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ABSTRACT

Drawing upon selected findings from student and faculty surveys, this report describes the remedial mathematics component of the University of Georgia's Special Studies Program. After examining the need for basic skills programs in an era of declining test scores and open admissions policies, the report describes the Special Studies Program's placement procedures, which require students with standardized test scores below a specified level to take basic skills courses and to meet established exit criteria before undertaking regular courses in areas for which remediation is needed. Brief profiles are then presented of three types of remedial students that were identified in a student survey at Augusta College: adults returning to school after many years; recent high school graduates with a long history of failure in mathematics; and senior citizens returning to school for enjoyment. Finally, the report presents selected findings of a survey of remedial mathematics faculty in the university system, identifying instructional methods used, course content, problems encountered in using individualized self-paced instruction, and perceived obstacles to learning mathematics. The survey questionnaires are appended. The 30-item student questionnaire focuses on personal and academic characteristics, educational goals, and satisfaction with the program. The 70-item faculty questionnaire asks about current and ideal conditions with respect to numerous aspects of special studies programs. (JF)

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SPECIAL STUDIES  
A STATEWIDE REMEDIAL MATHEMATICS PROGRAM  
OF THE  
UNIVERSITY SYSTEM OF GEORGIA

PING-TUNG CHANG

AUGUSTA COLLEGE,  
AUGUSTA, GEORGIA

1980

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## Special Studies

### -A Statewide Remedial Mathematics Program of the University System of Georgia-

Ping-Tung Chang

Augusta College

The average SAT scores on both the verbal and mathematical section have been dropping steadily for the past sixteen years.<sup>1</sup> The mathematics score was 502 in 1963, and in 1979 it was 467; the verbal score was 478 in 1963, and in 1979 it was 427. The alarming decline in SAT's underscores the deficiency of basic skills in all levels of educational systems. The failing of the three "R's" shows up in all types of school systems nationwide. In addition, the open-admission policies of many community colleges and universities have caused an influx of students with a wide range of deficiencies. They are unprepared for college-level courses, and, in some community colleges, this group of students may be as large as one-third of the entering freshman class.<sup>2</sup> One area in which such students lack requisite skills is mathematics.

As early as the fall of 1974, a systemwide program was initiated for all units of the University system of Georgia by the Board of Regents of the University System.<sup>3</sup> The Special

Studies Program (Remediation in English, Math, and Reading) was developed in order to prepare students to meet the academic demands of college-level courses. Entering students whose combined SAT score was 650 or less were required to take the Comparative Guidance and Placement Test (CGP)<sup>4</sup> for the purpose of placement either in remedial level courses within the Program of Special Studies or in regular college-level work. In 1978, the CGP was replaced by a new placement instrument, the "Basic Skills Examination" developed by the Regents of the University System. A student admitted to the program would not be permitted to take college credit courses which required the content of Special Studies courses until he or she exhibited a level of satisfactory performance. Students who had less than fifteen hours of Special Studies requirements which could be scheduled in one quarter could concurrently enroll in remedial classes and freshman level courses outside the area of their remediation. No college credit would be earned for the remedial courses; however, institutional credit would be awarded. A student could exit the program at the end of any quarter in which he or she completed all the requirements.<sup>5</sup> Two more exit criteria, classwork and departmental final examination, were also implemented for the remedial math student in addition to the Regent's mandatorial minimum BSE math score.<sup>6</sup>

In a recent survey (See Appendix A) of our remedial mathematics students, three kinds of students in our program

have been identified. The first kind consists of students who are returning to school after many years of absence. These students are frequently older, highly motivated, employed and have family responsibilities. The second kind consists of students who are recent graduates and in many cases have a long history of failure in mathematics throughout their high school years; most of them took non-college bound mathematics. Their study skills usually are poor and they often need remediation in reading and English. This group of students constitutes the majority of the enrollment in our remedial mathematics classes. The third kind consists of students who are primarily senior citizens, and they return to school merely for the enjoyment.

