failed because of the inability to register students appropriately into the coordinated program.

Recommendations

Although the use of the old exam with extended time reduced the number of students repeating the second level reading course, there are still students who need more time to complete reading than the three hour courses allow. The research and conclusions of the 1990 proposal to revise the Reading curriculum remain valid. The proposal advocates three levels of reading with more hours offered for levels I and II. Also, there remains a need for additional course offerings for students who could complete reading in one semester if they were provided with additional hours of instruction per week. In the fall 1994 semester, such an experiment, with 15 students in the class, proved highly successful. Experimentation with this type of "express" DR091-DR092 course provides evidence of the value of intensive approaches predicated on more hours of instruction and smaller class size.

2. What pedagogical approaches have been or are currently in use? What changes do you recommend? Why?

DR faculty believe that developmental education has the task not only to raise skill levels but also to prepare students for their roles as informed and active participants in college, career, and society. To accomplish these goals, we

employ a variety of pedagogical approaches and materials within the classroom setting. New concepts are followed by extensive class discussion involving collaborative learning, metacognition, role playing, and writing. Faculty share successful teaching strategies and materials; we are respectful of each other's pedagogical style and proud of the variety of materials and educational experiences we offer to students.

The present enlarged class sizes limit the degree of individual assistance that teachers can provide. Class size has seen a steady increase during the last 15 years. The original concept for the developmental programs included extensive individualized instruction. Class sizes were fewer than 20 students and tutors were employed in many classes. During the past ten years, class size has grown from 20 - 22 students to classes which average 26 - 30 students.

Recommendations:

Coordination among reading, writing and speech instruction

Co-programming of reading classes with credit courses that developmental students can take (Voice and Diction, Logical Thinking, African Folklore, Consumer Health) etc.

Collaborative assignments/lessons on the model developed years ago with health education and introduction to accountancy

Irene Martin's work with Legal Studies as a model for other career programs

An introduction to the library which emphasizes reading for pleasure and general background information.

Special reading sections where the topics relate to professional interests and aspirations

3. Describe use of instructional technology. What changes do you recommend? Why?

Computer assisted instruction may be useful in some contexts when the software is selected by the instructor for a specific purpose. So much of the software, supposedly designed for college students, is an insult to students and instructors. An example of such belittling material is the misnomered program PLATO.

The focus of developmental reading is to engage students in thought- provoking discussions based on their reading. Written responses to assignments using word processing would be terrific but only if each student had access to a computer.

4. Describe experimental projects you now have or have had. What worked? What didn't? Why? What changes do you recommend?

Since the early 1970s Developmental Reading has been in the vanguard in creating experimental programs. Special courses have been offered for multiple repeaters of DR092. In fall 1994 and spring 1995 we offered an express course that combines DR091 and DR092 in one semester for a small group of eligible students. Before that, an accelerated DR092 course was offered for students who were within 3 points of passing. These students benefited from increased hours of instruction and classes where students' abilities were not so diverse. The negative results for the accelerated DR092 class were that those who did not pass lost their initial enthusiasm and interest and could not enter EG 101 at mid semester.

Other highly successful coordinated programs include: Reading in Action, in which DR092 students tutored children at an after school center on a regular basis throughout the term; various theme based DR courses; DR linked to courses such as African American studies, allied health, technology, and writing. One project linked math, reading, technology, and writing.

The Parent Readers Program, ongoing since 1987, is a nationally recognized program. Three workshops each semester are offered to developmental reading students followed by a family reading celebration, held on a Saturday, and attended by the participants and the child(ren) they have been reading to. Students who attend become reading resources to a child or a group of children. The participants often say their interest in reading was tapped through the program. A further positive outcome is that students come to value reading, reading strategies, discussion questions, and sharing books. Their confidence and sense of being serious college students take shape and reading becomes a habit they want to pass on.

All of the above experiments have been deemed successful. Please see the project descriptions for full details.

5. Respond to the present department housing of developmental education programs. If this is less than ideal, what would make it better? Describe an ideal configuration.

IF DEVELOPMENTAL READING REMAINS IN THE DEVELOPMENTAL SKILLS DEPARTMENT:

Do not change the current housing of developmental skills but let's see a commitment during registration to a few coordinated programs such as: bring back DR's support course for legal studies; let's try back to back classes of DR and DM or DR and EG with time built in for the instructors of those coordinated classes to meet to discuss students' progress.
Return developmental writing instruction to the Developmental Skills department, combining with reading and CESL programs. That is, all developmental education should be housed together.

IF DEVELOPMENTAL READING IS MOVED INTO THE ENGLISH DEPARTMENT:

Insure the integrity of commitment to developmental skills students.

Insure the integrity of the reading program.

Proximity or nomenclature does not provide better pedagogy; however, providing faculty with time to develop coordinated curriculum and time to meet to discuss lessons and expectations of students would insure excellent pedagogy.

6. How is supplementary instruction in the learning center used?

Use of the learning lab was very successful in the days when the reading and math learning lab was housed closer to the department and staffed by well trained, often professional tutors. One feature of the present learning center that is outstanding for developmental skills is the impressive number of our past students who work or did work in the lab. Unfortunately, many tutors' hours have been sharply curtailed or cut altogether recently. They are among the most sought after tutors and mentors for other students.

How are other modes of supplementary instruction used, such as Student Support Services and library?

Students who are thought to have learning disabilities are referred to Student Support Services but their resources have been so severely reduced it no longer seems useful to send students there for assistance, such as tutoring, diagnosis, etc. It is, however, a place where certified learning disabled students are offered

extended time to take exams. Each semester such arrangements are made for those students.

Recommendations

Hire or train someone who can test students for suspected learning disabilities and/or make appropriate referrals to caring, competent professionals.

7. What do you think would improve your department's ability to help students?

Offer more levels of reading and increase hours so that students will meet with success and move quickly into higher levels of reading. (See DR's Three Level Course Proposal).

Reduce class size and teaching load (12/12) so that students will receive the individual attention they need.

Offer one to three credits for developmental reading courses.

Insist on a positive attitude on the part of administrators, educators and students concerning the value of developmental skills classes.

Provide a place for faculty to meet with students--better office facilities with better air quality lighting, etc.

Establish a more intellectual atmosphere in the college in general.

Install accoustical ceilings in classes and offices.

8. Fill in the following data: (Fall 1994 semester)

1a. Number of full-time faculty:
DR = 11

1b. Number of adjunct faculty:
DR = 9

2. Number of classes:
DR = 49

3. Average class size:
DR = 26

4. Number of experimental classes:

DR = 1 + 1 MR

1 special reading course for legal assistant students was planned but did not run

5. Average class size in experimental classes:

15 students in DR091-DR092 express course.
12 - 19 students in Multiple Repeater sections.

NEW YORK CITY TECHNICAL COLLEGE
of the City University of New York

College Learning Center
Room AG 18
(718) 260-5874

Date: April 6, 1995

To: Developmental Education Task Force Members

From: Marge Poyatt, chair of student subcommittee

Subject: Analysis of student survey

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Of the 366 students who answered the question, more than 2/3 indicated that following their admission to City Tech and before registering they were aware of the importance of the CUNY assessment tests in placing them in developmental or college-level courses. Eighty-three percent say they were placed in developmental courses in their first semester and nearly 75% thought their placement was correct.

Grade point averages of the respondents as self reported ranged from 1.0 to 4.0 with a mode = 3.0.

The responses to the question "What did your developmental course instructor do that most helped your learning?" indicated the following seven issues (out of 14) as those highest in order of importance:

Provided clear explanations of the subject
Answered my questions clearly
Provided concrete examples
Assigned and checked homework regularly
Provided support and encouragement
Required class work on specific problems
Insisted on strict attendance
Helped me to think critically

In response to the question "What could the instructor(s) have done to improve your classroom performance?" the students marked most frequently:

Provide more classroom practice
Provide clearer explanations
Demonstrate more care and concern
Increase tutoring in the learning center

By almost twice as frequently as the other responses, students indicated inadequate high school preparation as the biggest challenge in completing their developmental courses. After that the two having next and most equal responses were poor study skills and

poor study habits. The next two were inadequate English language skills and insufficient investment of time.

The students indicated selecting more effective teachers, encouraging more student-teacher interaction, providing more tutorial support and enrolling fewer students in each class as actions the college could take in helping them to succeed in developmental studies.

Forty percent of the respondents indicated they spent 2-4 hours a week on average studying for each developmental course outside of class. Twenty-eight percent spent under two hours per week. Thirty-two percent spent more than four hours a week.

When they are enrolled in college 35% of the respondents are not employed; 38% claim they work 20 or more hours per week and 27% under 20 hours per week.

Inadequate information about coding has so far prevented me from analyzing responses to other questions.

New York City Technical College

the City University of New York

2/95

STUDENT SURVEY

1. Following your admission to City Tech you were asked to take a series of CUNY assessment tests before registering. Were you aware of the importance of those assessment tests in placing you in developmental or college-level courses? (Check one)

   243 Yes 123 No

2. On the basis of those tests were you advised to enroll in college-level or developmental courses your first semester?

   365 Yes 54 No

3. In your opinion, was that placement correct for you?

   Yes 276 No 25 If No, check one 35 Course(s) too easy 15 Course(s) too difficult

4. What was your grade point average (GPA) at the end of your first semester at City Tech? (Please place a check on the following scale at your GPA)

49	24	67	29	110	42	54
D		C		B		A
1.0		2.0		3.0		4.0

5. What did you learn about the academic expectations and demands of college during your first semester at City Tech? (please check one in each pair or grouping)

   265 College was harder academically than high school
   40 High school was harder academically than college

   _____ High school courses demanded more homework
   _____ College courses demanded more homework

   313 College expected me to study many more hours outside of class
   24 High school expected me to study many more hours outside of class

   _____ College expected me to recall course material
   _____ College expected me to analyze, examine and interpret course material on my own

   266 College expected me to explore and discuss ideas
   55 College expected the acceptance or adoption of ideas

   _____ College expected more personal responsibility from me
   _____ College provided assistance from me

   _____ Other: _____

If you have never enrolled in a developmental course, please go to question 13; if you have enrolled in a developmental course, please continue with the next question.

6. Which developmental courses have you taken and, if necessary, repeated? (Identify the courses that you have taken and the number of times you have taken them)

Mathematics:	_____DM055	_____ DM065		
Reading:	_____DR091	_____ DR092		
Writing:	_____EG091	_____ EG092		
CESL	_____EL011	_____ EL012	_____ EL021	_____EL022
CESL	_____EL031	_____ EL032	_____ EL013 (Speech)	

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7. What did your developmental course instructor(s) do that most helped your learning? (Check all that apply)

- 158 Assigned and checked homework regularly
- 147 Provided support and encouragement
- 216 Provided clear explanations of the subject
- 89 Encouraged small group work and support
- 171 Provided concrete examples
- 178 Answered my questions clearly
- 41 Related the skill to my interests or major
- 144 Required class work on specific problems
- 97 Identified and addressed my individual needs
- 77 Provided help outside of class
- 129 Insisted on strict attendance
- 95 Helped me see the relevance of my coursework
- 125 Helped me to think critically
- 20 Other: ____

8. What could the instructor(s) have done to improve your classroom performance? (Check all that apply)

- 93 Demonstrate more care, concern, and support
- 118 Provide clearer explanations
- 130 Provide more classroom practice
- 26 Require and monitor attendance
- 50 Require more homework assignments
- 91 Review homework assignments
- 99 Increase tutoring in the Learning Center
- 56 Make computerized instruction available
- 55 Form outside study groups
- 13 Other: ____

9. From your experience, what was your biggest challenge in completing your developmental course(s)? (Check one or two that most apply)

- 91 Inadequate high school preparation
- 59 Poor study skills
- 56 Poor study habits
- 31 Inadequate motivation
- 23 Inadequate personal discipline
- 25 Unsatisfactory classroom instruction
- 39 Inadequate English language skills
- 39 Insufficient investment of time
- 9 Irregular attendance
- 21 Course unrelated to major or interest
- 8 Other: ____

10. What could the College have done to help you succeed in your developmental studies? (Check all that apply)

- 62 combine reading and writing into a single course
- 23 add 1 to 2 hours of classroom instruction each week
- 96 enroll fewer students in each class
- 77 increase instruction in the Learning Center
- 99 provide additional tutorial support
- 38 fewer hours of classroom instruction and more study time
- 50 provide computer-assisted instruction supplements
- 78 increase interaction among students in the classroom
- 61 improve instructional texts and materials
- 105 select more effective teachers
- 102 encourage more student-teacher interaction
- 8 other: ____

11. Which developmental course has been most helpful to you and why?

Course: DMC[illegible] (63), EG[illegible] (30), DR[illegible] (11)

Reason most helpful: ____

D-4

12. If you have completed your developmental studies, how well were you prepared to learn in college level courses required for your degree program?

