This version has been edited in the following manner:

1) As noted under Study Methodology in the College Selection section of this report, 12 colleges submitted data. Of those, 6 were included in the original report. The data for those 6 colleges are included in the tables in rows above the Total and Weighted Average rows. The data for the remaining 6 colleges have been added to the table in rows below the Total and Weighted Average rows.
2) All 12 college names have been removed and were replaced with College xx, where xx is a randomly assigned number ranging from 01 to 12.
3) All mathematics course numbers have been replaced with xxx.
4) The pages in the Index have been renumbered as a result of longer tables.
5) The descriptive statistics (SAS output), by college attachment is not included.

CSU/UC
MATHEMATICS DIAGNOSTIC TESTING PROJECT
&
QUANTITATIVE SYSTEMS LABORATORY
UNIVERSITY OF CALIFORNIA, SAN DIEGO
DEPARTMENT OF PSYCHOLOGY

CONSEQUENTIAL & CRITERION RELATED VALIDITY EVIDENCE FOR MDTP TESTS

DATA SUBMITTED IN RESPONSE TO CALIFORNIA COMMUNITY COLLEGES ASSESSMENT STANDARDS (3RD EDITION) FOR RENEWAL OF TEST INSTRUMENTS.

INDEX

THE RENEWAL PROCESS THROUGH FEBRUARY 1999

During the 1998-99 review cycle, material and documentation were presented to the California Community Colleges (CCC) in response to requirements of State of California Assembly Bill 3 (1986) and the procedures identified in the California Community Colleges Standards, Policies and Procedures for Assessment Instruments, (1998). The material and documentation were submitted for review in the approval process to "renew" the use of four Mathematics Diagnostic Testing Project (MDTP) tests as placement instruments in California Community Colleges. The CCC response to this submission was outlined in a preliminary report by Drs. Glasnapp & Poggio (December 22, 1998) and in the final report by Dr. Hallberg (February 11, 1999).

The final report was a compilation of the reviews and analyses produced by consultants to the CCC, members of the CCC Chancellors staff, and the appointed assessment review committee. It was found that the evidence submitted by MDTP failed to meet the standards set forth in Standards, Policies and Procedures for Assessment Instruments, (1998) for three of the four tests under review. The tests failing to meet standards for renewal were: Algebra Readiness (AR) Forms AR50/86 & AR50/90, Elementary Algebra (EA) Form EA50C86, and Intermediate Algebra (IA) Forms IA45C86 & IA45C91. The deficiencies noted in the report can be summarized as follows:

i. The evidence presented failed to achieve the criterion-related validity standard for an average correlation coefficient equal to or exceeding +0.35 between final course grades and placement test scores for each of the three tests.

ii. The MDTP choice of final course grades as the outcome variable in the criterion-related validity evidence may have lacked the "strength and adequacy" necessary to meet standards.

While failing to meet the standards set forth in Standards, Policies and Procedures for Assessment Instruments, (1998) the three tests were retained on the approved list for an additional six months, based on the "good faith effort shown in submitting evidence for renewal".

MDTP ACTIVITY IN RESPONSE TO THE CCC REPORT

The Mathematics Diagnostic Testing Project has taken seriously both the deficiencies noted and the suggestions made in both the preliminary and final reports. In response, MDTP has taken the following steps and has incorporated the following changes in the evidence presented in this report:

i. Dr. Hallberg commented that "given that the choice of end-of-course grade as the criterion variable did not produce the kind of results needed, it is suggested that one move to collection of data on a different outcome variable." Based on this comment, MDTP discontinued attempts to utilize final course grade as an outcome variable for the purposes of criterion-related validity evidence. Instead, MDTP selected first-test score as the outcome variable for criterion-related validity.

ii. In response to the concerns of Drs. Poggio and Glasnapp, the reporting of evidence for criterion-related validity is no longer aggregated across and/or within colleges. Evidence is reported on a course-by-course basis within each college.

iii. Recognizing the limitations of criterion-related validity, MDTP has collected and included evidence on consequential-related validity. This evidence includes self-assessment by students as to the appropriateness of placement and adequacy of preparation for course material. In addition, instructor evaluations of readiness for course material by students enrolled via a placement test are included.

iv. MDTP has contracted with the Quantitative Systems Laboratory at the University of California, San Diego (Mark Appelbaum, Larry McClure, and Monica Sweet) to provide methodological support during the planning phases of the study, to perform the statistical analyses, and to prepare this report.