In a 1976 survey (See Appendix B) among the colleges within the University System of Georgia, most faculty felt that the majority of the students still prefer to have traditional lecture type classes and scheduled examinations. The students like face-to-face competition with each other and enjoy the satisfaction of receiving well-earned high grades, though some also requested more individual attention from the teachers. About 49 percent of the faculty reported that they still used traditional lecture-demonstration methods to teach remedial mathematics, about 25 percent used a combination of lecture and individualized type, and about 15 percent tried a self-paced type method and used programmed materials. A few of the faculty developed audio-tutorial instruction, small group method and mini-courses, or other self-contained<sup>7</sup> instructional

methods that provided even greater individualization.

Overwhelmingly, the faculty recognized that teaching remedial mathematics is a challenging task. It was the consensus of the faculty that the obstacles to learning mathematics for the remedial students were: 1) a long history of dislike for studying mathematics, 2) lack of self-confidence in learning mathematics, 3) emotional disturbances associated with anxiety regarding testing. Many faculty members also indicated that they would like to try new methods other than conventional instruction if such methods benefit their students. A number of them revealed that many problems face them when they have a laboratory-programmed type or self-paced type of mathematics course, such as a lack of suitable self-instructional text books, conflicts between school calendars and the actual time needed by the student to complete courses, a lack of communication between teachers and students, a lack of competition between students, a high failure rate, a lack of teachers' guidance in teaching the best possible ways to work the problems.

Most colleges offer at least two levels of remedial mathematics. The contents of the first level are arithmetic and elementary algebra, and the second level of remedial work emphasizes the usual topics associated with intermediate algebra.

To teach students with a history of low achievement in mathematics to learn mathematics is not an easy and routine task. The majority of the faculty see that it is their responsibility to create new

concepts for the subjects and make an abstract course more vivid, and more interesting. It is no doubt that most teachers have to become more expert, more professional. It is also no longer true as some still believe, that "anyone can teach" remedial mathematics!

Of course, it is crucial that mathematics teachers should not only appear enthusiastic in their teaching, but also should show patience, understanding and sympathy in working with their students. They believe that to teach mathematics is to teach students how to think clearly, how to use mathematics to survive in today's world, how to solve problems more quickly and accurately, and how to train the students to have a basic foundation to meet the challenge of tomorrow's competition.

## References

1. The College Board News, September 1979
2. Charles R. Monroe. Profile of the Community College: A Handbook. San Francisco: Jossey-Bass, Inc., Publishers, (1972) 103-110. During the Fall Quarter of 1979, 60% of the entering freshman needed remediation at Augusta College.
3. University System of Georgia, Staff Report, September 1973
4. College Entrance Examination Board, Comparative Guidance and Placement Program: Interpretive Manual. Princeton, New Jersey: College Entrance Examination Board, 1969.
5. Students must satisfy all special studies program requirements by the time they have attempted forty-five hours (excluding Physical Education) or be dropped from the program.
6. Students must satisfy the following "Exit" criteria in mathematics: 1) Departmental examination; achieve at least 70% on the final exam score. 2) Course work; maintain a final course average of at least 70. 3) MAT BSE (Basic Skills Exam). It is required for all Special Studies Program Students. (Optional for Volunteers) a) for MAT 98, have a score of at least 53, b) for MAT 99, have a score of at least 60.
7. An audio-tutorial type of mini-courses developed by biologist Sam Postlethwait of Purdue University.

### Address:

Dr. Ping-Tung Chang  
Math Coordinator  
Special Studies/Math  
Augusta College  
Augusta, GA 30910