150	Very well prepared, especially in:	_____reading	_____writing	_____mathematix
72	Adequately prepared			
23	Barely prepared, especially in:	_____reading	_____writing	_____mathematix
11	Poorly prepared, especially in:	_____reading	_____writing	_____mathematix
12	Not sure			
3	Other: _____			

13. In what ways were you well or poorly prepared (check all that apply):

_____ Solving problems
_____ Examining and understanding course material
_____ Writing papers and reports
_____ Applying knowledge
_____ Preparing for examinations
_____ Studying for class
_____ Taking tests
_____ Other, please specify: _____

14. How many hours per week did/do you spend on average studying for each developmental course outside of class:

95 Under two hours
143 Two to four hours
55 Five to eight hours
31 Over eight hours

15. When you are enrolled in college, you are employed the following number of hours per week on average:

103 Not employed
36 Under 10 hours
70 Ten to twenty hours
51 Twenty to thirty hours
68 Thirty to forty hours
19 Over forty hours

16. In what ways do you learn best? (Indicate the top three by placing a 1, 2, and 3 next to the appropriate items)

210	Lectures	132	Small groups in class
236	Discussion	52	Independent projects
133	Isolated study	53	Experiments
42	Computer-assisted	72	Study groups outside class

17. Through what methods do you learn best? (Check all that apply)

210	Reading	163	Writing
265	Listening	121	Speaking
207	Watching	199	Doing
0	Other: _____		

18. If you could improve the City Tech learning environment, what would you change?

_____
_____
_____
_____
_____
_____
_____

Please return the completed survey to your instructor. Thank you.

STUDENT SURVEY: OPEN-ENDED QUESTION ANALYSIS

For the Developmental Education Task Force

by David Entin April 1, 1995

The Developmental Education Task Force drafted a detailed, two-page survey with 18 questions to receive student feedback primarily on developmental education. The survey was administered in eight randomly selected introductory social sciences courses the first week of March, 1995. A total of 372 students completed the survey. The first seventeen questions of the survey yielded primarily quantitative data. The final question, however, was open-ended, and asked, "If you could improve the City Tech learning environment, what would you change." 131 students took the time to respond in writing to this question. By far the most comments were about faculty and pedagogy. But students also wrote significant comments on academic support, class size, academic policies, student affairs, and administrative concerns. Below is a narrative analysis of the 131 comments.

The largest number of comments, thirty-two, were about faculty, and essentially faculty attitudes. Students offered a few major gripes about faculty. Students complained loudly about faculty who do not seem to care about their teaching. "Get rid of professors who do not want to be here," and "cut the hours of many professors who are burned out due to many years of teaching," were two typical comments. Students want teachers who are supportive and invested in their work, not those who "just don't care." There were a few complaints about boring and uninteresting faculty. The primary concern was in having faculty be "more attentive to meeting students' needs" and taking the time to be patient and answer students' questions. One written remark provided a harsh summation of these comments, "replace professors who are here just to collect a paycheck." One final comment expressed well the feelings of many students:

> "If I could improve City Tech, I would remove all instructors that don't have the patience or the time to explain what they are talking about and the ones that always have something smart to say when a student is trying to ask for help."

Twenty-three students made recommendations for improvement of pedagogy. The most popular suggestions from survey respondents were greater student participation in classes, taking more time to explain material carefully, and greater use of examples and hands-on applications. At least four students asked faculty to help students form peer study groups ("I feel students learn and study much better in groups"). Other ideas from two or three students included: greater use of essay examinations rather than multiple choice tests, more review of and comments on homework, more effective lectures, and greater accessibility of faculty both in

and outside of the classrooms. Four students called for greater faculty-student interaction.

Interestingly, a number of students in different ways called for improved academic standards, including not passing students who failed to master all the course material satisfactorily. Other specific pedagogical suggestions included not to use microfilm during lectures, more independent projects, changing examination questions from year to year, and stopping students from walking in and out of the classroom "while the professor is teaching." A few students proposed improvement of new student orientation with workshops on study skills and clearer statement of the expectations of the major.

Sixteen students called for smaller, less crowded classes and an improved student-teacher ratio. There were three curriculum suggestions, including more writing and spelling, and combining DM065 and MA175, and DR092 and EG092. Seven students were not pleased with class scheduling, wanting more classes available in the evenings, weekends, and summer, more class meetings per week, and elimination of "big breaks" between classes. In the area of policy, students called for limited opportunities to repeat courses, lowering course absence limits, and more leniency in lateness enforcement for evening working students.

In the areas of academic support, fifteen students wanted more tutors, and a dozen wanted an expansion of Learning Center and Library services, particularly hours open. Four students asked for more computers and laboratory equipment. Three wanted the library to "make students be quiet." Six students offered specific written comments on developmental education, such as extending DM065 for two semesters and counting work for the entire semester toward the final grade, rather than the single pass or fail assessment test.

There were only two comments about fellow students: "friendlier with each other so they could study together"; and "less talking in class from students who don't appreciate the value of knowledge." There were a number of comments on admissions, financial aid, the bursar's office, and particularly the "terrible" registration. Most complained about rude and "nasty" treatment and asked for "more considerate behavior." One suggested, "Have college employees take a courtesy course." There was only one complaint each about the elevators and cafeteria food. Three students commented that "administrators" should show more concern for students. Five students were not satisfied with the level of cleanliness and classroom physical conditions. Only three students complained about cost (tuition, textbooks, fees). One general suggestion was, "I would make it more personal; sometimes I feel like a number." All of these comments provide useful feedback for the college community to consider.

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From the desk of
Regina Robin - FLYP
N 602B x 5082

April 12, 1995

To: Dean Entin
From: Regina Robin
Re: Task Force - Pre College Committee Report

The Pre-college Committee addressed itself to several issues that resulted in the following recommendations:

1. Reconsider admission policies so that we are actually recruiting students who have some hope of success in a technical college. This would assume, first and foremost, some proficiency in mathematics.

2. Recruitment should reflect the programs that actually offer the student some hope of job placement once the student has completed the course of studies. We need to make explicit exactly the career opportunities the training makes available as well as our success rate in placement.

3. Students who come to us needing excessive remediation i.e. more than two semesters, should be advised to seek more remedial assistance at a local EOC or some center that addresses itself to the issue. This might include enrichment options within some pre-college work and alternatives in continuing education. We should make our policy on repeating remedial courses quite clear. We should make sure the student understands the risk factor in evading or dropping remedial courses. This should be explained in terms of both academic progress and financial aid expectations.

4. Students needing remediation should be strongly advised, and made aware of the financial and educational advantages of taking part in the University Summer Immersion Program.

5. The first contact that the student have with the college, the day of testing, should include some faculty as well as the individuals from testing and advisement. Some faculty-student interaction would lessen the stress of coming into the school just to be tested. It might be more beneficial to have a test in the morning, a break with departmental faculty, lunch and then the second battery of tests. It is suggested that given our quality of students, the stress factor may account for 15- 20% of the failure rate.

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NEW YORK CITY TECHNICAL COLLEGE
of the City University of New York

College Learning Center
Room AG 18
(718) 260-5874

Date: April 10, 1995
To: Dean Entin
From: Marge Poyatt, chair, student subcommittee
Subject: Final report to DET:

++

Over the past six years only 12-20% of the registered freshmen have been certified in all three areas, (reading, writing and math), at entrance testing. The remainder, a large portion of the student population are required to register in (a) developmental courses(s). Results of a student survey, (372 students in introductory social science classes), and of student focus groups, (approximately 16 students), indicate a number of student concerns. There was an amazing overlap between these two groups.

According to these students, instructors of developmental courses should: be enthusiastic, exhibit care and concern, take sufficient time to clearly explain topics in class, give hands on practice, refrain from offering demeaning replies to student questions, and be willing to take time outside of class to answer questions.

Although a majority of students who responded to the survey indicated they knew of the importance of the CUNY assessment tests after being admitted to NYCTC and before registration there were some survey respondents and focus group participants who asked that: more information be given early on about the importance of the non-credit developmental courses for success in and admittance to career area work; clear guidance and direction be given in the importance of taking consecutive courses with out delay, i.e. MA 175 right after DM065; and some attempt be made to integrate subject matter with the skills especially in reading courses. Students also asked that developmental reading and writing be combined.

In the realm of classroom management they asked that: attendance rules be enforced, students be prohibited from walking in and out of class during lecture, students not be passed out of a course unless they know the required work, and the rules for limit on repetition of developmental courses be enforced.

Some students asked that entrance requirements for CUNY be based on more stringent guidelines than the CUNY assessment tests. More than one quarter of the survey respondents indicated their biggest challenge in completing developmental courses was inadequate high school preparation. Large numbers also indicated that poor study skills and poor study habits were contributing factors. Students

asked for: smaller classes, workshops in study skills and note-taking, help in forming study groups, more opportunities for tutorial assistance and more hands-on computer practice.

The experience of members of the subcommittee on students indicates that a successful developmental student: be self-motivated, i.e. take personal responsibility for success; have good study, note-taking and attendance habits; realize the importance of developmental courses to success in their total education and in their career areas; and spend sufficient time outside of class studying, doing assignments and using the support services available.

Recommendations:

1. Student orientation should be reformulated to stress the importance of the CUNY assessment tests and the importance of developmental courses.

2. AA101 or some substitute should be required of all new freshmen. Part of this effort should be an attempt to inform the students of the nature of the work opportunities available and the course work necessary for their chosen career field. Workshops in study skills, note-taking and techniques for forming study groups could be included. Perhaps successful students could be recruited to make the importance of these believable. Workshops on the importance of self-motivation might also be included.

3. A program of faculty development should be presented to sensitize the developmental education faculty of the importance of exhibiting care and concern for the developmental student and to stress the importance of demanding high standards of effort and achievement from these students.

4. Developmental class sizes should be controlled and savings instead could be made by limiting the number of times a student may repeat a developmental course. Rules such as the 12 credit limit should be enforced so that students complete required developmental work early in the college career. Developmental courses should be offered for shorter time intervals and more frequently during the week to give the students opportunity to absorb new ideas. When students do repeat a developmental course it may be more appropriate to give these students a different treatment. Perhaps more hands-on work directed at the areas of weakness.

5. A greater integration should be attempted with the developmental classes and the services of the learning center so that use be maximized for the developmental students. This will require administrative support for faculty release time and tutorial assistance. This sort of integration would be even more important if the suggestion above for varying the mode of delivery of material be used for students repeating a developmental course.

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Recommendations from the Testing Sub Committee of the Developmental Task Force

The charge of this subcommittee was to explore the following:

- analysis of testing instruments in light of freshman academic program needs.
- consideration of recommendations for changes in testing policy.
- consideration of New York City Technical College use of CUNY tests compared with other four year CUNY institutions, CUNY requirements and the purpose of tests for City Tech policy.
- data gathering on developmental education such as initial placement, progress of students, passing rate on subsequent testing, multiple repeaters, student and faculty perceptions.
- examination of testing results over time.

From our data gathering, interviews, and discussions the committee has formulated the following suggestions and recommendations:

1. Should we continue to use the WAT, MAT and RAT for placement?

   The WAT, MAT and RAT were not created as placement tools. In addition, the WAT is expensive to use because it requires readers to score it. In light of these facts, the majority of the committee questions whether these tests are the best instruments available for placement purposes today and suggests that supplemental instruments be investigated. The committee notes that these tests are currently required of all entering CUNY freshman.

2. What criteria should be used for exit from remediation?

   The committee recommends that exit from remediation should in part, be based upon passing of the appropriate CUNY assessment test. In addition, an instrument reflective of tasks that students will be asked to perform in credit bearing courses should be created and administered. The committee suggests review of the developmental math exit test from DM 065.

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3. Do incoming students understand the importance of the placement tests?

   The committee acknowledges that the college catalogue clearly states the importance of the placement test in regards to student progress and eventual graduation. However, we feel that for students to understand truly the importance of these exams, an orientation should be scheduled before taking placement tests. During this meeting, the student's responsibility for remedial work could also be outlined and stressed.

4. How are students bypassing their placement requirements?

   The committee is concerned by the fact that many students disregard their placement in remediation and are able to register for credit bearing courses. Better means need to be found to prevent this.

5. How are students to appeal placements they feel are incorrect?

   The committee concluded that existing mechanisms addressing appeals from students who feel they have been misprogrammed because of their placement scores require strengthening and administrative support.