STUDY METHODOLOGY

Brief Description of the Study

The purpose of this study is to validate the use of MDTP tests as part of the California Community College matriculation process. Specifically, the goal is to provide evidence for both consequential and criterion related validity for the Algebra Readiness, Elementary Algebra, and Intermediate Algebra placement tests consistent with CCC standards for renewal. To this end, colleges currently using these examinations were invited to participate in this study and asked to provide information on placement test scores and the class rosters. In order to assess consequential related validity, faculty administered a short in-class questionnaire to students addressing both method of placement and "fit" in the course. Faculty also rated each student on the degree to which they were prepared for the course material. Examples of the student survey, directions to instructors for completion of the preparedness ratings, first test score report, and preparedness-rating roster are included in the attachments section of this report. Below is a brief overview of the data elements provided by the colleges, and the content of the survey instruments utilized in the study.

Class Rosters

- Course title
- Course number
- Course section
- Instructor's name
- Students' names
- Students' identification numbers

The class rosters were those finalized by the colleges approximately two weeks after the start of the semester. Given the volume of data, adjustments to these rosters were not attempted.

Placement Test Results

- Student name
- Student identification number
- MDTP test taken (identified by MDTP name, e.g., AR50/86)
- Date test taken
- Test score (total)

Placement test data was collected from colleges for students who took Algebra Readiness, Elementary Algebra, or Intermediate Algebra tests between April and September 1999. This six-month testing window was selected to minimize enhancement or attenuation of mathematics skills in students between testing and course enrollment. A 12 or 18-month window would provide an unacceptable level of opportunity for students to acquire additional mathematical preparation, without retest. Given the linear nature of mathematical learning, any additional preparation by students would then tend to artificially increase the number of pairings of relatively low placement test score with unexpectedly high classroom performance when computing correlation coefficients for criterion-related validity.

Faculty Ratings of Student Preparedness[1]

- Date of roster completion
- Five-point Likert scale rating for each student

The rosters for preparedness ratings were derived from the finalized class rosters described above. Rating guidelines were provided to each instructor directing them to base their ratings on the student's demonstrated skills, understandings, and ability to comprehend course material as shown in homework, discussions, quizzes, tests, and other assignments. The scale was anchored so that a rating of "1" represented a student ill prepared for the course and who probably should have enrolled in a lower level course, and a rating of "5" represented a student exceptionally well prepared for the course and who possibly should have been enrolled in a more advanced course. Instructors were blind to the presence or absence of a placement test. Faculty were instructed to complete and return these instruments as quickly as possible, preferably before the first in-class test.

Faculty Report of Score on First Test Over Course Material

- Score for each student on the first in-class test over course material
- Maximum possible points for the first in-class test over course material

The rosters for reporting first test score were derived from the course enrollments as they stood two weeks into the semester. Faculty recorded the total points possible on the first test at the top of the roster. Each student's score was recorded in a column provided on the roster. Faculty were instructed to complete and return the report within one week of the examination.

[1] We appreciate the assistance of Drs. Poggio & Glasnapp. The survey instrument for students and the instructions provided to faculty for the instructor ratings of student preparedness come almost verbatim from handouts provided by them at the November 1997 CCC Presentations.

Student Questionnaires

- Student name
- Student identification number
- Student Social Security number
- Self-report of method of placement in the course
- Self-report of course recommendation by the college
- Self-report of appropriateness of course placement
- Self-report of academic preparation for the course material
- Self-report of degree to which non-school related responsibilities had or were anticipated to affect performance in the course.

The method of placement (question 1) allowed students to select from the eight available options the factor(s) they believed were responsible for course selection. Multiple responses were accepted.

Self-report of appropriateness of course placement (question 3) assessed student attitude toward the course in which they enrolled, without regard to the avenue by which that selection occurred. This question was forced choice, and students could select from three alternatives, indicating that they "belong" in the course, that they should be enrolled in an easier course, or that they should be enrolled in a more difficult course.

Self-report of academic preparation (question 4) allowed students to report on their level of academic preparation for the material, and a five-point Likert scale was provided for responses. The anchors corresponded to "not prepared" and "fully prepared" for the course material.