SPECIAL STUDIES PROGRAM -- Mathematics  
University System of Georgia

QUESTIONNAIRE

Date: \_\_\_\_\_

Name of the College: \_\_\_\_\_

I. Background Information:

- (1) Sex \_\_\_\_\_ (2) Race \_\_\_\_\_ (3) age \_\_\_\_\_  
(4) Marital status \_\_\_\_\_ (5) any children: yes \_\_\_\_\_ no \_\_\_\_\_  
(6) any sisters and brothers: yes \_\_\_\_\_ no \_\_\_\_\_ if yes, please  
answer (7).  
(7) How many: brothers \_\_\_\_\_ sisters \_\_\_\_\_  
(give number) (give number)  
(8) Do you live with your parents while attending school?  
(a) yes \_\_\_\_\_ (b) no \_\_\_\_\_  
(9) You are a: (a) commuting student (day) \_\_\_\_\_  
(b) Evening student \_\_\_\_\_  
(c) Campus (Dorm) student \_\_\_\_\_  
(10) You are a: (a) Special studies Program Student \_\_\_\_\_  
(b) regular college student \_\_\_\_\_  
if answer (b), please respond to (11).  
(11) If you are a regular college student, what year?  
(a) freshman \_\_\_\_\_ (b) sophomore \_\_\_\_\_ (c) junior \_\_\_\_\_ (d) senior \_\_\_\_\_  
(12) Date you graduated from high school \_\_\_\_\_  
month, year  
(13) Date you first enrolled in this college \_\_\_\_\_  
quarter, year  
(14) Military service: yes \_\_\_\_\_ no \_\_\_\_\_  
(15) Date of discharge from military service: \_\_\_\_\_  
month, year

II. Educational goals

- (16) How do you choose to take this developmental mathematics?  
(a) Requirement \_\_\_\_\_  
(b) Failure of G.C.P. \_\_\_\_\_  
(c) Volunteer \_\_\_\_\_  
(d) Teacher's advice \_\_\_\_\_  
(e) Other (explain please) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

- (17) Prior to taking this mathematics course, how do you evaluate your  
mathematical ability?  
(a) excellent \_\_\_\_\_  
(b) good \_\_\_\_\_  
(c) fair \_\_\_\_\_  
(d) poor \_\_\_\_\_  
(e) very poor \_\_\_\_\_  
(f) others (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(18) Do you think you should take this mathematics course?

(a) Yes \_\_\_\_\_

(b) No \_\_\_\_\_ (If no, please give reasons)

(19) Do you plan to take any more mathematics after you have successfully completed this course?

(a) Yes \_\_\_\_\_ (If yes, please answer 20)

(b) No \_\_\_\_\_

(20) What kind of mathematics course do you plan to take?

(a) another developmental mathematics course \_\_\_\_\_

(b) college-level mathematics \_\_\_\_\_

(c) Others (please explain) \_\_\_\_\_

(21) After you have enrolled in this course for several weeks, how do you reevaluate your mathematical ability now?

(a) excellent \_\_\_\_\_

(b) good \_\_\_\_\_

(c) fair \_\_\_\_\_

(d) still poor \_\_\_\_\_

(e) still very poor \_\_\_\_\_

(f) others (please explain) \_\_\_\_\_

Comments:

\_\_\_\_\_  
\_\_\_\_\_

(22) Do you agree that Mathematics will make a significant contribution to your overall personal educational objectives?

(a) strongly agree \_\_\_\_\_

(b) agree \_\_\_\_\_

(c) disagree \_\_\_\_\_

(d) strongly disagree \_\_\_\_\_

(e) others (please explain) \_\_\_\_\_

Comments:

\_\_\_\_\_  
\_\_\_\_\_

(23) What is your major field?

(a) English \_\_\_\_\_

(b) Mathematics \_\_\_\_\_

(c) Science \_\_\_\_\_

(d) Others (please explain) \_\_\_\_\_

(24) Do you plan to do some more advanced study after you get your degree in this college?

(a) yes \_\_\_\_\_

(b) no \_\_\_\_\_

Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(25) Do you think you changed anything about your study habits as a result of taking this course?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

(26) What do you think about the check-point evaluation tests? (You could check more than one answer).

- (a) shows your arithmetic deficiency \_\_\_\_\_
- (b) encourages you to do better work \_\_\_\_\_
- (c) wastes time \_\_\_\_\_
- (d) others (please explain) \_\_\_\_\_

Additional comments: \_\_\_\_\_  
\_\_\_\_\_

(27) What percentage of the course material covered do you feel you learned?

- (a) 90% \_\_\_\_\_
- (b) 80% \_\_\_\_\_
- (c) 70% \_\_\_\_\_
- (d) 60% \_\_\_\_\_
- (e) others (please give percent) \_\_\_\_\_

Additional comments: \_\_\_\_\_  
\_\_\_\_\_

(28) Do you feel that this course challenged you intellectually?