6. The committee feels that students must meet clear standards, set by the developmental skills departments to exit remediation. These standards must equal or surpass existing exit criteria and articulate with CUNY requirements.

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Developmental Education Task Force
Draft of A Summary of Recommendations from the Curriculum and Instruction Subcommittee
Michele Gage
April 15, 1995

Note: This summary does not include every recommendation made in the previous subcommittee reports.[1] Rather, it combines many of the ideas that have been mentioned repeatedly by faculty and student focus groups and other subcommittees as they relate to curriculum and instruction of developmental education.

I. Curriculum and instruction would benefit from a more coordinated approach to developmental education. Coordination could include:

a) A strong reading-writing connection. Some skills overlap and would be reinforced by the connection. Writing would take advantage of the broader content base students develop in reading. Writing would give reading students more opportunities to develop and use technical vocabulary and critical thinking. Readings and writings could be related to typical courses that most students later take, psychology, for example. Writing could also be related to the types of writing needed in future (major) courses.

b) Placement for all developmental students in AA101, or a similar course to help them learn study skills, time management, academic expectation, career exploration. "How to succeed in college" needs to be taught explicitly; it can not be assumed that students will absorb these skills independently.

c) A more organized approach to advocating for the developmental skills student. (A more holistic approach.) At this time, no one looks at the whole student until a crisis arises. (Then it is usually left to P. Deraney.) A "house" approach, or division, or department (or other appropriate category) would involve advisors, counselors, instructors working together from the beginning of the student's college career.

II. Curriculum and instruction would also benefit from instituting, upgrading, or expanding successful models:

a) Supplemental instruction. This is currently used and recognized successful throughout the country, at other branches of the City University, and in BY301 (A&P) at the college. Students are taught in groups how to work together as an integral part of the course structure. The group leaders are previously successful students who have been trained as mentors. The best place to do this is in the pivotal course for college or career major. At this school, DM065 is the likely course.

b) Immersion model. Small classes with many resources (tutoring, counseling, free books, selective placement) and singular focus appear to be effective for selected groups in the summer. These could be (and have been) used during the semester. It is important to note that singular focus is not the only element involved.

c) Qualification exams prior to CUNY exams as final exams. DM065 has used these successfully. This could be used in writing and ESL, possibly with a portfolio. A student would have to "qualify" to take the WAT as a final

[1] See appendix

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exam by submitting a writing portfolio of a range of appropriate types of writing. An assessment rubric would need to be developed.

d) Placement models. Exploration of an alternative to the WAT for the placement of ESL writing students.

III. Other considerations that could benefit curriculum and instruction

a) Exploration of ways to involve the learning center more directly with curriculum and the appropriate support to do this.

b) Exploration of ways for the developmental skills faculty and major department faculty to get and give meaningful feedback.

c) Faculty development should tap in to the reality that faculty cares in order to find ways to improve their effectiveness. This includes pedagogy and materials.

d) Recognition that students are the focus of all this. They need time, personal attention, realistic feedback and encouragement to develop their potential at the college.

e) Recognition that we have not found and there may not exist a magic technology. a best method, an ultimate placement exam or curriculum that can be proven to create successful students from underprepared students quickly and cheaply.

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ENTRANCE TESTING RESULTS
REGISTERED FRESHMAN

Year - Term		Satisfied Proficiency	Failed Math	Failed Reading	Failed Writing
1987 Fall					
	Number	387	1571	1287	1601
	Percent	15.3%	62.39%	51%	63.5%
1990 Fall					
	Number	282	1408	1095	1358
	Percent	12.6%	63%	49%	61%
1991 Fall					
	Number	252	1347	1088	1323
	Percent	11.9%	63.9%	51.6%	62.7%
1992 Fall					
	Number	503	1446	845	1515
	Percent	19.2%	55.2%	32.2%	57.8%
1993 Fall					
	Number	675	1896	1149	2007
	Percent	20.5%	57.6%	34.9%	61.0%
1994 Fall					
	Number	364	1396	1263	1337
	Percent	15.9%	60.1%	54.4%	57.7%

Percent of credits and hours devoted to remedial and compensatory course work
New York City Technical College 1983-1994 (some years' data missing)

Year	Remedial	Compensatory	Total contact hours	% rem/comp	Total credits	Credits +rem hrs	% rem/com
1983	30524	1896	172907	18.75%	111006	143426	22.60%
1984	28760	1854	160558	19.07%	102387	133001	23.02%
1986	26309	1490	145797	19.07%	93047	120846	23.00%
1987	23497	1466	133082	18.76%	84909	109872	22.72%
1988	25079	1533	136585	19.48%	87113	113725	23.40%
1989	27464	1762	144555	20.22%	92188	121414	24.07%
1990	26830	1755	142502	20.06%	91152	119737	23.87%
1993	26311	1076	142863	19.17%	92932	120319	22.76%
1994	26797	1333	146195	19.24%	95692	123822	22.72%

APPENDIX H

Pass Rates for Developmental and CESL Courses

	Percent S		Percent R		Percent W		Percent WU		
	Sp	**Fall**	Sp	**Fall**	Sp	**Fall**	Sp	**Fall**	Total Enrolled
DM055	51%	**52%**	22%	**24%**	6%	**3%**	20%	**19%**	**448** 394
DM065	39%	**40%**	35%	**39%**	5%	**4%**	17%	**16%**	**1613** 1474
DM total	41%	**42%**	31%	**36%**	5%	**3%**	17%	**18%**	**2122** 2062
DR091	61%	**55%**	23%	**29%**	4%	**2%**	11%	**12%**	**380** 296
DR092	60%	**70%**	26%	**18%**	2%	**2%**	11%	**8%**	**769** 552
DR total	60%	**65%**	25%	**22%**	3%	**2%**	11%	**9%**	**1194** 857
EG091	58%	**55%**	25%	**28%**	5%	**2%**	11%	**12%**	**222** 233
EG092	40%	**39%**	45%	**46%**	4%	**3%**	11%	**10%**	**1549** 1045
EL011	51%	**52%**	44%	**42%**	6%	**3%**	2%	**2%**	**358** 302
EL012	85%	**79%**	13%	**18%**	1%	**2%**	2%	**1%**	**282** 130
EL013	66%	**72%**	20%	**23%**	5%	**4%**	10%	**1%**	**119** 111

	Spring '94		Fall '94						
	Percent S		Percent R		Percent W		Percent WU		
	Sp	Fall	Sp	Fall	Sp	Fall	Sp	Fall	Total Enrolled
EL021	56%	63%	35%	29%	3%	4%	5%	4%	381 411
EL022	74%	74%	20%	19%	2%	3%	3%	3%	225 219
EL031	32%	31%	60%	62%	4%	3%	3%	3%	320 357
EL032	69%	69%	29%	29%	1%	1%	1%	1%	202 301
EL total	53%	57%	32%	33%	3%	2%	3%	3%	2030 2046

MULTIPLE REPEATERS PROJECT: FINAL REPORT

by David Entin, Dean, Arts and Sciences June, 1995

I. INTRODUCTION

The Multiple Repeaters Project began in the Spring of 1994 and has continued for three semesters. The purpose was to identify and help students who had repeated developmental education courses more than twice and were still not fully certified. Students were placed in special sections that included assigned tutors and notification that this was their last opportunity to take the course in order to become certified. Students were required to sign a written statement indicating their understanding of this arrangement and agreement to attend all classes on time and apply themselves diligently to mastery of the material. Students also completed a written questionnaire about themselves for the project. The goal of the Multiple Repeaters Project was to provide sufficient support and motivation for the participating students to pass the remaining CUNY Skills Assessment Test. Students who failed again were to be dismissed.

II. SPRING, 1995

Separate reports have been written at the conclusion of the fall and spring 1994 semesters on the results of the Multiple Repeaters Project (See attached). A smaller number of students participated in spring, 1995: 86. However, the pass rate of 61.6% was the highest achieved in the three semesters of project operation. There were two sections of EG092 and EL031 and one section of DM065, with the following results:

Course	#Students	% Pass
DM065	13	53.8%
EG092	32	75.0%
EL031	41	53.7%
Total	86	61.6%

The biggest problem was placing multiple repeaters in the designated sections, with considerably lower placement success than in the two previous semesters. Relying on the academic advisement system was not as effective as using stop codes on the computer for ensuring placement of multiple repeaters. Disposition of the thirty-one students who did not pass was as follows:

4 = already dismissed by Registrar for academic reasons
14 = dismissed by Dean of Arts and Sciences
10 = encouraged to take one last time in Summer, 1995
1 = not yet a multiple repeater
2 = awaiting action by Division of Engineering Technology

Attached is the final detailed statistical report for the Spring, 1995.

III. OVERALL RESULTS

Overall the Project was a success. 253 out of the 466 participating students passed their course and achieved CUNY certification. The certification rate of 54.3% is considerably higher than the 40% who initially pass upper level developmental mathematics and writing, above the 32% who pass the third and final CESL writing course, and much higher than the 20-30% who pass on their second, third, and fourth attempts. In addition to the 253 students who passed, over one hundred students who failed were dismissed for academic reasons by the College or, more likely, the Dean of Arts and Sciences. To date only one multiple repeater has appealed a dismissal, and this appeal was rejected by the Committee on Course and Standards.

The results varied each semester, especially by subject. However, over time a mean slightly in excess of fifty percent emerged, as the following summary data indicate:

Semester	Total	# Pass	% Pass
Spring 94	187	107	57.2%
Fall 94	193	93	48.2%
Spring 95	86	53	61.6%
Total	466	253	54.3%

	Spring 94		Fall 94		Spring 95		Total	
Course	#'s	%	#'s	%	#'s	%	#'s	%
EG092	23/67	34.3%	38/64	59.4%	24/32	66.7%	85/163	52.1%
DM065	41/67	61.2	29/62	46.8%	7/13	53.8%	77/142	54.2%
DR092			5/12	41.7%			5/12	41.7%
EL031	43/53	81.1%	21/55	38.2%	22/41	53.7%	86/149	57.7%

A little over two hundred of the 466 students in the experiment were taught by part-time faculty, whose rate of success was 11% higher than full-time faculty. In addition, the withdrawal rate in classes taught by adjunct faculty was only 3.4%, compared to 15.3% by full-time faculty. The overall withdrawal rate in the project was below the normal W/WU experience in these developmental education classes.

The biggest single problem with the project was enrolling eligible students, i.e., corr placement. It proved quite difficult to both identify and place multiple repeater students in separate sections. Employing stop codes on the computer system proved considerably m effective than informing and relying on the normal advisement process.

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Three hundred and one students were surveyed over the life of the project. An analysis of the questionnaire results indicates that the students tend to assume personal responsibility for their previous failures. The most important reason listed for not passing in prior attempts was "did not study enough." Twice as many respondents selected this choice as any other reason. Other important reasons were: personal or family problems, insufficient attendance, inadequate academic preparation, and unable to understand the material. The number one choice of "help needed to succeed" by survey respondents was: "taking the course seriously." Other popular selections in the help for success category were: utilizing tutors, regular attendance, improving study habits, and having understanding teachers. Nearly three-quarters of the students stated they had some computer experience, and slight over half live with their parents.

The surveyed students were asked the number of hours per week that they worked f pay. It was perhaps surprising that fully one-quarter of the students do not work at all. Another quarter are employed thirty or more hours per week and should be part-time students. The remaining fifty percent work part-time, from ten to thirty hours per week.

It was felt that the primary reason for the success of the Multiple Repeater Project w forcing the students to focus on the course by requiring a signed contract, keeping strict attendance, and not allowing additional opportunities for repeating. Tutorial support either i the classroom and/or outside the classroom, depending on the instructor's choice, and occasionally smaller than average size sections also contributed to the higher than expecte pass rate.

IV. FOLLOW-UP

An important question is how well multiple repeater students do after satisfactorily completing their developmental education. Analysis of the approximately 65% of the succeeders from the first two semesters who have moved on to the next credit level, indicates a clear pattern of success in English, but not in mathematics, as the following tab reveals:

Course	Number	% A-C	% D & F	% W/WU
MA175	36	5.6%	58.3%	36.1%
MA180	16	18.8%	50.0%	31.3%
EG101	102	66.7%	12.7%	20.0%

These results raise serious questions about the value of multiple repeaters finally passing mathematics developmental education, with such a low academic success rate in subsequ courses. Perhaps this means that students who do not grasp mathematics quickly, may master enough material over time to pass the Mathematics Assessment Test but not achie sufficient understanding to perform satisfactorily in subsequent mathematics courses. The success in English 101, however, illustrates the overall ease with which multiple repeaters

writing, including CESL students who have the same rate of success as native English speakers, can move on academically. Perhaps the Writing Assessment Test was too muc of an obstacle for these students, and other exit criteria should be considered.

