



Disproportionate Impact Study

Prepared by:
Office of Institutional Research and Planning
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Introduction

The 2011 Disproportionate Impact Study is part of an on-going effort to validate the placement tests used by the San Diego Community College District (SDCCD). The tests will be validated every five years in compliance with the State Chancellor's Office (CCCCO) of Matriculation regulations.

Assessment results of first-time to college students who tested between May 1 and October 1 in 2008, 2009, and 2010 were analyzed utilizing the EEOC guidelines and approach suggested by Kangas (1992) to ensure equity in placement testing by evaluating whether student placements significantly differ by ethnicity. Placement scores were determined by a combination of test score plus points from multiple measures questions. For each skill level, a comparison was made between the average placement score of each ethnic group and the average placement score of all ethnic groups multiplied by 80%. Ethnic groups falling below the 80% threshold indicate disproportionate impact. If a disproportionate impact is observed, a recommendation would be made to develop and implement a plan to correct the disparity.

This study reviews nine placement tests utilized by the SDCCD in the following four subject areas:

Mathematics

- Accuplacer Arithmetic Assessment (online)
- MDTP-I Pre-Algebra Assessment (paper/pencil)
- Accuplacer Elementary Algebra Assessment (online)
- MDTP-III Intermediate Algebra Assessment (paper/pencil)

Reading

- Accuplacer Reading Comprehension Assessment (online)
- Companion Reading Comprehension Assessment (paper/pencil)

Writing

- Accuplacer Sentence Skills Assessment (online)
- Companion Sentence Skills Assessment (paper/pencil)

ESOL

- Combined English Language Skills Assessment (CELSA) (paper/pencil)

Highlight of the Findings

In each of the nine tests, the average scores by ethnic group exceeded the 80% threshold at each of the skill levels. It should, however, be stated that while data comprise three years of fall term assessments in an effort to maximize the group sample sizes, there remain groups within which there are too few students to draw conclusions about disproportionate impact; particularly among American Indian students and in the CELSA assessment skill levels. That being said, among groups with substantive sample sizes, all groups exceeded the 80% threshold in each of the skill levels and tests. A general conclusion can then be drawn that there appears to be inconsequential test bias and equity in placement among ethnic groups.

Mathematics Assessments

The online Accuplacer Arithmetic test or the paper and pencil MDTP-I Pre-Algebra test may be used to place students into basic skills math courses. Students who place at skill level M10 and M20 are advised to take basic skills Math 34A and Math 38, respectively. Students who place at skill level M30 are eligible to take basic skills Math 46. The online Accuplacer Elementary Algebra test or the paper and pencil MDTP-III Intermediate Algebra test may be used to place students into Associate level math courses (84, 85, 96, and 98) with a skill level of M40 and transfer level math courses (104, 107, 116, 118, 119, and 210A) with a skill level of M50. Students taking one of the advanced math tests for placement into an Associate or transfer level course are directed to take the basic skills math test with a score below the recommended cut score (skill level MA). However, since there is no actual placement into a course, for the purposes of this report, skill level MA is excluded.

See Tables 1 and 2 of Appendix A for clarification between the assessed math skill levels, cut scores, placement levels, and course placements. Also note that the numbers of students in some of the placement levels, particularly among American Indian students, are small.

Accuplacer Arithmetic

Placement scores are averaged across all ethnic groups for skill levels M10 (27.0), M20 (46.6) and M30 (87.6). The 80% thresholds for the skill levels are 21.6, 37.3 and 70.1, respectively. All of the groups exceeded the 80% thresholds; therefore, there is no discernable disproportionate impact.