- (a) yes \_\_\_\_\_
- (b) no \_\_\_\_\_
- (c) others (please explain) \_\_\_\_\_

(29) How do you describe your instructor or his teaching method? (You could check more than one answer).

- (a) He was enthusiastic \_\_\_\_\_
- (b) He seems to be interested in teaching \_\_\_\_\_
- (c) He attempts to cover too much material \_\_\_\_\_
- (d) He generally stimulated class discussions \_\_\_\_\_
- (e) He was available for conferences outside of class \_\_\_\_\_
- (f) He assigns too much homework \_\_\_\_\_
- (g) Others (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

(30) Any additional comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

A Study of the Developmental Mathematics in the University System  
of Georgia --- a Questionnaire Dealing with the  
Remedial Mathematics in College.

Ping-Tung Chang  
Augusta College  
Augusta, GA

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The document will be available to the public from Eric System.

Current Address:

Dr. Ping-Tung Chang  
Special Studies/Math  
Augusta College  
Augusta, GA 30910

A STUDY OF THE DEVELOPMENTAL MATHEMATICS IN THE  
UNIVERSITY SYSTEM OF GEORGIA

Instructions

1. Please answer all the questions with appropriate methods described in each problem.
2. Some problems are provided space for your additional comments. Your responses will be most welcome.
3. All the problems are dealing with actual situations in your college, and some of the problems bearing the number followed by "A" are dealing with ideal circumstances.
4. Please return the completed questionnaire promptly to:

Ping-Tung Chang  
Division of Mathematics & Science  
Gordon Junior College  
Barnesville, GA 30204

(1) How do you choose your students for the developmental mathematics?  
(You could check more than one answer).

- (a) G.C.P. \_\_\_\_\_
- (b) High school average \_\_\_\_\_
- (c) SAT scores \_\_\_\_\_
- (d) student volunteer \_\_\_\_\_
- (e) Teacher referral \_\_\_\_\_
- (f) Other (explain, please!) \_\_\_\_\_

Comments: \_\_\_\_\_

(1A) Ideally, how would you choose your students for the developmental mathematics? (You could check more than one answer).

- (a) G.C.P. \_\_\_\_\_
- (b) High school average \_\_\_\_\_
- (c) SAT scores \_\_\_\_\_
- (d) Student volunteer \_\_\_\_\_
- (e) Teacher referral \_\_\_\_\_
- (f) Other (explain, please!) \_\_\_\_\_

(1A) cont. Comments: \_\_\_\_\_  
\_\_\_\_\_

(2) If a student does not volunteer to enroll in developmental mathematics, do you require him to do it?

Yes \_\_\_\_\_

No \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(2A) Ideally, if a student does not volunteer to enroll in developmental mathematics, do you require him to do it?

Yes \_\_\_\_\_

No \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(3) Before entering in the college-level mathematics courses, must the developmental mathematics be completed successfully by those students who are in the class?

Yes \_\_\_\_\_

No \_\_\_\_\_

(3A) Ideally, before entering in the college-level mathematics courses, must the developmental mathematics be completed successfully by those students who are in the class?

Yes \_\_\_\_\_

No \_\_\_\_\_

(4) What kind of developmental mathematics courses do you offer? (You could check more than one answer).

- (a) arithmetic \_\_\_\_\_
- (b) elementary algebra \_\_\_\_\_
- (c) combination of arithmetic and elementary algebra \_\_\_\_\_
- (d) Geometry (plane) \_\_\_\_\_ (analytic) \_\_\_\_\_
- (e) Other (explain, please) \_\_\_\_\_

(4) Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(4A) Ideally, what kind of developmental mathematics courses do you like to offer? (You could check more than one answer).

- (a) arithmetic \_\_\_\_\_
- (b) Elementary algebra \_\_\_\_\_
- (c) Combination of arithmetic and elementary algebra \_\_\_\_\_
- (d) Geometry (plane) \_\_\_\_\_ (analytic) \_\_\_\_\_
- (e) Other (explain, please) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(5) What is the average length for most of the students to finish developmental mathematics successfully?