V. CONCLUSION

The Multiple Repeaters Project was a success in terms of raising the rate of passin Forcing students to take the course seriously did appear to be the most critical ingredient. The future success of multiple repeaters in mathematics needs further study and examination. The Multiple Repeaters Project will not be continued. Both the College and City University are now in the process of enacting rules and procedures that will not allow students to repeat the same developmental course three or more times. These new rules will thus eliminate the need for such a program, and also reflect what has been learned fr this particular project. Special thanks should go to the instructors who taught these cours and helped the students to achieve such a high rate of passing, and to Prof. Esther Goodman who coordinated the project this past academic year.

MULTIPLE REPEATERS

SPRING 1995

FINAL REPORT: May 24, 1995

COURSE	SECTION	TOTAL # STUD	# P	%	# F	%	# W/WU	%	# OTHER	%
DM065.8	5144	13	7	53.8%	4	30.8%	2	15.4%	0	0.0%
TOTAL		13	7	53.8%	4	30.8%	2	15.4%	0	0.0%
EG092.8	5361	17	14	82.4%	3	17.6%	0	0.0%	0	0.0%
	1045	15	10	66.7%	3	20.0%	0	0.0%	2	13.3%
TOTAL		32	24	75.0%	6	18.8%	0	0.0%	2	6.3%
EL031.8	5861	20	10	50.0%	10	50.0%	0	0.0%	0	0.0%
	5869	21	12	57.1%	9	42.9%	0	0.0%	0	0.0%
TOTAL		41	22	53.7%	19	46.3%	0	0.0%	0	0.0%
GRAND TOTAL ALL MR		86	53	61.6%	29	33.7%	2	2.3%	2	2.3%

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MULTIPLE REPEATERS

FALL 1994

FINAL REPORT: January 20, 1995

COURSE	SECTION	TOTAL # STUD	# P	%	# F	%	# W/WU	%	# OTHER	%
DM065.8	4632	12	7	58.3%	3	25.0%	2	16.7%	0	0.0%
	4612	13	6	46.2%	5	38.5%	2	15.4%	0	0.0%
	5136	19	7	36.8%	6	31.6%	6	31.6%	0	0.0%
	5194	18	9	50.0%	5	27.8%	4	22.2%	0	0.0%
TOTAL		62	29	46.8%	19	30.6%	14	22.6%	0	0.0%
DR092.8	5258	12	5	41.7%	3	25.0%	1	8.3%	0	0.0%
EG092.8	5351	20	8	40.0%	11	55.0%	1	5.0%	0	0.0%
	5395	16	10	62.5%	5	31.3%	1	6.3%	0	0.0%
	1041	18	15	83.3%	3	16.7%	0	0.0%	0	0.0%
	1085	10	5	50.0%	3	30.0%	2	20.0%	0	0.0%
TOTAL		64	38	59.4%	22	34.4%	4	6.3%	0	0.0%
EL031.8	5861	16	4	25.0%	11	68.8%	1	6.3%	0	0.0%
	5866	23	11	47.8%	12	52.2%	0	0.0%	0	0.0%
	4964	16	6	37.5%	10	62.5%	0	0.0%	0	0.0%
TOTAL		55	21	38.2%	33	60.0%	1	1.8%	0	0.0%
GRAND TOTAL ALL MR		193	93	48.2%	77	39.9%	20	10.4%	0	0.0%

MULTIPLE REPEATERS

SPRING 1994

FINAL REPORT

COURSE	SECTION	TOTAL # STUD	# P	%	# F	%	# W/WU	%	# OTHER	%
DM065.8	0040	26	23	88.5%	1	3.8%	2	7.7%	0	0.0%
	0045	19	9	47.4%	5	26.3%	5	26.3%	0	0.0%
	0046	22	9	40.9%	6	27.3%	7	31.8%	0	0.0%
TOTAL		67	41	61.2%	12	17.9%	14	20.9%	0	0.0%
EG092.8	0050	29	12	41.4%	14	48.3%	2	6.9%	1	3.4%
	0055	16	6	37.5%	4	25.0%	6	37.5%	0	0.0%
	0058	22	5	22.7%	16	72.7%	1	4.5%	0	0.0%
TOTAL		67	23	34.3%	34	50.7%	9	13.4%	1	1.5%
EL031.8	0060	32	26	81.3%	5	15.6%	0	0.0%	1	3.1%
	0061	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%
	0068	19	16	84.2%	3	15.8%	0	0.0%	0	0.0%
TOTAL		53	43	81.1%	9	17.0%	0	0.0%	1	1.9%
GRAND TOTAL ALL MR		187	107	57.2%	55	29.4%	23	12.3%	2	1.1%

MULTIPLE REPEATERS

SPRING 1994 TO SPRING 1995

FINAL REPORT: June 19, 1995

COURSE	INSTR.	TOTAL # STUD	# P	%	# F	%	# W/WU	%	# OTHER	%
DM065.8		142	77	54.2%	35	24.6%	30	21.1%	0	0.0%
	F/T	116	54	46.6%	34	29.3%	28	24.1%	0	0.0%
	P/T	26	23	88.5%	1	3.8%	2	7.7%	0	0.0%
DR092.8	F/T	12	5	41.7%	4	33.3%	3	25.0%	0	0.0%
EG092.8		163	85	52.1%	62	38.0%	13	8.0%	3	1.8%
	F/T	91	43	47.3%	39	42.9%	9	9.9%	0	0.0%
	P/T	72	42	58.3%	23	31.9%	4	5.6%	3	4.2%
EL031.8		149	86	57.7%	61	40.9%	1	0.7%	1	0.7%
	F/T	42	27	64.3%	15	35.7%	0	0.0%	0	0.0%
	P/T	107	59	55.1%	46	43.0%	1	0.9%	1	0.9%
GRAND TOTAL ALL MR		466	253	54.3%	162	34.8%	47	10.1%	4	0.0%
TOTAL BY INSTR.	F/T	261	129	49.4%	92	35.2%	40	15.3%	0	0.0%
	P/T	205	124	60.5%	70	34.1%	7	3.4%	4	2.0%

NEW YORK CITY TECHNICAL COLLEGE

FOLLOW-UP ON SPRING 1994 THRU FALL 1994 MULTIPLE REPEATERS

# S IN DM065.8		GRADE DISTRIBUTION IN MA175								GRADE DISTRIBUTION IN MA180							
SEM.	# S	# A	# B	# C	# D	# F	# W	# WU	TOT	# A	# B	# C	# D	# F	# W	# WU	TOT
SP'94	44	0	1	0	4	9	6	4	24	0	0	2	1	0	1	1	5
%		0.00%	4.17%	0.00%	16.67%	37.50%	25.00%	16.67%	54.55%	0.00%	0.00%	40.00%	20.00%	0.00%	20.00%	20.00%	11.36%
SU'94	10	0	0	0	0	2	1	0	3	0	0	0	0	3	1	0	4
%		0.00%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	75.00%	25.00%	0.00%	40.00%
FA'94	25	0	0	1	1	5	1	1	9	0	1	0	2	2	2	0	7
		0.00%	0.00%	11.11%	11.11%	55.56%	11.11%	11.11%	36.00%	0.00%	14.29%	0.00%	28.57%	28.57%	28.57%	0.00%	28.00%
TOTAL	79	0	1	1	5	16	8	5	36	0	1	2	3	5	4	1	16
%		0.00%	2.78%	2.78%	13.89%	44.44%	22.22%	13.89%	45.57%	0.00%	6.25%	12.50%	18.75%	31.25%	25.00%	6.25%	20.25%

# S IN EG092.8		GRADE DISTRIBUTION IN EG101								
SEM.	# S	# A	# B	# C	# D	# F	# W	# WU	I	TOT
SP'94	23	1	5	6	1	0	4	1	0	18
%		5.56%	27.78%	33.33%	5.56%	0.00%	22.22%	5.56%	0.00%	78.26%
SU'94	8	0	1	3	1	0	1	0	0	6
%		0.00%	16.67%	50.00%	16.67%	0.00%	16.67%	0.00%	0.00%	75.00%
FA'94	38	1	3	10	2	1	3	0	1	21
		4.76%	14.29%	47.62%	9.52%	4.76%	14.29%	0.00%	4.76%	55.26%
TOTAL	69	2	9	19	4	1	8	1	1	45
%		4.44%	20.00%	42.22%	8.89%	2.22%	17.78%	2.22%	2.22%	65.22%

# S IN EL031.8		GRADE DISTRIBUTION IN EG101								
SEM.	# S	# A	# B	# C	# D	# F	# W	# WU	I	TOT
SP'96	44	0	12	16	3	1	9	1	0	42
%		0.00%	28.57%	38.10%	7.14%	2.38%	21.43%	2.38%	0.00%	95.45%
SU'96	0	0	0	0	0	0	0	0	0	0
%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FA'96	23	0	6	4	3	1	0	0	1	15
		0.00%	40.00%	26.67%	20.00%	6.67%	0.00%	0.00%	6.67%	65.22%
TOTAL	67	0	18	20	6	2	9	1	1	57
%		0.00%	31.58%	35.09%	10.53%	3.51%	15.79%	1.75%	1.75%	85.07%

NEW YORK CITY TECHNICAL COLLEGE

FOLLOW-UP ON SPRING 1994 THRU FALL 1994 MULTIPLE REPEATERS

# S IN DM065.8		GRADE DISTRIBUTION IN MA175 & MA180							
SEM.	# S	# A	# B	# C	# D	# F	# W	# WU	TOT
SP'94	44	0	1	2	5	9	7	5	29
%		0.00%	4.17%	8.33%	20.83%	37.50%	29.17%	20.83%	65.91%
SU'94	10	0	0	0	0	5	2	0	7
%		0.00%	0.00%	0.00%	0.00%	166.67 %	66.67%	0.00%	70.00%
FA'94	25	0	1	1	3	7	3	1	16
		0.00%	11.11%	11.11%	33.33%	77.78%	33.33%	11.11%	64.00%
TOTAL	79	0	2	3	8	21	12	6	52
%		0.00%	5.56%	8.33%	22.22%	58.33%	33.33%	16.67%	65.82%

# S IN EG092.8 & EL031.8		GRADE DISTRIBUTION IN EG101								
SEM.	# S	# A	# B	# C	# D	# F	# W	# WU	I	TOT
SP'94	67	1	17	22	4	1	13	2	0	60
%		1.67%	28.33%	36.67%	6.67%	1.67%	21.67%	3.33%	0.00%	89.55%
SU'94	8	0	1	3	1	0	1	0	0	6
%		0.00%	16.67%	50.00%	16.67%	0.00%	16.67%	0.00%	0.00%	75.00%
FA'94	61	1	9	14	5	2	3	0	2	36
		2.78%	25.00%	38.89%	13.89%	5.56%	8.33%	0.00%	5.56%	59.02%
TOTAL	136	2	27	39	10	3	17	2	2	102
%		1.96%	26.47%	38.24%	9.80%	2.94%	16.67%	1.96%	1.96%	75.00%

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MULTIPLE REPEATERS CUMULATIVE TO SP'95: SURVEY ANALYSIS

June 19, 1995

		#	%	CUMULATIVE TOTAL	CUMUL %
NUMBER OF SURVEY RESPONDENTS COURSES: DH = 63 EG = 127 EL = 96 DR = 7 UNIDENTIFIED = 8	TOTAL: 301				
3) # TIMES TAKEN PREVIOUSLY	1 OR 2	8	2.66%	8	2.6
	3	198	65.78%	206	68.4
	4	55	18.27%	261	86.7
	5	15	4.98%	276	91.6
	6 - 8	25	8.31%	301	100.
4.a) MOST IMPORTANT REASON FOR PREVIOUS FAILURE	DID NOT STUDY ENOUGH	85	28.24%	85	28.2
	PERSONAL OR FAMILY PROBLEMS	44	14.62%	129	42.8
	DID NOT ATTEND REGULARLY	19	6.31%	148	49.1
	INADEQUATE ACADEMIC PREPARATION	22	7.31%	170	56.4
	UNABLE TO UNDERSTAND	32	10.63%	202	67.1
	JOB	14	4.65%	216	71.7
	LANGUAGE BARRIER	11	3.65%	227	75.4
	LEARNING DISABLED	4	1.33%	231	76.7
	OTHER REASONS	38	12.62%	269	89.3
	UNSPECIFIED	32	10.63%	301	100.0
4.b) 2ND MOST IMPORTANT REASON FOR PREVIOUS FAILURE	PERSONAL OR FAMILY PROBLEMS	19	6.31%	19	6.31
	DID NOT STUDY ENOUGH	39	12.96%	58	19.2
	UNABLE TO UNDERSTAND	30	9.97%	88	29.2
	INADEQUATE ACADEMIC PREPARATION	20	6.64%	108	35.8
	JOB	26	8.64%	134	44.52
	DID NOT ATTEND REGULARLY	9	2.99%	143	47.5
	LANGUAGE BARRIER	11	3.65%	154	51.16
	LEARNING DISABLED	0	0.00%	154	51.16
	OTHER REASONS	59	19.60%	213	70.76
	UNSPECIFIED	88	29.24%	301	100.0
5.a) MOST IMPORTANT HELP NEEDED TO SUCCEED	TAKING COURSE MORE SERIOUSLY	91	30.23%	91	30.23
	UTILIZING TUTORS	53	17.61%	144	47.84
	REGULAR ATTENDANCE	39	12.96%	183	60.80
	UNDERSTANDING TEACHER	39	12.96%	222	73.75
	IMPROVING STUDY HABITS	20	6.64%	242	80.40