College Selection

All colleges currently using the Algebra Readiness (AR), Elementary Algebra (EA), or Intermediate Algebra (IA) tests were contacted for possible participation in the validity studies. As a result of this initial contact, sixteen colleges expressed interest in participation, and those sixteen colleges were visited by MDTP representatives. Of the sixteen (16) schools visited, fourteen (14) agreed to participate in both the consequential and criterion validity studies. Two of the fourteen schools were excluded, prior to data collection, either due to an inability to provide test scores or for other administrative reasons. The twelve colleges providing information and their abbreviations, in parentheses, are listed here:

1. College 01
2. College 02
3. College 03
4. College 04

5. College 05
6. College 06
7. College 07
8. College 08
9. College 09
10. College 10
11. College 11
12. College 12

Of the twelve colleges providing information, six are included in this report. The six colleges for which data is provided were selected prior to data entry. The six colleges selected for inclusion were:

1. College 02
2. College 04
3. College 05
4. College 09
5. College 10
6. College 11

It is important that the specific reason for this trimming be addressed, as well as the criteria by which the six colleges included were selected.

Time constraints and available resources limited inclusion to six of the twelve colleges. The final report from CCC on the first MDTP renewal submission was received in mid-February of this year. The time required to recruit colleges, develop and distribute survey instruments, and enter and analyze responses precluded collection of data during the spring semester. MDTP made a conscious decision not to collect data from the colleges during the summer sessions for a number of reasons, the most important of which were the accelerated pace and variable length of those sessions both within and across colleges. Fall semester represented the only opportunity to gather meaningful data and still meet the CCC submission deadline. The earliest that completed rosters and student questionnaires could be returned was mid to late September, with the bulk of the data received by MDTP in mid to late October.

The twelve colleges participating in the study produced remarkably high response rates[2]. For the courses identified for inclusion in the study, the lowest response rate for an individual college was

[2] The participating colleges are to be commended, not only for the extraordinarily high response rates, but also for their level of professionalism and spirit of cooperation. We are most appreciative of their efforts.

sixty-seven percent, and eight of the twelve colleges returned information on eighty percent or more of the targeted courses. Processing, data entry and analysis of the volume of material produced by the twelve colleges was physically impossible prior to the submission deadline of November 22, 1999.

Faced with the necessity of reducing the data processing and analysis load, three criteria were jointly applied to the twelve colleges. The goal was to find the combination of six schools from the twelve candidates that would maximize the yield, range of information, and generalizeability of results. The three criteria used in this selection process were:

i. Completeness of data. Of the twelve colleges submitting data to MDTP, the six selected for inclusion in this report had used all three of the tests under review: Algebra Readiness, Elementary Algebra, and Intermediate Algebra. Preference was given to schools from which it was reasonable to expect to receive data on each of the three tests. The intent was to select schools that maximized information about each of the tests under review, without sacrificing geographic and Ethnic/Cultural diversity.

ii. Geographic Diversity. The six colleges selected for inclusion represented the greatest possible range of site location from the twelve candidate schools consistent with the other two criteria.

iii. Ethnic/Cultural Diversity. Colleges were selected to maximize the Ethnic and Cultural diversity in the data submitted to the CCC. The rational for selection was consistent with the maximization strategy described previously.

While MDTP regrets the inability to submit data for all twelve colleges, we feel that the data submitted is representative of both the colleges currently using tests developed by MDTP and the California community college population. Should the CCC feel that some supplemental information from the remaining six schools is necessary in the immediate future to complete the renewal process, MDTP will prioritize the processing of the requested information. We will continue to process the remaining data as part of our commitment to the colleges that provided data to MDTP.

Course Selection

A careful study was made of the course catalogues from each of the schools that agreed to participate in the study. Based on the catalogue course descriptions, input from MDTP field personnel familiar with course content at the colleges, and the information provided by the colleges on test use, MDTP identified courses whose content matched the intended use of MDTP tests. This search also identified courses that were preparatory to or immediately subsequent to the intended use of the Algebra Readiness, Elementary Algebra, and Intermediate Algebra placement tests. Only courses meeting a preparatory, intended, or subsequent classification were included in the study. The table describing the abbreviation used for these classifications may be found on page 14 of this report.