- (a) Less than 8 weeks \_\_\_\_\_
- (b) 8 - 10 weeks (one quarter) \_\_\_\_\_
- (c) 11 - 15 weeks ( $1\frac{1}{2}$  quarters) \_\_\_\_\_
- (d) 16 - 20 weeks (2 quarters) \_\_\_\_\_
- (e) More than 2 quarters \_\_\_\_\_

(5A) Ideally, what would you think the average length for most of the students to finish developmental mathematics successfully?

- (a) Less than 8 weeks \_\_\_\_\_
- (b) 8 - 10 weeks (one quarter) \_\_\_\_\_
- (c) 11 - 15 weeks ( $1\frac{1}{2}$  quarters) \_\_\_\_\_
- (d) 16 - 20 weeks (2 quarters) \_\_\_\_\_
- (e) More than 2 quarters \_\_\_\_\_

(6) What percent of students who pass developmental mathematics successfully do so in the following periods of time? (Your estimate will be sufficient).

- (a) Less than 8 weeks \_\_\_\_\_ (Give percentage)
- (b) 8 - 10 weeks (one quarter) \_\_\_\_\_ (Give percentage)
- (c) 11 - 15 weeks ( $1\frac{1}{2}$  quarters) \_\_\_\_\_ (Give percentage)
- (d) 16 - 20 weeks (2 quarters) \_\_\_\_\_ (Give percentage)
- (e) More than 2 quarters \_\_\_\_\_ (Give percentage)
- (f) No such information \_\_\_\_\_

(6) cont. Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (7) What is the average size of your developmental mathematics class?
  - (a) less than 15 \_\_\_\_\_
  - (b) 16 - 20 \_\_\_\_\_
  - (c) 21 - 25 \_\_\_\_\_
  - (d) 26 - 30 \_\_\_\_\_
  - (e) 31 - 35 \_\_\_\_\_
  - (f) More than 35 \_\_\_\_\_ (please specify)

- (7A) Ideally, what would be the average size of your developmental mathematics class?
  - (a) less than 15 \_\_\_\_\_
  - (b) 16 - 20 \_\_\_\_\_
  - (c) 21 - 25 \_\_\_\_\_
  - (d) 26 - 30 \_\_\_\_\_
  - (e) 31 - 35 \_\_\_\_\_
  - (f) More than 35 (please specify) \_\_\_\_\_

- (8) How do your instructors conduct their developmental mathematics classes? (You could check more than one answer).
  - (a) Traditional lecture-demonstration \_\_\_\_\_
  - (b) Self-paced type (informal class meeting) \_\_\_\_\_
  - (c) Lecture-demonstration-Self-paced type (formal class meeting) \_\_\_\_\_
  - (d) Laboratory type (Teacher will serve as a tutor in the math lab, in an informal class) \_\_\_\_\_
  - (e) Other (please specify) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (8A) Ideally, how would you like your instructors to conduct their developmental mathematics classes? (You could check more than one answer).
  - (a) Traditional lecture-demonstration \_\_\_\_\_
  - (b) Self-paced type (informal class meeting) \_\_\_\_\_
  - (c) Lecture-demonstration-self-paced type (formal class meeting) \_\_\_\_\_
  - (d) Laboratory type (Teacher will serve as a tutor in the math lab, in an informal class) \_\_\_\_\_
  - (e) Other (please specify) \_\_\_\_\_



Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(9) Do your instructors have tutorial services for their developmental mathematics students besides their regular classes?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_

If yes, please answer (10), (10A), (11), (11A)  
If no, please answer (10A), (11A)

(9A) Ideally, do you like your instructors to have tutorial services for their developmental mathematics students besides their regular classes?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_

(If yes, please answer (10A) - (11A)

(10) How are these tutorial services conducted?

- (a) a scheduled help session \_\_\_\_\_
- (b) an unscheduled tutorial \_\_\_\_\_
- (c) Other (please explain) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(10A) Ideally, how would you like your tutorial session to be conducted?

- (a) A scheduled help session \_\_\_\_\_
- (b) An unscheduled tutorial \_\_\_\_\_
- (c) Other (Please explain) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(11) The tutorial service is conducted by: (You could check more than one answer).