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		#	%	CUMULATIVE TOTAL	CUMULATI %
	UTILIZING THE LEARNING CENTER	9	2.99%	251	83.39%
	CAREFULLY FOLLOW INSTRUCTIONS	2	0.66%	253	84.05%
	OTHER REASONS	42	13.95%	295	98.01%
	UNSPECIFIED	6	1.99%	301	100.00%
5.b) 2ND MOST IMPORTANT HELP NEEDED TO SUCCEED	UTILIZING TUTORS	45	14.95%	45	14.95%
	IMPROVING STUDY HABITS	51	16.94%	96	31.89%
	UTILIZING THE LEARNING CENTER	39	12.96%	135	44.85%
	UNDERSTANDING TEACHER	33	10.96%	168	55.81%
	TAKING COURSE SERIOUSLY	43	14.29%	211	70.10%
	CAREFULLY FOLLOWING INSTRUCTIONS	14	4.65%	225	74.75%
	REGULAR ATTENDANCE	7	2.33%	232	77.08%
	OTHER REASONS	23	7.64%	255	84.72%
	UNSPECIFIED	46	15.28%	301	100.00%
9) PLANS FOR NEXT SEMESTER IF PASS	CONTINUE	247	82.06%	247	82.06%
	UNSURE	37	12.29%	284	94.35%
	OTHER	17	5.65%	301	100.00%
10) PLANS FOR NEXT SEMESTER IF FAIL	UNSURE	76	25.25%	76	25.25
	TRANSFER	36	11.96%	112	37.21
	REPEAT	52	17.28%	164	54.49
	APPEAL	2	0.66%	166	55.15
	OTHER	135	44.85%	301	100.00%
13.a) COMPUTER EXPERIENCE	YES	217	72.09%	217	72.09
	NO	80	26.58%	297	98.67
	UNSPECIFIED	4	1.33%	301	100.00%
13.b) WORD PROCESSING	YES	171	56.81%	171	56.81
	NO	114	37.87%	285	94.68
	UNSPECIFIED	16	5.32%	301	100.0
14.a) HOURS WORKED PER WEEK	DO NOT WORK REGULARLY	66	21.93%	66	21.93
	1-10 HOURS	49	16.28%	115	38.21
	11-20 HOURS	39	12.96%	154	51.16
	21-30 HOURS	43	14.29%	197	65.45
	OVER 30 HOURS	77	25.58%	274	91.03
	UNSPECIFIED	27	8.97%	301	100.0

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		#	%	CUMULATIVE TOTAL	CUMULAT %
14.b) LIVING SITUATION	WITH PARENTS	157	52.16%	157	52.16
	WITH SPOUSE	32	10.63%	189	62.79
	ALONE	30	9.97%	219	72.76
	WITH CHILDREN	44	14.62%	263	87.38
	RELATIVES	18	5.98%	281	93.36
	WITH SIBLINGS	5	1.66%	286	95.02
	WITH FRIENDS	4	1.33%	290	96.35
	OTHER	11	3.65%	301	100.0

STATUS REPORT ON MULTIPLE REPEATERS PROJECT

September, 1994

by David Entin

Two-thirds of the students admitted to New York City Technical College fail one or more of the three CUNY Assessment Tests and are required to enroll in one or more developmental education courses in order to pass the CUNY test(s) and move on to college level, credit courses. A significant and growing problem is students who enroll in developmental courses and fail to pass the CUNY test(s) at the conclusion of the course. A few hundred students continue to enroll at City Tech though they have not succeeded in becoming fully CUNY certified after several attempts. Students who fail the same developmental education course three or more times are now labeled "multiple repeaters."

The College Catalog (page 20) allows students to enroll in a developmental course for a third time only with the permission of the "major department" and under specified circumstances. This section of the catalog is not fully clear and does not establish enforcement procedures. The result is a growing number of "multiple repeaters" who continue to enroll semester after semester. A review of multiple repeater records last winter found a few students who had enrolled in the same developmental course eight to eleven times, and others with varied GPAs and credits attained. A report last fall found attendance in developmental courses by multiple repeaters was considerably below average, and many multiple repeaters did not take their developmental education requirements seriously.

There have been a few attempts at pilot programs to address the multiple repeaters problem over the past few years. These experiments have attempted one-on-one education, greater use of tutors and the Learning Center, and smaller classes, with generally positive results. Improved advisement and computer block procedures have lessened the number of students approaching graduation without CUNY certification. A VATEA grant from Fall 92 to Spring 94 supported smaller sections, testing at mid-semester, tutoring and counseling, and one-to-one assistance to ESL learners. The VATEA grant results were much higher than previous developmental efforts for multiple repeaters.

One of the greatest obstacles has been isolating the multiple repeaters on the computer and forcing them to complete their developmental education requirements before allowing enrollment in other subjects. Last winter a stop code was successfully devised to achieve this objective. This technical improvement permitted in the spring, 1994 semester the creation of a special Multiple Repeater project by Provost Emilie Cozzi, coordinated by Dean David Entin. Through the stop code, 187 multiple repeaters were enrolled in three sections each of developmental English, mathematics, and ESL.

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The students in these separate multiple repeater sections signed contracts pledging their attendance and diligent efforts to succeed. Other features of the special project this spring were intensive use of tutors in class and out of class, two receptions to encourage and talk with the multiple repeaters, assignment of a special counselor, introduction to new Plato software, use of the Learning Center, and surveys of students the third week of the course and after the semester was over. In addition, a course coordinator met weekly with the section instructors and every other week with a Multiple Repeaters Committee chaired by the Dean of Arts and Sciences.

The results from the 187 students enrolled in the nine special sections were:

57.2% passed their CUNY test,
29.4% failed,
and 12.3% withdrew.

This success rate was more than double what would have been predicted for multiple repeaters based on past performance. A careful review of student attendance, instructor comments and recommendations, test scores, and overall academic record, led to the academic dismissal of thirty-four of the students who failed the multiple repeater sections. Thirteen students were given an opportunity to enroll again, and ten were called in for counseling. This experiment and student follow-up have been effective overall in communicating to students that they must take their developmental courses seriously or face dismissal. During the summer, multiple repeaters were invited to attend intensive, special two-week immersion sections. The pass rate was even higher than the spring.

The success of the spring pilot project has led to a slight expansion of the multiple repeaters experiment this fall, to twelve sections, including one for developmental reading, three in ESL, and four each in English and developmental mathematics. These sections will be treated similarly to the spring experiment. The project will again be evaluated and suggestions for continuing improvement reviewed. Prof. Esther Goodman is serving as Coordinator of the Multiple Repeater project this semester, reporting to Dean David Entin.

As more multiple repeaters succeed, or are dismissed, we expect the number to decrease. A substantial dent has been made in the backlog. In several instances, students who failed only twice were admitted into multiple repeater sections this fall, some at the student's request. The program's success is apparently attracting student interest.

The continuing objective is to reduce the number of multiple repeaters. We will explore changing the definition to two failures rather than three as the number of multiple repeaters declines. We have learned that forcing intense student focus on completing the developmental requirements, with threat, and implementation, where appropriate, of dismissal, can produce greater success.

MULTIPLE REPEATER UPDATE

by David Entin February 1, 1995

The second full semester of the Multiple Repeater Project, Fall, 1994, has been completed. The results are, on the whole, positive and encouraging. Of the 193 students in the 10 developmental education sections:

48.2% passed
39.9% failed
10.4% withdrew

These results are not as good as the spring, 1994 results (with 187 students in nine sections), when 57.2% passed, 29.4% failed, and 12.3% withdrew. The results, however, are double the normally projected rate of passing for multiple repeaters.

In comparing the two semesters, it is interesting to note that, for the past semester, the pass rate for the English sections was highest and the pass rate for CESL sections was lowest, a reverse of the spring results. In both semesters the pass rate for sections taught by part-time faculty was slightly higher than for full-time faculty.

Prof. Esther Goodman, coordinator of the Multiple Repeater Project, and I personally reviewed the academic records and the instructor recommendations on all students who did not pass these special sections. The results of our actions/recommendations were as follows:

9 - already dismissed academ cally
24 - dismissed
36 - restricted enrollment to developmental courses
2 - not multiple repeaters
2 - call in for counseling
14 - enrolled during intersession (7 passed; 5 failed; 2 unknown

Unfortunately a new system of "capturing" multiple repeaters for the spring 1995 semester, relying on departmental advisors, had less success than previously. We only have 90 students in five sections for the project this semester.

I am attaching the detailed results from the fall semester, the results from last spring for comparison purposes, and the results of compiling the survey given to multiple repeater students in the fall 1994 semester.

MULTIPLE REPEATERS - NUMBER BY MAJOR

Fall 1994

Number of Students enrolled in same developmental course for 3 or more times:

NUMBER	ACADEMIC PROGRAM
45	Electrical Engineering Technology
45	Liberal Arts
26	Hospitality Management
25	Art and Advertising Design
25	Marketing
23	Computer Systems
22	Human Services
20	Accountancy
20	Electromechanical Engineering Technology
15	Radiologic Technology
15	Associate in Science
14	Mechanical Engineering Technology
13	Medical Laboratory Technology
12	Office Technology
11	Telecommunications
8	Chemical Technology
7	Civil Engineering Technology
7	Computer-Aided Drafting
6	Graphic Arts

APPENDIX J

Office of Enrollment Management
Eva Chan, Ph.D.
June 1995

Developmental Education Task Force Study

Cohorts: (1) Entering Freshmen of Fall 1990 (N=2326)
(2) Entering Freshmen of Fall 1988 (N=2223)

Comparison Groups:

(A) Comparison groups defined by enrollment in developmental courses:

(A.1) Developmental Math (DM):
Level 1: Students who initially enrolled in DM055.
Level 2: Students who initially enrolled in DM065.
Level 3: Students who initially enrolled in college credit MA courses.

(A.2) Developmental Reading (DR):
Level 1: Students who initially enrolled in DR091.
Level 2: Students who initially enrolled in DR092.
Level 3: Students who initially enrolled in EG101.

(A.3) Developmental Writing (DW):
1990 cohort:
Level 1: Students who initially enrolled in EG091.
Level 2: Students who initially enrolled in EG092.
Level 3: Students who initially enrolled in EG101.
1988 cohort:
Level 1: Students who initially enrolled in WS090.
Level 2: Students who initially enrolled in EG101.

(B) Defined by CUNY Assessment Test Scores:

(B.1) CUNY Assessment Math Test (TESTM):
Level 1: Students with math scores below 15.
Level 2: Students with math scores between 15 and 24.
Level 3: Students with math scores above 24.

(B.2) CUNY Assessment Reading Test (TESTR):
Level 1: Students with reading scores of
20 or lower when Form A or E was used;
21 or lower when Form B or F was used;
19 or lower when Form C, D, G or H was used.
Level 2: Students with reading scores
between 21 and 26 when Form A or E was used;
between 22 and 27 when Form B or F was used;
between 20 and 23 when Form C or G was used;
between 20 and 22 when Form D or H was used.
Level 3: Students with reading scores
above 26 when Form A or E was used;
above 27 when Form B or F was used;
above 23 when Form C or G was used;
above 22 when Form D or H was used.

(B.3) CUNY Assessment Writing Test (TESTW):
1990 cohort:
Level 1: Students with writing scores below 6.
Level 2: Students with writing scores of 6 or 7.
Level 3: Students with writing scores above 7.
1988 cohort:
Level 1: Students with writing scores of 6 or lower.
Level 2: Students with writing scores above 6.

Outcome Variables:

Graduation rate, GPA, credits accumulated, persistence (semesters enrolled), performances in EG101, MA175, PS101 and SO101 are examined.