MDTP CONSEQUENTIAL-RELATED &

& CRITERION-RELATED VALIDITY EVIDENCE:

DATA ORGANIZATION

Consequential-related validity evidence

Consequential-related validity evidence presented in this report is organized in the following manner:

TEST & CODE

College **1**	Course(s) **2**	# Sections **3**	Student Self-Assessment		Instructor
			Appropriate Placement **4**	Adequate Preparation **5**	Assessment of Student Preparation **6**
College 02					
College 04					
College 05					
College 09					
College 10					
College 11					
Totals N (n) **7**					
Weighted Average **8**					

TEST & CODE Table heading shows the MDTP test for which evidence is being presented, as well as the three-digit code for course classification.

1 College: Listed in this column are the source colleges for the data presented.

2 Course(s): This column contains the title(s) of the course(s) from which data were collected.

3 Sections: The number of sections from which data were collected.

4 Appropriate Placement: This information is from question three on the student questionnaire. Students could respond in one of three ways: "belong in this course", "should have enrolled in a lower course", or "should have enrolled in a higher course". The percentage presented represents only those students who responded with "belong in this course".

5 Adequate Preparation: This information is from question four on the student survey. Responses were on a five-point scale, the ends of the scale were "1" representing "not prepared" to "5" representing "fully prepared". The percentages reported are for students responding to the question with "adequately prepared" or better.

6 Instructor Assessment of Student Preparedness: This information is from the faculty ratings of student mathematical preparedness. Instructors rated students on a five-point scale, the end-points of the scale were "1" representing "Unprepared for the course. Probably should be enrolled in a lower course" and "5" representing "Exceptionally well prepared for the course. Possibly should be enrolled in a higher course." The percentages reported are for students assessed by instructors as "Adequately prepared for the course" or better.

7 Totals N (n): This row provides information on the total number of responses, **N** and the total number of students, **n,** self-rating or being rated by instructors in **4**, **5**, and **6** with a value of three or above.

8 Weighted average: This is the weighted average across the schools for columns **4**, **5**, and **6.**

Criterion-Related Validity Evidence

Criterion-Related Validity Evidence presented in this report is organized in the following manner:

TEST & CODE

1	2	# 3	Placement Test & First Class Exam Correlation 4	5	6
College	Course(s)	Sections	r	p	n
College 02					
College 04					
College 05					
College 09					
College 10					
College 11					
Totals **7**					

TEST & CODE Table heading shows the MDTP test and three-digit course classification code for the data presented.

1 College: Listed in this column are the source colleges for the data presented.

2 Course(s): This column contains the title(s) of the course(s) from which the data was collected.

3 Sections: The number of sections from which data was collected.

4 r: This is the observed correlation coefficient for each of the colleges and course(s).

5 p: This is the p-value associated with the reported correlations.

6 n: This is the number of observations used to compute each of the correlation coefficients.

7 Totals: Presented in this row is the weighted average correlation coefficient across the colleges for which data is presented and the number of observations used to compute the correlation coefficient.

The MDTP Algebra Readiness, Elementary Algebra, and Intermediate Algebra tests are represented in the tables that follow by the following abbreviations:

TEST TYPE	ABBREVIATION
Algebra Readiness	AR
Elementary Algebra	EA
Intermediate Algebra	IA

Course Classification Table[3]

TEST USED	COURSE CLASSIFICATION	ABBREVIATION
AR	Preliminary to AR Test	PAR
AR	Intended for AR Test	IAR
EA	Preliminary to EA Test	PEA
EA	Intended for EA Test	IEA
IA	Preliminary to IA Test	PIA
IA	Intended for IA Test	IIA
IA	Subsequent to IA Test	SIA

[3] SAR and SEA designations are not included because there were no uses of MDTP tests at these levels.

MDTP CONSEQUENTIAL VALIDITY TABLES

ALGEBRA READINESS TEST - PAR

College	Course(s)	# Sections	Student Self-Assessment		Instructor Assessment of Student Preparation
			Appropriate Placement	Adequate Preparation	
College 02	Math xxx	17	80.7% (263)	91.4% (309)	88.7% (297)
College 04	Math xxx	8	87.5% (51)	84.4% (49)	73.7% (42)
College 05	Math xxx	4	86.7% (85)	80.6% (70)	62.1% (59)
College 09	Math xxx	22	79.9% (264)	92.2% (306)	81.0% (269)
College 10	Math xxx	7	82.4% (89)	83.7% (92)	71.5% (78)
College 11	Math xxx	17	76.7% (132)	87.8% (151)	77.3% (133)
Totals N (n)		75	1104 (884)	1108 (977)	1100 (878)
Weighted Average			80.1%	88.2%	79.8%
College 01	----	----	----	----	----
College 03	----	----	----	----	----
College 06	Math xxx	11	77.4% (133)	84.8% (132)	67.9% (134)
College 07	Math xxx	19	77.3% (383)	88.2% (389)	61.6% (372)
College 08	----	----	----	----	----
College 12	----	----	----	----	----