- (a) Instructor himself \_\_\_\_\_
- (b) Student tutor \_\_\_\_\_
- (c) Mathematics laboratory staff \_\_\_\_\_
- (d) Graduate assistant \_\_\_\_\_
- (e) Other (please explain) \_\_\_\_\_

\_\_\_\_\_

(11A) Ideally, the tutorial service should be conducted by: (You could check more than one answer).

- (a) Instructor himself \_\_\_\_\_
- (b) Student tutor \_\_\_\_\_
- (c) Mathematics Laboratory staff \_\_\_\_\_
- (d) Graduate assistant \_\_\_\_\_
- (e) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_

(12) What kind of textbook do you use for your developmental mathematics classes?

- (a) Programmed type text \_\_\_\_\_
- (b) Conventional text \_\_\_\_\_
- (c) Your own written notes \_\_\_\_\_
- (d) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_

(12A) Ideally, what kind of textbook do you like to use for your developmental mathematics classes?

- (a) programmed type text \_\_\_\_\_
- (b) conventional text \_\_\_\_\_
- (c) Your own written notes \_\_\_\_\_
- (d) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_

(13) What kind of teaching aids do you use for your developmental mathematics classes? (You could check more than one answer).

- (a) Tapes \_\_\_\_\_
- (b) Slides \_\_\_\_\_
- (c) Movies \_\_\_\_\_
- (d) Programmed books \_\_\_\_\_
- (e) Computer \_\_\_\_\_
- (f) Electronic calculators \_\_\_\_\_
- (g) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_

(13A) Ideally, what kind of teaching aids would you like to use for your developmental mathematics classes? (You could check more than one answer).

- (a) Tapes \_\_\_\_\_
- (b) Slides \_\_\_\_\_
- (c) Movies \_\_\_\_\_
- (d) Programmed books \_\_\_\_\_
- (e) Computer \_\_\_\_\_
- (f) Electronic calculators \_\_\_\_\_
- (g) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_

(14) Do you have a mathematics laboratory?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_

If yes, please answer (15), (15A), (16), (16A), (17), (17A)  
If no, please answer (15A), (16A), (17A)

(15) What kind of mathematics laboratory do you have?

- (a) Study laboratory (with tutors but no lab equipment) \_\_\_\_\_
- (b) Learning Laboratory (with staff and lab equipment) \_\_\_\_\_
- (c) Learning resource laboratory (library type) \_\_\_\_\_
- (d) Learning center (joint lab with English, reading, etc.) \_\_\_\_\_
- (e) Other (please explain) \_\_\_\_\_

(15A) Ideally, what kind of mathematics laboratory do you like to have?

- (a) Study laboratory (with tutors but no lab equipment) \_\_\_\_\_
  - (b) Learning Laboratory (with staff and lab equipment) \_\_\_\_\_
  - (c) Learning resource laboratory (Library type) \_\_\_\_\_
  - (d) Learning center (joint lab with English, Reading, etc.) \_\_\_\_\_
  - (e) Other (please explain) \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

(16) Which department administers the mathematics laboratory?

- (a) Mathematics department \_\_\_\_\_
  - (b) Division of special study \_\_\_\_\_
  - (c) Mathematics & Science Division \_\_\_\_\_
  - (d) Library \_\_\_\_\_
  - (e) Other (please specify) \_\_\_\_\_
- \_\_\_\_\_

(16A) Ideally, which department should administer the mathematics laboratory?

- (a) Mathematics Department \_\_\_\_\_
  - (b) Division of special study \_\_\_\_\_
  - (c) Math & Science Division \_\_\_\_\_
  - (d) Library \_\_\_\_\_
  - (e) Other (please specify) \_\_\_\_\_
- \_\_\_\_\_

(17) How do you staff your mathematics laboratory?

- (a) permanent full-time regular mathematics staff \_\_\_\_\_
  - (b) part-time student assistants \_\_\_\_\_
  - (c) regular teaching faculty members \_\_\_\_\_
  - (d) Library personnel \_\_\_\_\_
  - (e) Other (please explain) \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

(17A) Ideally, how would you like to staff your mathematics laboratory?