Table 1. Accuplacer Arithmetic scores for Math 34A (skill level M10)

Ethnic Group	N	Mean Score
African American	299	26.7
American Indian	6	27.8
Asian/Pacific Islander	77	27.4
Filipino	48	27.5
Latino	535	27.0
White	174	27.6
Other/Unreported	82	26.6
Total/Average	1,221	27.0
80% Threshold		
	---	21.6

Source: SDCCD Information System

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Table 2. Accuplacer Arithmetic scores for Math 38 (skill level M20)

Ethnic Group	N	Mean Score
African American	339	45.1
American Indian	14	46.1
Asian/Pacific Islander	151	47.1
Filipino	117	46.9
Latino	1,086	46.6
White	549	47.5
Other/Unreported	155	46.8
Total/Average	2,411	46.6
80% Threshold		
	---	37.3

Source: SDCCD Information System

Table 3. Accuplacer Arithmetic scores for Math 46 (skill level M30)

Ethnic Group	N	Mean Score
African American	118	83.3
American Indian	13	87.6
Asian/Pacific Islander	124	86.8
Filipino	85	84.9
Latino	664	86.9
White	590	89.7
Other/Unreported	134	87.9
Total/Average	1,728	87.6
80% Threshold		
	---	70.1

Source: SDCCD Information System

MDTP-I Pre-Algebra

The average placement score for skill level M10 is 16.3, M20 is 25.9, and M30 is 38.0. The 80% thresholds for the skill levels are 13.0, 20.7 and 30.4, respectively. All of the groups exceeded the 80% thresholds; therefore, there is no discernable disproportionate impact.

Table 4. MDTP-I scores for Math 34A (skill level M10)

Ethnic Group	N	Mean Score
African American	13	16.2
American Indian	0	.
Asian/Pacific Islander	7	16.1
Filipino	6	16.8
Latino	25	16.1
White	25	16.2
Other/Unreported	5	17.8
Total/Average	81	16.3
80% Threshold		
	---	13.0

Source: SDCCD Information System

Table 5. MDTP-I scores for Math 38 (skill level M20)

Ethnic Group	N	Mean Score
African American	36	25.9
American Indian	2	27.0
Asian/Pacific Islander	22	26.4
Filipino	13	25.7
Latino	110	25.6
White	105	26.1
Other/Unreported	32	25.9
Total/Average	320	25.9
80% Threshold		
	---	20.7

Source: SDCCD Information System

Table 6. MDTP-I scores for Math 46 (skill level M30)

Ethnic Group	N	Mean Score
African American	29	37.7
American Indian	5	35.2
Asian/Pacific Islander	60	39.9
Filipino	30	39.1
Latino	133	36.6
White	222	38.5
Other/Unreported	56	36.9
Total/Average	535	38.0
80% Threshold		
	---	30.4

Source: SDCCD Information System

Accuplacer Elementary Algebra

Average placement scores for math skill levels M40 and M50 are 82.6 and 107.8, respectively. All of the groups exceeded the 80% thresholds of 66.0 and 86.2, respectively, and no disproportionate impact is observed.

Table 7. Accuplacer Elementary Algebra scores for Math 84, 85, 96 & 98 (skill level M40)

Ethnic Group	N	Mean Score
African American	38	82.8
American Indian	2	78.5
Asian/Pacific Islander	98	82.8
Filipino	68	83.2
Latino	345	82.2
White	221	83.0
Other/Unreported	77	82.1
Total/Average	849	82.6
80% Threshold		
	---	66.0

Source: SDCCD Information System

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Table 8. Accuplacer Elementary Algebra scores for Math 104, 107, 116, 118, 119, 210A (skill level M50)

Ethnic Group	N	Mean Score
African American	49	104.3
American Indian	9	105.2
Asian/Pacific Islander	286	111.3
Filipino	145	108.0
Latino	416	105.9
White	388	107.7
Other/Unreported	115	107.6
Total/Average	1,408	107.8
<hr/>		
80% Threshold	---	86.2

Source: SDCCD Information System

MDTP-III Intermediate Algebra

Average placement scores for math skill levels M40 and M50 are 22.4 and 33.3. All of the groups exceeded the 80% thresholds of 17.9 and 26.6, respectively, and no disproportionate impact is observed.