ALGEBRA READINESS TEST - IAR

College	Course(s)	# Sections	Student Self-Assessment		Instructor Assessment of Student Preparation
			Appropriate Placement	Adequate Preparation	
College 02	Math xxx	18	78.9% (30)	94.7% (36)	83.8% (31)
College 04	----	----	----	----	----
College 05	Math xxx	4	81.7% (76)	88.2% (82)	84.0% (89)
College 09	Math xxx	19	78.9% (264)	92.2% (164)	81.4% (140)
College 10	Math xxx	20	86.5% (90)	79.3% (84)	61.6% (64)
College 11	Math xxx	19	86.5% (90)	88.5% (92)	86.8% (92)
Totals N (n)		80	524 (432)	527 (458)	513 (406)
Weighted Average			82.4%	86.9%	79.1%
College 01	Math xxx	25	79.9% (319)	87.1% (318)	67.9% (315)
College 03	----	----	----	----	----
College 06	Math xxx	14	79.6% (284)	81.8% (285)	61.8% (280)
College 07	Math xxx Math xxx	14 3	82.1% (290) 98.0% (51)	90.7% (290) 90.2% (51)	61.9% (273) 94.1% (51)
College 08	Math xxx	15	66.9% (290)	91.1% (291)	74.2% (295)
College 12	----	----	----	----	----

ELEMENTARY ALGEBRA TEST - PEA

College	Course(s)	# Sections	Student Self-Assessment: Appropriate Placement	Student Self-Assessment: Adequate Preparation	Instructor Assessment of Student Preparation
College 02	Math xxx	18	67.1% (51)	96.1% (73)	84.0% (63)
College 04	Math xxx	14	81.2% (138)	90.0% (152)	75.6% (127)
College 05	Math xxx	19	100.0% (5)	100.0% (5)	80.0% (4)
College 09	----	----	----	----	----
College 10	Math xxx	20	78.6% (143)	86.2% (157)	54.3% (99)
College 11	Math xxx	19	75.5% (114)	92.1% (140)	77.4% (120)
Totals N (n)		90	584 (451)	584 (527)	585 (413)
Weighted Average			77.2%	90.2%	70.6%
College 01	Math xxx	25	79.9% (319)	87.1% (318)	67.9% (315)
College 03	Math xxx	32	69.8% (470)	90.9% (472)	78.5% (469)
College 06	----	----	----	----	----
College 07	Math xxx Math xxx	14 3	82.1% (290) 98.0% (51)	90.7% (290) 90.2% (51)	61.9% (273) 94.1% (51)
College 08	----	----	----	----	----
College 12	Math xxx	11	81.5% (130)	93.1% (130)	84.6% (130)

ELEMENTARY ALGEBRA TEST - IEA

College	Course(s)	# Sections	Student Self-Assessment: Appropriate Placement	Student Self-Assessment: Adequate Preparation	Instructor Assessment of Student Preparation
College 02	Math xxx	16	74.2% (23)	87.1% (27)	90.3% (28)
College 04	Math xxx	12	80.5% (33)	90.5% (38)	82.9% (34)
College 05	Math xxx	16	----	----	----
College 09	Math xxx Math xxx	20 13	79.0% (98) 76.9% (70)	92.8% (115) 94.6% (87)	77.4% (96) 73.7% (67)
College 10	Math xxx	17	78.0% (99)	90.5% (115)	54.5% (66)
College 11	Math xxx	20	79.5% (221)	88.8% (246)	70.1% (197)
Totals N (n)		114	568 (544)	566 (628)	565 (488)
Weighted Average			78.6%	90.8%	70.8%
College 01	Math xxx	19	87.8% (139)	90.7% (140)	58.1% (124)
College 03	Math xxx	23	77.4% (199)	89.6% (202)	71.6% (194)
College 06	Math xxx	18	77.4% (190)	92.1% (189)	59.4% (165)
College 07	Math xxx	26	80.8% (386)	87.1% (387)	71.4% (364)
College 08	Math xxx	14	79.8% (193)	86.5% (193)	75.1% (193)
College 12	Math xxx	15	83.7% (172)	92.4% (170)	78.8% (170)