Methods:

The Chi-square test and ANOVA were used where appropriate. Statistical significance is defined at the 0.05 level.

(I) Head Counts in Each Comparison Groups:

(I.A) 1990 cohort:

DM	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	378	19.1	378	19.1
2	974	49.2	1352	68.4
3	626	31.6	1978	100.0

* 348 students not enrolled in any developmental or college level math course were excluded.

DR	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	288	18.9	288	18.9
2	403	26.4	691	45.3
3	835	54.7	1526	100.0

* 800 students not enrolled in any developmental reading course or EG101 were excluded.

DW	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	290	17.5	290	17.5
2	649	39.1	939	56.6
3	719	43.4	1658	100.0

* 668 students not enrolled in any developmental writing course or EG101 were excluded.

Head Counts in Each Comparison Groups

(I.B) 1988 cohort

DM	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	377	19.5	377	19.5
2	965	49.9	1342	69.5
3	590	30.5	1932	100.0

* 291 students not enrolled in any developmental or college level math course were excluded.

DR	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	273	18.7	273	18.7
2	404	27.7	677	46.5
3	780	53.5	1457	100.0

* 766 students not enrolled in any developmental reading course or EG101 were excluded.

DW	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	988	62.0	988	62.0
2	605	38.0	1593	100.0

* 630 students not enrolled in any developmental writing course or EG101 were excluded.

Head Counts in Each Comparison Groups:

(I.C) 1990 cohort:

TESTM	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	350	15.0	350	15.0
2	1080	46.4	1430	61.5
3	896	38.5	2326	100.0

TESTR	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	578	24.8	578	24.8
2	505	21.7	1083	46.6
3	1243	53.4	2326	100.0

TESTW	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	738	31.7	738	31.7
2	645	27.7	1383	59.5
3	943	40.5	2326	100.0

Head Counts in Each Comparison Groups:

(I.D) 1988 cohort:

TESTM	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	405	18.2	405	18.2
2	1066	48.0	1471	66.2
3	752	33.8	2223	100.0

TESTR	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	572	25.7	572	25.7
2	500	22.5	1072	48.2
3	1151	51.8	2223	100.0

TESTW	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1451	65.3	1451	65.3
2	772	34.7	2223	100.0

(II) Graduation Rates:

Descriptive statistics and chi-square test for significant correlations:

GRAD=1 if a student graduated.
GRAD=2 if a student did not graduated by February 1995.

(II.A) 1990 cohort:

GRAD / Frequency / Col Pct	DM 1	2	3	Total
1	16 4.23	104 10.68	181 28.91	301
2	362 95.77	870 89.32	445 71.09	1677
Total	378	974	626	1978
	p<0.001			

GRAD / Frequency / Col Pct	DR 1	2	3	Total
1	14 4.86	50 12.41	207 24.79	271
2	274 95.14	353 87.59	628 75.21	1255
Total	288	403	835	1526
	p<0.001			

GRAD / Frequency / Col Pct	DW 1	2	3	Total
1	30 10.34	79 12.17	171 23.78	280
2	260 89.66	570 87.83	548 76.22	1378
Total	290	649	719	1658
	p<0.001			

(II.B) Graduation rates of the 1988 cohort:

Descriptive statistics and chi-square test for significant correlations:

GRAD=1 if a student graduated.
GRAD=2 if a student did not graduated by February 95.

GRAD / Frequency / Col Pct	DM 1	2	3	Total
1	44 11.67	203 21.04	201 34.07	448
2	333 88.33	762 78.96	389 65.93	1484
Total	377	965	590	1932
	p<0.001			

GRAD / Frequency / Col Pct	DR 1	2	3	Total
1	30 10.99	77 19.06	276 35.38	383
2	243 89.01	327 80.94	504 64.62	1074
Total	273	404	780	1457
	p<0.001			

GRAD / Frequency / Col Pct	DW 1	2	Total
1	199 20.14	205 33.88	404
2	789 79.86	400 66.12	1189
Total	988	605	1593
	p<0.001		

(II.C) Graduation rates of the 1990 cohort:

Descriptive statistics and chi-square test for significant correlations:

GRAD=1 if a student graduated.
GRAD=2 if a student did not graduate by February 1995.

GRAD / Frequency / Col Pct	TESTM 1	2	3	Total
1	14 4.00	109 10.09	197 21.99	320
2	336 96.00	971 89.91	699 78.01	2006
Total	350	1080	896	2326

p<0.001

GRAD / Frequency / Col Pct	TESTR 1	2	3	Total
1	49 8.48	62 12.28	209 16.81	320
2	529 91.52	443 87.72	1034 83.19	2006
Total	578	505	1243	2326

p<0.001

GRAD / Frequency / Col Pct	TESTW 1	2	3	Total
1	85 11.52	90 13.95	145 15.38	320
2	653 88.48	555 86.05	798 84.62	2006
Total	738	645	943	2326

p=0.073 (Not significant)

(II.D) Graduation rates of the 1988 cohort:

Descriptive statistics and chi-square test for significant correlations:

GRAD=1 if a student graduated.
GRAD=2 if a student did not graduated by Feb 95.

GRAD / Frequency / Col Pct	TESTM 1	2	3	Total
1	51 12.59	208 19.51	222 29.52	481
2	354 87.41	858 80.49	530 70.48	1742
Total	405	1066	752	2223

p<0.001

GRAD / Frequency / Col Pct	TESTR 1	2	3	Total
1	93 16.26	101 20.20	287 24.93	481
2	479 83.74	399 79.80	864 75.07	1742
Total	572	500	1151	2223

p<0.001

GRAD / Frequency / Col Pct	TESTW 1	2	Total
1	316 21.78	165 21.37	481
2	1135 78.22	607 78.63	1742
Total	1451	772	2223

p=0.825 (Not significant)

(III) DM, DR and DW levels as predictors of GPA and credits accumulated:

(III.A) Descriptive statistics and testing for significant mean differences for the 1990 cohort:

GPA:

DM	Mean	STD
1	1.57	1.04
2	1.73	1.07
3	2.23	1.12
	p=0.0001	

DR	Mean	STD
1	1.60	1.00
2	1.80	1.04
3	2.15	1.04
	p=0.0001	

DW	Mean	STD
1	1.66	1.03
2	1.78	1.08
3	2.12	1.09
	p=0.0001	

Credits accumulated:
(Number of credits over 60 is counted as 60.)

DM	Mean	STD
1	18.22	19.96
2	25.52	22.95
3	36.27	23.87
	p=0.0001	

DR	Mean	STD
1	20.19	21.07
2	26.76	23.23
3	34.00	22.97
	p=0.0001	

DW	Mean	STD
1	22.53	22.40
2	26.81	23.80
3	31.99	22.95
	p=0.0001	

Note: the large STD of credits accumulated is due to data non-normality. The Wilcoxon rank sum test was used to compute p-values.

(III.B) Descriptive statistics and testing for significant mean differences for the 1988 cohort:

GPA:

DM	Mean	STD
1	1.62	1.01
2	1.79	1.00
3	2.28	1.02
	p=0.0001	

DR	Mean	STD
1	1.48	0.98
2	1.75	1.05
3	2.24	0.92
	p=0.0001	

DW	Mean	STD
1	1.71	1.02
2	2.25	0.97
	p=0.0001	

Credits accumulated:
(Number of credits over 60 is counted as 60.)

DM	Mean	STD
1	19.87	21.63
2	28.19	23.59
3	37.71	22.78
	p=0.0001	

DR	Mean	STD
1	19.82	21.93
2	24.39	23.64
3	39.46	21.75
	p=0.0001	

DW	Mean	STD
1	26.07	23.83
2	38.07	22.32
	p=0.0001	

Note: the large STD of credits accumulated is due to data non-normality. The Wilcoxon rank sum test was used to compute p-values.

(III.C) Descriptive statistics and testing for significant mean differences for the 1990 cohort:

GPA:

TESTM	Mean	STD
1	1.60	1.04
2	1.72	1.09
3	2.13	1.24
	p=0.0001	

TESTR	Mean	STD
1	1.72	1.10
2	1.82	1.09
3	2.95	1.22
	p=0.0005	

TESTW	Mean	STD
1	1.78	1.12
2	1.85	1.09
3	1.94	1.24
	p=0.0244	

Credits accumulated:
(Number of credits over 60 is counted as 60).

TESTM	Mean	STD
1	17.98	19.97
2	24.84	22.93
3	28.07	24.63
	p=0.0001	

TESTR	Mean	STD
1	24.48	23.33
2	26.49	23.40
3	24.75	23.47
	p=0.0005	

TESTW	Mean	STD
1	25.95	23.93
2	27.34	23.69
3	22.83	22.65
	p=0.0015	

Note: the large STD of credits accumulated is due to data non-normality. The Wilcoxon rank sum test was used to compute p-values.

(III.D) Descriptive statistics and testing of significant mean differences for 1988 cohort:

GPA:

TESTM	Mean	STD
1	1.58	1.01
2	1.76	1.03
3	2.16	1.14
	p=0.0001	

TESTR	Mean	STD
1	1.74	1.06
2	1.82	1.06
3	1.95	1.11
	p=0.0007	

TESTW	Mean	STD
1	1.82	1.07
2	1.96	1.12
	p=0.0052	

Credits accumulated:
(Number of credits over 60 is counted as 60.)

TESTM	Mean	STD
1	20.07	22.16
2	26.68	23.56
3	32.53	23.90
	p=0.0001	

TESTR	Mean	STD
1	24.18	23.34
2	26.05	23.68
3	29.71	23.91
	p=0.0001	

TESTW	Mean	STD
1	27.20	24.06
2	28.05	23.40

p=0.1655 (Not significant)

Note: the large STD of credits accumulated is due to data non-normality. The Wilcoxon rank sum test was used to compute p-values.

(IV) Persistence:
(IV.A) 1990 cohort:
DUR=1 if a student stopped attending in Fall 91.
DUR=2 if a student stopped attending in Fall 92.
DUR=3 if a student persisted beyond Fall 92.

DUR Frequency / Col Pct | DM 1 | 2 | 3 | Total

	1	2	3	
1	152 40.21	351 36.04	169 27.00	672
2	106 28.04	226 23.20	112 17.89	444
3	120 31.75	397 40.76	345 55.11	862
Total	378	974	626	1978

p<0.001

DUR Frequency / Col Pct | DR 1 | 2 | 3 | Total

	1	2	3	
1	115 39.93	121 30.02	225 26.95	461
2	68 23.61	111 27.54	199 23.83	378
3	105 36.46	171 42.43	411 49.22	687
Total	288	403	835	1526

p<0.001

DUR Frequency / Col Pct | DW 1 | 2 | 3 | Total

	1	2	3	
1	100 34.48	247 38.06	208 28.93	555
2	76 26.21	124 19.11	186 25.87	386
3	114 39.31	278 42.84	325 45.20	717
Total	290	649	719	1658

p=0.001

(IV.B) Persistence (1988 cohort):
DUR=1 if a student stopped attending in Fall 89.
DUR=2 if a student stopped attending in Fall 90.
DUR=3 if a student persisted beyond Fall 90.

DUR / Frequency / Col Pct	DM 1	2	3	Total
1	156 41.38	336 34.82	181 30.68	673
2	96 25.46	210 21.76	124 21.02	430
3	125 33.16	419 43.42	285 48.31	829
Total	377	965	590	1932

p<0.001

DUR / Frequency / Col Pct	DR 1	2	3	Total
1	113 41.39	160 39.60	190 24.36	463
2	67 24.54	89 22.03	187 23.97	343
3	93 34.07	155 38.37	403 51.67	651
Total	273	404	780	1457

p<0.001

DUR / Frequency / Col Pct	DW 1	2	Total
1	374 37.85	176 29.09	550
2	230 23.28	137 22.64	367
3	384 38.87	292 48.26	676
Total	988	605	1593

p<0.001

(IV.C) Persistence (1990 cohort):
DUR=1 if a student stopped attending in Fall 91.
DUR=2 if a student stopped attending in Fall 92.
DUR=3 if a student persisted beyond Fall 92.

DUR / Frequency / Col Pct	TESTM 1	2	3	Total
1	143 40.86	409 37.87	379 42.30	931
2	94 26.86	250 23.15	155 17.30	499
3	113 32.29	421 38.98	362 40.40	896
Total	350	1080	896	2326

p<0.001

DUR / Frequency / Col Pct	TESTR 1	2	3	Total
1	198 34.26	170 33.66	563 45.29	931
2	123 21.28	125 24.75	251 20.19	499
3	257 44.46	210 41.58	429 34.51	896
Total	578	505	1243	2326

p<0.001

DUR / Frequency / Col Pct	TESTW 1	2	3	Total
1	244 33.06	248 38.45	439 46.55	931
2	159 21.54	126 19.53	214 22.69	499
3	335 45.39	271 42.02	290 30.75	896
Total	738	645	943	2326

p<0.001

(IV.D) Persistence (1988 cohort):
DUR=1 if a student stopped attending in Fall 89.
DUR=2 if a student stopped attending in Fall 90.
DUR=3 if a student persisted beyond Fall 90.