Table 9. MDTP-III scores for Math 84, 85, 96, 98 (skill level M40)

Ethnic Group	N	Mean Score
African American	6	21.7
American Indian	0	.
Asian/Pacific Islander	36	23.0
Filipino	18	22.8
Latino	57	22.1
White	54	22.3
Other/Unreported	17	22.5
Total/Average	188	22.4
<hr/>		
80% Threshold	---	17.9

Source: SDCCD Information System

Table 10. MDTP-III scores for Math 104, 107, 116, 118, 119, 210A (skill level M50)

Ethnic Group	N	Mean Score
African American	12	31.5
American Indian	0	.
Asian/Pacific Islander	89	36.6
Filipino	25	31.1
Latino	44	31.7
White	63	31.7
Other/Unreported	17	30.5
Total/Average	250	33.3
<hr/>		
80% Threshold	---	26.6

Source: SDCCD Information System

Reading Assessments

The online Accuplacer Reading Comprehension test or the paper and pencil Companion Reading Comprehension test may be used to place students into basic skills or Associate/transfer level reading courses. Students who have a score of 50 or below are recommended to receive English advising (skill level R2) or are recommended to take the ESOL test if they indicate that English is their second language (skill level R1). Since these skill levels do not directly result in placement into any courses, for the purposes of this report, skill levels R1 and R2 are excluded. Students who place at skill levels R3 and R4 are eligible to take basic skills English 42 and English 48, respectively. Students who place at both reading skill level R5 and writing skill level W5 are eligible to take Associate/transfer level English 101 and 105.

See Table 3 of Appendix A for clarification between the assessed reading skill levels, cut scores, placement levels, and course placements. Also note that the numbers of students in some of the placement levels, particularly among American Indian students, are small.

Accuplacer Reading Comprehension

Placement scores are averaged across all ethnic groups for skill levels R3 (59.1), R4 (75.0) and R5 (97.8). The 80% thresholds for the skill levels are 47.2, 60.0 and 78.2, respectively. All of the groups exceeded the 80% thresholds; therefore, there is no discernable disproportionate impact.

Table 11. Accuplacer Reading Comprehension scores for English 42 (skill level R3)

Ethnic Group	N	Mean Score
African American	157	58.9
American Indian	6	57.3
Asian/Pacific Islander	108	58.4
Filipino	60	58.9
Latino	427	58.8
White	138	60.4
Other/Unreported	62	59.6
Total/Average	958	59.1
80% Threshold		
	---	47.2

Source: SDCCD Information System

Table 12. Accuplacer Reading Comprehension scores for English 48 (skill level R4)

Ethnic Group	N	Mean Score
African American	200	74.6
American Indian	11	73.6
Asian/Pacific Islander	140	74.3
Filipino	111	74.8
Latino	751	74.9
White	335	75.8
Other/Unreported	103	75.3
Total/Average	1,651	75.0
80% Threshold		
	---	60.0

Source: SDCCD Information System

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Table 13. Accuplacer Reading Comprehension scores for English 101/105 (skill level R5)

Ethnic Group	N	Mean Score
African American	274	95.8
American Indian	22	97.7
Asian/Pacific Islander	290	96.9
Filipino	217	95.4
Latino	1,352	96.1
White	1,281	100.2
Other/Unreported	312	99.6
Total/Average	3,748	97.8
80% Threshold		
	---	78.2

Source: SDCCD Information System

Companion Reading Comprehension

Average placement scores for reading skill levels R3, R4 and R5 are 59.0, 75.0 and 98.5, respectively. All of the groups exceed the 80% thresholds of 47.2, 60.0 and 78.8, respectively, and no disproportionate impact is observed.