INTERMEDIATE ALGEBRA TEST - PIA

College	Course(s)	# Sections	Student Self-Assessment: Appropriate Placement	Student Self-Assessment: Adequate Preparation	Instructor Assessment of Student Preparation
College 02	Math xxx	16	66.7% (18)	96.3% (26)	92.6% (25)
College 04	Math xxx	12	55.6% (5)	88.8% (8)	77.8% (7)
College 05	Math xxx	16	----	----	----
College 09	----	----	----	----	----
College 10	Math xxx	17	78.9% (30)	89.5% (34)	50.0% (17)
College 11	----	----	----	----	----
Totals N (n)		61	74 (53)	74 (68)	70 (49)
Weighted Average			71.6%	91.9%	70.0%
College 01	Math xxx	19	87.8% (139)	90.7% (140)	58.1% (124)
College 03	Math xxx	23	77.4% (199)	89.6% (202)	71.6% (194)
College 06	----	----	----	----	----
College 07	Math xxx	26	80.8% (386)	87.1% (387)	71.4% (364)
College 08	----	----	----	----	----
College 12	Math xxx Math xxx	15 11	83.7% (172) 81.5% (130)	92.4% (170) 93.1% (130)	78.8% (170) 84.6% (130)

INTERMEDIATE ALGEBRA TEST - IIA

College	Course(s)	# Sections	Student Self-Assessment Appropriate Placement	Student Self-Assessment Adequate Preparation	Instructor Assessment of Student Preparation
College 02	Math xxx	2	100.0% (3)	100.0% (3)	100.0% (3)
	Math xxx	2	50.0% (1)	100.0% (2)	50.0% (1)
	Math xxx	2	73.3% (11)	93.3% (14)	100.0% (15)
College 04	Math xxx	4	95.0% (19)	81.0% (17)	71.4% (15)
	Math xxx	4	93.1% (27)	96.5% (28)	75.8% (22)
	Math xxx	5	69.0% (29)	97.6% (41)	76.2% (32)
College 05	Math xxx	6	92.3% (24)	88.4% (23)	65.4% (17)
	Math xxx	3	84.2% (16)	89.5% (17)	79.0% (15)
	Math xxx	2	69.2% (9)	100.0% (13)	84.7% (11)
	Math xxx	5	78.0% (32)	82.8% (34)	73.3% (22)
College 09	Math xxx	6	80.0% (20)	76.6% (19)	56.3% (9)
	Math xxx	4	69.2% (9)	100.0% (5)	77.7% (7)
	Math xxx	12	81.1% (35)	94.6% (35)	61.5% (24)
College 10	Math xxx	6	66.2% (43)	97.0% (63)	55.5% (35)
	Math xxx	4	73.3% (33)	80.4% (37)	55.5% (25)
College 11	Math xxx	13	90.3% (102)	84.5% (98)	76.1% (89)
	Math xxx	5	86.4% (51)	98.3% (57)	88.1% (52)
Totals N (n)		85	567 (459)	571 (507)	548 (394)
Weighted Average			81.0%	88.6%	71.9%
College 01	Math xxx	3	83.3% (12)	100% (12)	90.9% (11)
	Math xxx	3	90% (10)	90% (10)	100% (10)
	Math xxx	9	57.1% (7)	57.1% (7)	42.9% (7)
College 03	Math xxx	8	88.4% (43)	90.7% (43)	61.4% (44)
	Math xxx	6	91.9% (37)	73.0% (37)	64.9% (37)
College 06	Math xxx	6	96.4% (28)	82.1% (28)	60.0% (25)
	Math xxx	6	72.1% (43)	90.7% (43)	81.4% (43)
	Math xxx	4	89.7% (29)	89.7% (29)	51.9% (27)
College 07	----	----	----	----	----
College 08	Math xxx	9	81.8% (137)	92.0% (137)	76.5% (136)
	Math xxx	3	100.% (12)	100% (12)	100% (12)
	Math xxx	3	86.4% (22)	81.8% (22)	59.1% (22)
College 12	Math xxx	4	N/A (0)	N/A (0)	N/A (0)
	Math xxx	1	N/A (0)	N/A (0)	N/A (0)
	Math xxx	7	85.5% (69)	85.5% (69)	86.8% (68)
	Math xxx	4	96.9% (32)	90.6% (32)	65.6% (32)