- (a) permanent full-time regular mathematics staff \_\_\_\_\_
  - (b) part-time student assistants \_\_\_\_\_
  - (c) regular teaching faculty members \_\_\_\_\_
  - (d) Library personnel \_\_\_\_\_
  - (e) Other (please explain) \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- (18) Do you hire faculty members who are mainly responsible for teaching your developmental mathematics?  
(a) Yes \_\_\_\_\_  
(b) No \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (19) What is the educational background of the instructor who is mainly responsible for teaching your developmental mathematics?  
(a) Master's Degree in Math \_\_\_\_\_  
(b) Master's Degree in Mathematics Education \_\_\_\_\_  
(c) Ph.D. in Math or Math Education \_\_\_\_\_  
(d) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (19A) Ideally, what would be the educational background of the instructor who is mainly responsible for teaching your developmental mathematics?  
(a) Master's Degree in Math \_\_\_\_\_  
(b) Master's Degree in Math Education \_\_\_\_\_  
(c) Ph.D. in Math or Math Education \_\_\_\_\_  
(d) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (20) Do you identify your special study program students as well as regular mathematically deficient students who enrolled in your developmental mathematics class?  
(a) Yes \_\_\_\_\_  
(b) No \_\_\_\_\_

If yes, please answer (21) - (24).

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(21) What is the percent of the special study program students who have successfully completed their developmental mathematics course?

(Rough estimate will be sufficient).

- (a) 30% - 35% \_\_\_\_\_
- (b) 36% - 40% \_\_\_\_\_
- (c) 41% - 45% \_\_\_\_\_
- (d) 46% - 50% \_\_\_\_\_
- (e) Other (if less than 30%, or more than 50%, please indicate your percentage). \_\_\_\_\_
- (f) No such information \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(22) What is the percent of the regular mathematically deficient students who have successfully completed developmental mathematics? (Rough estimate will be sufficient).

- (a) 30% - 35% \_\_\_\_\_
- (b) 36% - 40% \_\_\_\_\_
- (c) 41% - 45% \_\_\_\_\_
- (d) 46% - 50% \_\_\_\_\_
- (e) Other (if less than 30%, or more than 50%, please indicate your percentage). \_\_\_\_\_
- (f) No such information \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(23) What is the percent of the outgoing special study students who have successfully completed at least one college-level mathematics course? (Rough estimate is sufficient).

- (a) 30% - 35% \_\_\_\_\_
- (b) 36% - 40% \_\_\_\_\_
- (c) 41% - 45% \_\_\_\_\_
- (d) 46% - 50% \_\_\_\_\_
- (e) If less than 30% or more than 50%, please indicate the exact percentage \_\_\_\_\_
- (f) No such information \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(24) What is the percent of the outgoing regular mathematically deficient students who have successfully completed at least one college-level mathematics course? (Rough estimate is sufficient).

- (a) 30% - 35% \_\_\_\_\_
- (b) 36% - 40% \_\_\_\_\_
- (c) 41% - 45% \_\_\_\_\_
- (d) 46% - 50% \_\_\_\_\_
- (e) If less than 30% or more than 50%, please indicate the exact percentage \_\_\_\_\_
- (f) No such information \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(25) What is your total enrollment in the mathematics developmental program? (Only for the students of special study program).

- (a) 51 - 80 \_\_\_\_\_
- (b) 81 - 110 \_\_\_\_\_
- (c) 111 - 140 \_\_\_\_\_
- (d) 141 - 170 \_\_\_\_\_
- (e) 171 - 200 \_\_\_\_\_
- (f) 201 - 250 \_\_\_\_\_
- (g) 251 - 300 \_\_\_\_\_
- (h) 301 - 350 \_\_\_\_\_
- (i) 351 - 400 \_\_\_\_\_
- (j) 401 - 450 \_\_\_\_\_
- (k) 450 - 500 \_\_\_\_\_
- (l) Other (please explain) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

(26) What is your overall enrollment of developmental mathematics classes?

- (a) 51 - 80 \_\_\_\_\_
- (b) 81 - 110 \_\_\_\_\_
- (c) 111 - 140 \_\_\_\_\_
- (d) 141 - 170 \_\_\_\_\_
- (e) 171 - 200 \_\_\_\_\_
- (f) 201 - 250 \_\_\_\_\_
- (g) 251 - 300 \_\_\_\_\_
- (h) 301 - 350 \_\_\_\_\_
- (i) 351 - 400 \_\_\_\_\_
- (j) 401 - 450 \_\_\_\_\_
- (k) 451 - 500 \_\_\_\_\_
- (l) Other (please specify) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

(27) How do you choose your instructors to teach developmental mathematics? (You could check more than one answer).