DUR / Frequency / Col Pct	TESTM 1	2	3	Total
1	181 44.69	403 37.80	308 40.96	892
2	93 22.96	228 21.39	144 19.15	465
3	131 32.35	435 40.81	300 39.89	866
Total	405	1066	752	2223

p=0.023

DUR / Frequency / Col Pct	TESTR 1	2	3	Total
1	207 36.19	187 37.40	498 43.27	892
2	128 22.38	107 21.40	230 19.98	465
3	237 41.43	206 41.20	423 36.75	866
Total	572	500	1151	2223

p=0.039

DUR / Frequency / Col Pct	TESTW 1	2	Total
1	535 36.87	357 46.24	892
2	308 21.23	157 20.34	465
3	608 41.90	258 33.42	866
Total	1451	772	2223

p<0.001

(V) DM, DR and DW levels as predictors of student performance in EG101, MA175, PS101 and SO101:

Student performance=High when a grade of A, B or C was received in MA175, A or B was received in EG101, PS101 and SO101.
Student performance=Low when any other grades was received.

(V.A) Frequencies and Percentages for the 1990 cohort:

EG101 Frequency / Col Pct	DM 1	2	3	Total
High	82 45.30	305 47.66	289 60.84	676
Low	99 54.70	335 52.34	186 39.16	620
Total	181	640	475	1296
		p<0.001		

MA175 Frequency / Col Pct	DM 1	2	3	Total
High	44 43.56	262 53.04	233 65.82	539
Low	57 56.44	232 46.96	121 34.18	410
Total	101	494	354	949
		p<0.001		

PS101 Frequency / Col Pct	DM 1	2	3	Total
High	18 20.45	105 32.81	113 44.31	236
Low	70 79.55	215 67.19	142 55.69	427
Total	88	320	255	663
		p<0.001		

SO101 Frequency / Col Pct	DM 1	2	3	Total
High	22 32.35	80 37.38	86 55.84	188
Low	46 67.65	134 62.62	68 44.16	248
Total	68	214	154	436
		p<0.001		

1990 cohort . (V.A continued)

EG101 DR

Frequency / Col Pct	1	2	3	Total
High	55 45.45	120 46.15	494 59.16	669
Low	66 54.55	140 53.85	341 40.84	547
Total	121	260	835	1216

p<0.001

MA175 DR

Frequency / Col Pct	1	2	3	Total
High	61 50.41	94 49.21	240 58.11	395
Low	60 49.59	97 50.79	173 41.89	330
Total	121	191	413	725

p=0.077

PS101 DR

Frequency / Col Pct	1	2	3	Total
High	15 26.32	41 31.06	172 39.81	228
Low	42 73.68	91 68.94	260 60.19	393
Total	57	132	432	621

p=0.044

SO101 DR

Frequency / Col Pct	1	2	3	Total
High	13 43.33	35 39.33	123 47.49	171
Low	17 56.67	54 60.67	136 52.51	207
Total	30	89	259	378

p=0.401

1990 cohort (V.A continued)

EG101 DW

Frequency / Col Pct	1	2	3	Total
High	44 36.67	192 48.12	444 61.75	680
Low	76 63.33	207 51.88	275 38.25	558
Total	120	399	719	1238

p<0.001

MA175 DW

Frequency / Col Pct	1	2	3	Total
High	64 48.12	163 54.52	181 55.35	408
Low	69 51.88	136 45.48	146 44.65	351
Total	133	299	327	759

p=0.349

PS101 DW

Frequency / Col Pct	1	2	3	Total
High	14 24.14	60 30.77	161 42.59	235
Low	44 75.86	135 69.23	217 57.41	396
Total	58	195	378	631

p=0.002

SO101 DW

Frequency / Col Pct	1	2	3	Total
High	25 48.08	48 38.10	103 47.91	176
Low	27 51.92	78 61.90	112 52.09	217
Total	52	126	215	393

p=0.187

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(V.B) Frequencies and Percentages for the 1988 cohort:

Student performance = High when a grade of A, B or C was received in MA175, A or B was received in EG101, PS101 and SO101. Student performance = Low when any other grades was received.

EG101 Frequency / Col Pct	DM 1	2	3	Total
High	78 45.35	263 44.50	239 56.90	580
Low	94 54.65	328 55.50	181 43.10	603
Total	172	591	420	1183

p<0.001

MA175 Frequency / Col Pct	DM 1	2	3	Total
High	40 40.00	252 48.18	177 61.46	469
Low	60 60.00	271 51.82	111 38.54	442
Total	100	523	288	911

p<0.001

PS101 Frequency / Col Pct	DM 1	2	3	Total
High	25 24.75	121 34.97	96 45.71	242
Low	76 75.25	225 65.03	114 54.29	415
Total	101	346	210	657

p=0.001

SO101 Frequency / Col Pct	DM 1	2	3	Total
High	38 45.24	120 51.06	88 59.46	246
Low	46 54.76	115 48.94	60 40.54	221
Total	84	235	148	467

p=0.089

1988 cohort (V.B continued)

EG101 DR

Frequency / Col Pct	1	2	3	Total
High	43 39.45	91 40.09	431 55.26	565
Low	66 60.55	136 59.91	349 44.74	551
Total	109	227	780	1116

p<0.001

MA175 DR

Frequency / Col Pct	1	2	3	Total
High	50 45.87	84 47.46	216 56.69	350
Low	59 54.13	93 52.54	165 43.31	317
Total	109	177	381	667

p=0.041

PS101 DR

Frequency / Col Pct	1	2	3	Total
High	21 33.33	31 26.72	160 40.30	212
Low	42 66.67	85 73.28	237 59.70	364
Total	63	116	397	576

p=0.024

SO101 DR

Frequency / Col Pct	1	2	3	Total
High	16 39.02	40 52.63	143 55.64	199
Low	25 60.98	36 47.37	114 44.36	175
Total	41	76	257	374

p=0.140

1988 cohort (V.B continued)

EG101 DW Frequency Col Pct	1	2	Total
High	224 41.71	359 59.34	583
Low	313 58.29	246 40.66	559
Total	537	605	1142
	p<0.001		

MA175 DW Frequency Col Pct	1	2	Total
High	216 47.58	152 58.24	368
Low	238 52.42	109 41.76	347
Total	454	261	715
	p=0.006		

PS101 DW Frequency Col Pct	1	2	Total
High	91 32.27	131 41.85	222
Low	191 67.73	182 58.15	373
Total	282	313	595
	p=0.016		

SO101 DW Frequency Col Pct	1	2	Total
High	100 48.78	109 56.77	209
Low	105 51.22	83 43.23	188
Total	205	192	397
	p=0.111		

(V.C) Frequencies and Percentages for the 1990 cohort:

Student performance=High when a grade of A, B or C was received in MA175; A or B was received in EG101, PS101 and SO101. Student performance=Low when any other grades was received.

EG101 Frequency / Col Pct	TESTM 1	2	3	Total
High	72 45.28	330 48.18	343 63.40	745
Low	87 54.72	355 51.82	198 36.60	640
Total	159	685	541	1385

p<0.001

MA175 Frequency / Col Pct	TESTM 1	2	3	Total
High	46 48.94	281 53.83	212 63.66	539
Low	48 51.06	241 46.17	121 36.34	410
Total	94	522	333	949

p=0.005

PS101 Frequency / Col Pct	TESTM 1	2	3	Total
High	16 20.78	118 33.91	150 48.39	284
Low	61 79.22	230 66.09	160 51.61	451
Total	77	348	310	735

p<0.001

SO101 Frequency / Col Pct	TESTM 1	2	3	Total
High	22 34.38	88 38.10	112 59.57	222
Low	42 65.63	143 61.90	76 40.43	261
Total	64	231	188	483

p<0.001

1990 COHORT (V.C continued)

EG101 TESTR

Frequency / Col Pct	1	2	3	Total
High	118 46.09	140 44.44	487 59.83	745
Low	138 53.91	175 55.56	327 40.17	640
Total	256	315	814	1385

p<0.001

MA175 TESTR

Frequency / Col Pct	1	2	3	Total
High	158 62.70	119 53.13	262 55.39	539
Low	94 37.30	105 46.88	211 44.61	410
Total	252	224	473	949

p=0.075

PS101 TESTR

Frequency / Col Pct	1	2	3	Total
High	47 36.43	53 33.54	184 41.07	284
Low	82 63.57	105 66.46	264 58.93	451
Total	129	158	448	735

p=0.211

SO101 TESTR

Frequency / Col Pct	1	2	3	Total
High	44 43.14	46 42.99	132 48.18	222
Low	58 56.86	61 57.01	142 51.82	261
Total	102	107	274	483

p=0.536

1990 COHORT (V.C continued)

EG101 TESTW

Frequency / Col Pct	1	2	3	Total
High	150 43.86	203 49.88	392 61.64	745
Low	192 56.14	204 50.12	244 38.36	640
Total	342	407	636	1385

p<0.001

MA175 TESTW

Frequency / Col Pct	1	2	3	Total
High	203 59.36	164 56.94	172 53.92	539
Low	139 40.64	124 43.06	147 46.08	410
Total	342	288	319	949

p=0.369

PS101 TESTW

Frequency / Col Pct	1	2	3	Total
High	58 33.92	74 36.27	152 42.22	284
Low	113 66.08	130 63.73	208 57.78	451
Total	171	204	360	735

p=0.133

SO101 TESTW

Frequency / Col Pct	1	2	3	Total
High	65 47.10	48 34.53	109 52.91	222
Low	73 52.90	91 65.47	97 47.09	261
Total	138	139	206	483

p=0.003

(D) Frequencies and Percentages for the 1988 cohort:

EG101 Frequency / Col Pct	TESTM 1	2	3	Total
High	78 44.07	285 45.45	272 57.51	635
Low	99 55.93	342 54.55	201 42.49	642
Total	177	627	473	1277
	p<0.001			

MA175 Frequency / Col Pct	TESTM 1	2	3	Total
High	42 39.25	270 50.09	157 59.25	469
Low	65 60.75	269 49.91	108 40.75	442
Total	107	539	265	911
	p=0.001			

PS101 Frequency / Col Pct	TESTM 1	2	3	Total
High	24 23.53	129 35.05	119 48.37	272
Low	78 76.47	239 64.95	127 51.63	444
Total	102	368	246	716
	p<0.001			

SO101 Frequency / Col Pct	TESTM 1	2	3	Total
High	43 48.31	122 50.41	103 59.54	268
Low	46 51.69	120 49.59	70 40.46	236
Total	89	242	173	504
	p=0.111			

1988 cohort (V.D continued)

EG101 TESTR

Frequency / Col Pct	1	2	3	Total
High	86 35.83	122 44.85	427 55.82	635
Low	154 64.17	150 55.15	338 44.18	642
Total	240	272	765	1277

p<0.001

MA175 TESTR

Frequency / Col Pct	1	2	3	Total
High	122 50.83	110 50.23	237 52.43	469
Low	118 49.17	109 49.77	215 47.57	442
Total	240	219	452	911

p=0.843

PS101 TESTR

Frequency / Col Pct	1	2	3	Total
High	50 34.48	54 34.62	168 40.48	272
Low	95 65.52	102 65.38	247 59.52	444
Total	145	156	415	716

p=0.272

SO101 TESTR

Frequency / Col Pct	1	2	3	Total
High	58 46.77	60 58.82	150 53.96	268
Low	66 53.23	42 41.18	128 46.04	236
Total	124	102	278	504

p=0.181

1988 cohort (V.D continued)

EG101 TESTW

Frequency / Col Pct	1	2	Total
High	321 43.44	314 58.36	635
Low	418 56.56	224 41.64	642
Total	739	538	1277

p<0.001

MA175 TESTW

Frequency / Col Pct	1	2	Total
High	327 51.25	142 52.01	469
Low	311 48.75	131 47.99	442
Total	638	273	911

p=0.833

PS101 TESTW

Frequency / Col Pct	1	2	Total
High	151 36.21	121 40.47	272
Low	266 63.79	178 59.53	444
Total	417	299	716

p=0.247

SO101 TESTW

Frequency / Col Pct	1	2	Total
High	173 52.58	95 54.29	268
Low	156 47.42	80 45.71	236
Total	329	175	504

p=0.715

(V.E) Summary Table of p-values for the Chi-square test for Significant Correlation (1990 cohort):

	N	DM	N	DR	N	DW
EG101	1296	<0.001	1216	<0.001	1238	<0.001
MA175	949	<0.001	725	0.077	759	0.349
PS101	663	<0.001	621	0.044	631	0.002
SO101	436	<0.001	378	0.401	393	0.187

(V.F) Summary Table of p-values for the Chi-square test for Significant Correlation (1988 cohort):

	N	DM	N	DR	N	DW
EG101	1183	<0.001	1116	<0.001	1142	<0.001
MA175	911	<0.001	667	0.041	715	0.006
PS101	657	0.001	576	0.024	595	0.016
SO101	467	0.089	374	0.140	397	0.111

Statistical significance is defined at the 0.05 level, i.e., when p>0.05, the correlation is considered not significant statistically.