INTERMEDIATE ALGEBRA TEST - SIA

College	Course(s)	# Sections	Student Self-Assessment		Instructor Assessment of Student Preparation
			Appropriate Placement	Adequate Preparation	
College 02	----	----	----	----	----
College 04	----	----	----	----	----
College 05	----	----	----	----	----
College 09	----	----	----	----	----
College 10	----	----	----	----	----
College 11	Math xxx	7	84.8% (28)	84.8% (28)	81.8% (27)
College 01	----	----	----	----	----
College 03	----	----	----	----	----
College 06	----	----	----	----	----
College 07	Math xxx Math xxx	17 10	84.4% (212) 87.9% (212)	89.2% (213) 86.2% (116)	64.8% (196) 67.5% (114)
College 08	Math xxx	5	N/A (0)	N/A (0)	N/A (0)
College 12	----	----	----	----	----

MDTP CRITERION VALIDITY TABLES

NOTE: THE CORRELATIONS ARE BASED ON STUDENTS WHO BOTH ENROLLED IN A COURSE AND HAD PLACEMENT TEST SCORES AVAILABLE.

ALGEBRA READINESS TEST - PAR

		#	Placement Test & First Class Exam Correlation		
College	Course(s)	Sections	r	p	n
College 02	Math xxx	17	.280	.001	177
College 04	Math xxx	8	-.118	ns	9
College 05	Math xxx	4	.285	.019	67
College 09	Math xxx	22	.215	.022[4]	114
College 10	Math xxx	7	.489	.001	68
College 11	Math xxx	17	.458	.001	94
Totals			.318		529
College 01	----	----	----	----	----
College 03	----	----	----	----	----
College 06	Math xxx	11	.252	.122	39
College 07	Math xxx	19	.347	.000	234
College 08	----	----	----	----	----
College 12	----	----	----	----	----

[4] For all statistical tests, a = .05

ALGEBRA READINESS TEST - IAR

		#	Placement Test & First Class Exam Correlation		
College	Course(s)	Sections	r	p	n
College 09	Math xxx	19	.638	.001	23
College 05	Math xxx	4	.398	.001	92
College 10	Math xxx	20	.334	.001	101
College 04	----	----	----	----	----
College 02	Math xxx	18	.079	ns	37
College 11	Math xxx	19	.428	.001	104
Totals			.371		357
College 01	Math xxx	25	.464	.000	80
College 03	----	----	----	----	----
College 06	Math xxx	14	.407	.000	80
College 07	Math xxx	14	.223	.253	28
College 08	Math xxx	15	.216	.153	45
College 12	----	----	----	----	----

ELEMENTARY ALGEBRA TEST - PEA

		#	Placement Test & First Class Exam Correlation		
College	Course(s)	Sections	r	p	n
College 09	----	----	----	----	----
College 05	Math xxx	19	.220	ns	5
College 10	Math xxx	20	.294	.001	177
College 04	Math xxx	14	.298	.038	49
College 02	Math xxx	18	.140	ns	76
College 11	Math xxx	19	.410	.001	155
Totals			.302		462
College 01	Math xxx	25	.464	.000	80
College 03	Math xxx	32	.367	.009	50
College 06	----	----	----	----	----
College 07	Math xxx Math xxx	14 3	.223 .624	.253 .098	28 8
College 08	----	----	----	----	----
College 12	Math xxx Math xxx	9 11	.623 -.266	.000 .404	30 12

ELEMENTARY ALGEBRA TEST - IEA

		#	Placement Test & First Class Exam Correlation		
College	Course(s)	Sections	r	p	n
College 02	Math xxx	16	.236	ns	29
College 04	Math xxx	12	.262	.098	41
College 05	Math xxx	16	n/a	n/a	0
College 09	Math xxx Math xxx	20 13	.545 ns	.001 ns	40 42
College 10	Math xxx	17	.278	.002	119
College 11	Math xxx	20	.319	.001	142
Totals			.289		413
College 01	Math xxx	19	N/A	N/A	0
College 03	Math xxx	23	.536	.000	43
College 06	Math xxx	18	.318	.036	44
College 07	Math xxx	26	.328	.001	98
College 08	Math xxx	14	.484	.001	44
College 12	Math xxx	15	.104	.614	26