- (a) Rotating among the mathematics faculty members \_\_\_\_\_
- (b) Any faculty members in the Mathematics & Science Division \_\_\_\_\_
- (c) Best qualified instructors in your department \_\_\_\_\_
- (d) Faculty volunteers \_\_\_\_\_
- (e) Graduate assistants \_\_\_\_\_
- (f) Other (please specify) \_\_\_\_\_

Comments: \_\_\_\_\_

- (27A) Ideally, how would you like to choose your instructors to teach developmental mathematics? (You could check more than one answer).
- (a) Rotating among the mathematics faculty members \_\_\_\_\_
  - (b) Any faculty members in the Math & Science Division \_\_\_\_\_
  - (c) Best qualified instructors in your department \_\_\_\_\_
  - (d) Faculty volunteers \_\_\_\_\_
  - (e) Graduate assistants \_\_\_\_\_
  - (f) Other (please specify) \_\_\_\_\_
- 
- 

Comments: \_\_\_\_\_

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- (28) Do your instructors share their information concerning methods, techniques, materials in the instruction of the special studies students?
- (a) Yes \_\_\_\_\_
  - (b) No \_\_\_\_\_
  - (c) Other (please explain) \_\_\_\_\_
- 
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Comments: \_\_\_\_\_

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If (a) or (c), please answer (29).

- (29) How do you conduct the sharing information concerning methods, techniques, materials in the instruction of the special studies students? (You may check more than one answer).
- (a) Faculty meeting \_\_\_\_\_
  - (b) Scheduled seminar \_\_\_\_\_
  - (c) Informal exchange ideas \_\_\_\_\_
  - (d) News bulletin \_\_\_\_\_
  - (e) Other (please specify) \_\_\_\_\_
- 
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Comments: \_\_\_\_\_

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(29A) Ideally, how would you like to conduct the sharing information concerning methods, techniques, materials in the instruction of the special studies students. (You may check more than one answer).

- (a) Faculty meeting \_\_\_\_\_
- (b) Scheduled seminar \_\_\_\_\_
- (c) Informal exchange ideas \_\_\_\_\_
- (d) News bulletin \_\_\_\_\_
- (e) Other (please specify) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

(30) Do you know that we have support service personnel indirectly involved in special studies program at the various units of the University System?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_

If yes, please answer (31).

(31) Have your instructors referred their students to the support service personnel (counselor) for consultation due to the unsatisfactory performance in class?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_
- (c) No such information \_\_\_\_\_

If yes, please answer (32).

(32) Do you think that their students have much improvement after consultation with the support service personnel?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_
- (c) No such information \_\_\_\_\_

(33) Does your college have a committee of special studies?

- (a) Yes \_\_\_\_\_
- (b) No \_\_\_\_\_

If yes, please answer (34), (35).

(34) The committee of special studies consists of: (You could check more than one answer).

- (a) Head of Academic Division (Department) \_\_\_\_\_
- (b) Instructors of Special Studies \_\_\_\_\_
- (c) Support personnel \_\_\_\_\_
- (d) Other (please explain) \_\_\_\_\_

(35) The main objectives of the Committee of Special Studies are: (You could check more than one answer).

- (a) To serve as a communication between faculty members of the Special studies \_\_\_\_\_
- (b) To evaluate new applications and the achievements and progress of individual students of special studies \_\_\_\_\_
- (c) To share ideas, methods, techniques and materials in the improvement of the instruction of the special studies students. \_\_\_\_\_
- (d) To recommend and identify new courses for special studies students \_\_\_\_\_
- (e) Other (please explain) \_\_\_\_\_

Comments: \_\_\_\_\_

(35A) Ideally, the main objectives of the Committee of Special Studies should be the following: (Please list your objectives).

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

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\_\_\_\_\_

I would like to express my sincere appreciation for your cooperation in this study.

Sincerely yours,

Ping-Tung Chang

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