(V.G) Summary Table of p-values obtained from the Chi-square Test for Significant Correlation (1990 cohort):

	TESTM	TESTR	TESTW
EG101 (N=1385)	<0.001	<0.001	<0.001
MA175 (949)	0.005	0.075	0.369
PS101 (735)	<0.001	<0.211	0.133
SO101 (483)	<0.001	<0.536	0.003

(V.H) Summary table of p-values obtained from the Chi-square test for significant correlation (1988 cohort):

	TESTM	TESTR	TESTW
EG101 (N=1277)	<0.001	<0.001	<0.001
MA175 (911)	0.001	0.843	0.833
PS101 (716)	<0.001	0.272	0.247
SO101 (504)	0.111	0.181	0.715

Statistical significance is defined at the 0.05 level, i.e., when p>0.05, the correlation is considered not significant statistically.

APPENDIX K

CLASS SIZE VS. GRADE

Fall, 1994 Grades: **Percentage Satisfactory** (S, or A, B, and C)

Course	Number of Students in Class Section: Under 20	21-24	25-27	28-29	30+
EG092	56% (64)	40% (494)	35% (570)	21% (56)	
EG101	69% (91)	67% (386)	69% (769)	80% (142)	78% (60)
DM065	44% (46)	39% (230)	38% (579)	40% (514)	40% (244)
DM055	45% (20)	50% (139)	55% (289)		
DR092	69% (16)	53% (68)	70% (455)	79% (200)	60% (30)
DR091		57% (94)	51% (258)		80% (30)

	Under 30	30-35	36-39	40+
MA175	51% (222)	45% (316)	41% (492)	36% (363)

( ) = Number of students in classes of this size

Spring 94

Percentage "R" or "F" Grade

Number of Students Per Section

Course	Under 20	21-24	25-29		30+	
			25-27	28-29	30-35	36-41
DM065	37%(3)	32%(7)	30%(9)	38%(19)	38%(15)	
DR092	25%(5)	35%(7)	29%(4)	22%(8)		
EG092	28%(4)	28%(13)	47%(16)	46%(9)		
EG101	9%(7)	6%(15)	6%(22)	4%.22)		
MA175	0%(1)		16%(6)		16%(10)	19%(2)

% = percentage of students receiving R grade or F grade
( ) = number of sections with that number of students

APPENDIX L

DEVELOPMENTAL EDUCATION TASK FORCE

Student Focus Groups: A Compendium of Comments

Over twenty developmental students representing a variety of majors participated in two focus groups convened in the Learning Center by the Student Subcommittee on Tuesday, November 22, 1994. The sessions were facilitated by Dr. German and focused on placement in the program, the structure of the program, critical instructional characteristics, and student expectations. A summary of their comments follows:

Placement

* students wanted more information on the program as they expected to begin their majors rather than invest considerable time in skill development;

* while the need for the CUNY-WAT is understood, students also need skills for the majors;

* students wanted help with their skills - and shared their analyses of their current skills and abilities;

* the 50 minute CUNY-WAT time limit is unreasonable, so, while students saw the value of the assessment, they also see the need to allocate more time to the task to collect and develop their thoughts;

Program

* developmental studies should be promoted with more information available to the incoming students so that they can see the opportunities at the institution and develop the tools for success;

* students perceive the development of skills as critical to their overall success;

* reading and writing, in particular, were considered immediately important, with the value of math increasing as the question was reconsidered;

* what is taught, for example, small paragraphs in writing, may not be what is needed for success in the majors;

* class size is critical, as smaller classes provide a better opportunity for attention, understanding, and real learning;

* adult learners seek respect, understanding and support in the educational environment;

* reading and writing instruction should be integrated within the program;

Instruction

* developmental students need more time - they're slower, not incapable;

* skill and drill, e.g., grammatical, is often repetitive and boring, and students need more challenge and stimulation to progress;

* focus instruction on the development of concepts and formats - models - and strategies while reinforcing the whole process of developing understanding;

* direct instruction with models, illustrations and examples, as well as feedback is essential - they seek direction and explanation;

* tutoring - within the class and beyond - is essential;

* students need to be offered help - demonstrated concern;

* the development of understanding is critical;

* students need individual help - especially in math - with hands-on experience;

* coaching and encouragement are critical to the success of the students;

* the use of interactive technology which supports student learning throughout the instructional process would be valuable to support skill development;

Overall

The ideal learning environment conceptualized by the students would provide instruction through small classes of 15 to 20 students with 2 tutors. Instruction within this environment would provide explanation and direct individual support for work in progress; it would capitalize on the prior learning and experience of the students in an arena of mutual respect. Supplemental instruction, perhaps integrated into the classroom experience, would use tutors and interactive technology. As a result, students would develop their understanding, their skills and their self-concept, and demonstrate their abilities. However, the quality of the instructor is critical; with a good teacher, students can learn a lot more. Ultimately, success breeds success, and student expectations increase.

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DEVELOPMENTAL EDUCATION TASK FORCE

Faculty Focus Groups: A Compendium of Comments

Two Focus Groups were facilitated by Dr. German on October 26, 1994 involving approximately twenty developmental faculty. The discussion focused on changes in students and student learning patterns, curricular and instructional requirements, and exemplary teaching-learning experiences. A synopsis of comments follows:

Students and Student Learning

Students are not acquainted with the requirements of college study, i.e., two hours of work for each class hour.

Students demonstrate a strong desire to succeed, but have poor self-image and require support for academic and personal development.

Some students work diligently; others have the ability, but lack motivation.

Students need information on financial aid limitations.

Homogeneity in terms of students' abilities increases student achievement when coupled with small classes and intensive programming suggesting the need for better sorting and the selection of a narrower range of student abilities by course.

The transition from developmental studies to collegiate study is difficult, requiring the development of self-reliance along the way.

Curricular and Instructional Requirements

Discipline requirements differ in terms of the structural requirements of the teaching-learning process with writing and reading preferring larger blocks of time scheduled less frequently and math requiring smaller blocks of time repeated more frequently.

Additional levels of developmental courses would allow for more homogeneity; self-paced learning would allow for more flexibility.

Disciplinary integration and shared readings reinforce learning across the disciplines.

Multiple repeaters need the opportunity to pass with tutorial support.

Exemplary Teaching-Learning Experiences

* **small, intensive summer workshops** for multiple repeaters with the instructor and two tutors which increased achievement with 16 of 24 students completing the CUNY-WAT and all gaining in confidence.

* **small** (15), class using **enriched readings** and providing **intensive** practice in writing in which successful students moved into Composition One after seven weeks and the balance passed by the end of the semester.

* **small** (15), **intensive express** course with tutorial assistance and computer support taugnt as part of a three- course load with the fourth course being release for a special project.

* instructional strategies which had students working **interactively** with students on the board to write, critique, and revise topic sentences, paragraphs, etc.

* special classes designed for legal studies to assist small, **homogeneous** group of students with the development of reading, studying, and critical thinking **skills in the content area.**

* the learning disabled student who required **special assistance and support** within and beyond the classroom to complete the course and pass the CUNY-WAT.

* the **tenacity** developed through the family mathematics course where students must focus, persist, show resourcefulness and kindness, and use common sense.

* **elegant instructional protocols** such as that which build on students' story telling abilities using the urban myth as the focus, a lesson which requires considerable **faculty planning and development** prior to implementation.

The critical characteristics of success revealed through exemplary experiences included:

* small class size
* the duration and intensity of the experience
* the singular focus of the students and their faculty
* the emphasis on production, practice and immediate feedback
* the active engagement of the learners in the learning experience
* the availability of qualified support, e.g., trained peer and/or professional tutors

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* the interface of reading, writing, and speaking concepts and skills
* the merger of content skills applied in the major through interdisciplinary interaction
* collaborative learning opportunities
* computer labs which require essential technical support and maintenance services
* faculty dedication and commitment coupled with a strong sense of humor, patience, and consistently high expectations
* speech as integral to the skill development program
* special assessment to optimize the placement of ESL students
* faculty planning time, places to meet and work with students, professional development opportunities, and recognition.

And finally, a description of the task ahead:

FIND OTHER RAMPS ONTO THE BRIDGE

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DEVELOPMENTAL EDUCATION TASK FORCE

College Faculty Focus Groups: A Compendium of Comments

Approximately twenty college faculty representing a cross section of academic disciplines participated in two focus groups convened by the Dean of Arts and Sciences on Tuesday December 13, 1994. The sessions were facilitated by Dr. German and focused on student placement, programmatic structure, instruction, and faculty expectations. A summary of their comments follows:

Placement

The student's environment must be considered during placement and program development; enculturation into the academic environment must be encouraged: discipline, preparation, etc.

ESL students often perform on the assessment, but can't actually read with sufficient proficiency to keep abreast of academic assignments.

ESL students may also be talented in their major, but lacking in the ability to communicate and read in English.

A review is required between CUNY math proficiency testing and entry into the academic program in order for students to stay current.

Students need a development program before retesting.

Students, particularly ESL students, tend to exhaust their financial aid before entering the academic programs.

Because the CUNY/WAT has prompted the development of the writing formula, it could be replaced with a variety of writing assignments, but should not be abandoned.

Consider the development of a computerized test generator.

The ambiguity of admissions standards is corrupting the image and self-concept of the institution and requires the development of standards.

Students should complete their developmental studies before entering the major.

Developmental students who begin with math 055 have little chance of survival in engineering technology and require both remediation and counseling; students who begin with advanced algebra have a much better chance of succeeding.

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The development of programmatic prerequisites has had a dramatic effect on the dental hygiene program.

Students are programmed into inappropriate classes, presenting a major problem; they should "see" their departments.

Perhaps alternatives should be pursued re: preparatory studies provided with by the college or by an outside agency.

Program

Repetition is not working - we need to vary the approach.

Remedial and developmental courses need to dovetail and advance simultaneously to integrate academic substance with remedial "nuts and bolts" and ensure skill transfer.

Communication, speaking (oral presentation), listening, writing and reasoning skills should be emphasized, particularly in relevant fields.

DS013 requires review in order to prepare ESL students for health related programs or another level of preparation is required.

A science preparatory course is required for students who completed high school without a lab science.

Students entering technical programs, in particular, must be able to read, measure, analyze a problem, and draw conclusions using extrapolation and causal reasoning.

Technical language should be incorporated into the developmental program because the ability to read technical and scientific material is crucial.

The college orientation course should be useful in helping students develop their self-esteem and intellectual curiosity.

Reading and writing should be integrated and refocused from the CUNY tests to academic performance.

Students need to develop their study skills and understand that preparation is critical to their success in the major.

AA101, which is mandatory, should be taken by all students and taught by faculty in order to reinforce role models and academic expectations.

Instruction

WAC requires revitalization.

Because innovation is idiosyncratic to the instructor a mechanism is required to assist faculty in sharing and adopting innovations.

Faculty need teaching strategies for diverse populations.

Instructional strategies need to capitalize on the thinking skills of ESL students and facilitate the development of language skills; however, instructional strategies need to facilitate the development of both thinking and language skills for native speakers.

Overall

It was observed that the further students progress, the more obvious the gap between those who are prepared and those who are underprepared. In fact, some acknowledged that remediation is "paying the bills" and perhaps compromising the image of the institution, suggesting that students with little chance of success should be counseled.

ESL was a much more prominent theme in this conversation, and the need to support the development of student self-esteem remained a strong concern.

And several faculty observed that they have become so departmentalized that they've lost touch with the students, their colleagues, and their support system. Moreover, it was acknowledged that students are worked hard by those who work hard, and that we all need to work together to develop the expectations and provide the support and encouragement required to produce.

Finally, the faculty were clearly focused on each of the four successive issues to be addressed through the educational process: first, promote student success at the point of entry; second, prepare for placement; third, prepare for college level study; and fourth, prepare for the professions.

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