INTERMEDIATE ALGEBRA TEST - PIA

		#	Placement Test & First Class Exam Correlation		
College	Course(s)	Sections	r	p	n
College 02	Math xxx	16	.259	ns	27
College 04	Math xxx	12	.005	ns	9
College 05	Math xxx	16	n/a	n/a	0
College 09	----	----	----	----	----
College 10	Math xxx	17	.317	.064	35
College 11	----	----	----	----	----
Totals			.255		71
College 01	Math xxx	19	N/A	N/A	0
College 03	Math xxx	23	.084	.602	41
College 06	----	----	----	----	----
College 07	Math xxx	26	.226	.046	79
College 08	----	----	----	----	----
College 12	Math xxx Math xxx	15 11	.228 .557	.118 .624	48 3

INTERMEDIATE ALGEBRA TEST - IIA

		#	Placement Test & First Class Exam Correlation		
College	Course(s)	Sections	r	p	n
College 02	Math xxx	2	n/a	n/a	0
	Math xxx	2	n/a	n/a	0
	Math xxx	2	n/a	ns	6
College 04	Math xxx	4	.632	.037	11
	Math xxx	4	.166	n/a	10
	Math xxx	5	.305	n/a	25
College 05	Math xxx	6	n/a	n/a	0
	Math xxx	3	n/a	n/a	0
	Math xxx	2	n/a	n/a	0
	Math xxx	5	n/a	n/a	0
College 09	Math xxx	6	n/a	n/a	1
	Math xxx	4	n/a	n/a	1
	Math xxx	12	.620	.042	11
College 10	Math xxx	6	.371	.020	39
	Math xxx	4	.409	.047	24
College 11	Math xxx	13	.149	ns	65
	Math xxx	5	.473	.015	26
Totals			.33		213 (211)
College 01	Math xxx	3	N/A	N/A	0
	Math xxx	3	N/A	N/A	0
	Math xxx	9	N/A	N/A	0
College 03	Math xxx	8	.625	.010	16
	Math xxx	6	.616	.004	20
College 06	Math xxx	6	-.626	.569	3
	Math xxx	6	.118	.674	15
	Math xxx	4	.577	.175	7
College 07	----	----	----	----	----
College 08	Math xxx	9	.340	.001	93
	Math xxx	3	-.709	.498	3
	Math xxx	3	-.460	.084	15
College 12	Math xxx	4	N/A	N/A	0
	Math xxx	1	N/A	N/A	0
	Math xxx	7	.399	.140	15
	Math xxx	4	.461	.539	4

INTERMEDIATE ALGEBRA TEST - SIA

		#	Placement Test & First Class Exam Correlation		
College	Course(s)	Sections	r	p	n
College 02	----	----	----	----	----
College 04	----	----	----	----	----
College 05	----	----	----	----	----
College 09	----	----	----	----	----
College 10	----	----	----	----	----
College 11	Math xxx	7	-.164	ns	7
College 01	----	----	----	----	----
College 03	----	----	----	----	----
College 06	----	----	----	----	----
College 07	Math xxx	17	.208	.075	74
College 08	Math xxx	5	N/A	N/A	0
College 12	----	----	----	----	----

NOTES ON CONSEQUENTIAL/CRITERION

EVIDENCE TABLES

1. Algebra Readiness Test – IAR: There were no courses in this classification for College XX.

2. Elementary Algebra Test – PEA: There were no courses in this classification for College XX

3. Elementary Algebra Test – IEA: There were no courses in this classification for College XX. Math xxx at College XX is included for the sake of completeness. This course is best described as a "self paced" and, as such, is inconsistent with the format of the other courses surveyed.

4. Intermediate Algebra Test – PIA: There were no courses in this classification for X. College XX offered courses in the classification but there were no placement test scores reported for students in those courses.

5. Intermediate Algebra Test – IIA & SIA: Consequential-related validity was based on students self-report of placement into the course by placement test. This is the reason for the differences in sample size between the reported consequential-related and criterion-related evidence in these classifications. We suspect that the majority of students reporting placement into these courses by test had taken the IA test prior to the April 1999 cutoff date established for placement test reporting.

6. Intermediate Algebra Test – SIA: Only College XX offered a course in this classification. .

ATTACHMENTS

- Sample of the Instructions to faculty
- Sample of the “Mathematical Preparedness Rating Roster”
- Sample of the “Score on First Test Over Course Material”
- Sample of the Student Survey
- Descriptive statistics (SAS output), by college, for responses to student survey questions three and four, and instructor rating of student preparedness.