Table 14. Companion Reading Comprehension scores for English 42 (skill level R3)

Ethnic Group	N	Mean Score
African American	23	58.0
American Indian	1	64.0
Asian/Pacific Islander	56	58.4
Filipino	19	58.2
Latino	94	59.2
White	57	59.4
Other/Unreported	29	59.8
Total/Average	279	59.0
80% Threshold		
	---	47.2

Source: SDCCD Information System

Table 15. Companion Reading Comprehension scores for English 48 (skill level R4)

Ethnic Group	N	Mean Score
African American	23	75.8
American Indian	3	77.0
Asian/Pacific Islander	67	74.5
Filipino	35	74.5
Latino	113	75.1
White	105	75.3
Other/Unreported	28	74.1
Total/Average	374	75.0
80% Threshold		
	---	60.0

Source: SDCCD Information System

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Table 16. Companion Reading Comprehension scores for English 101/105 (skill level R5)

Ethnic Group	N	Mean Score
African American	46	97.3
American Indian	5	97.4
Asian/Pacific Islander	90	96.1
Filipino	46	97.5
Latino	203	97.7
White	361	99.7
Other/Unreported	82	98.7
Total/Average	833	98.5
80% Threshold	---	78.8

Source: SDCCD Information System

Writing Assessments

The online Accuplacer Sentence Skills test or the paper and pencil Companion Sentence Skills test may be used to place students into basic skills or Associate/transfer level writing courses. Students who have a score of 52 or below are recommended to receive English advising (skill level W2) or are recommended to take the ESOL test if they indicate that English is their second language (skill level W1). Since these skill levels do not directly result in placement into any courses, for the purposes of this report, skill levels W1 and W2 are excluded. Students who place at skill levels W3 and W4 are eligible to take basic skills English 43 and English 49, respectively. Students who place at both reading skill level R5 and writing skill level W5 are eligible to take Associate/transfer level English 101 and 105.

See Table 4 of Appendix A for clarification between the assessed writing skill levels, cut scores, placement levels, and course placements. Also note that the numbers of students in some of the placement levels, particularly among American Indian students, are small.

Accuplacer Sentence Skills

Placement scores are averaged across all ethnic groups for skill levels W3 (70.8), W4 (93.8) and W5 (115.1). The 80% thresholds for the skill levels are 56.6, 75.0 and 92.1, respectively. All of the groups exceeded the 80% thresholds; therefore, there is no discernable disproportionate impact.

Table 17. Accuplacer Sentence Skills scores for English 43 (skill level W3)

Ethnic Group	N	Mean Score
African American	253	70.4
American Indian	17	71.6
Asian/Pacific Islander	194	69.9
Filipino	111	71.5
Latino	765	70.6
White	332	72.0
Other/Unreported	132	70.1
Total/Average	1,804	70.8
80% Threshold		
	---	56.6

Source: SDCCD Information System

Table 18. Accuplacer Sentence Skills scores for English 49 (skill level W4)

Ethnic Group	N	Mean Score
African American	317	92.9
American Indian	12	95.1
Asian/Pacific Islander	205	93.5
Filipino	182	94.5
Latino	1,235	93.4
White	802	94.4
Other/Unreported	185	94.8
Total/Average	2,938	93.8
80% Threshold		
	---	75.0

Source: SDCCD Information System

Table 19. Accuplacer Sentence Skills scores for English 101/105 (skill level W5)

Ethnic Group	N	Mean Score
African American	61	113.0
American Indian	10	117.5
Asian/Pacific Islander	139	115.7
Filipino	94	115.5
Latino	529	114.3
White	616	115.6
Other/Unreported	160	115.3
Total/Average	1,609	115.1
80% Threshold		
	---	92.1

Source: SDCCD Information System

Companion Sentence Skills

Average placement scores for writing skill levels W3, W4 and W5 are 71.1, 95.1 and 115.0, respectively. All of the groups exceeded the 80% thresholds of 56.8, 76.1 and 92.0, respectively, and no disproportionate impact is observed.

Table 20. Companion Sentence Skills scores for English 43 (skill level W3)

Ethnic Group	N	Mean Score
African American	29	72.5
American Indian	3	66.0
Asian/Pacific Islander	59	70.2
Filipino	21	69.8
Latino	105	70.9
White	98	72.4
Other/Unreported	32	69.2
Total/Average	347	71.1
80% Threshold		
	---	56.8

Source: SDCCD Information System

Table 21. Companion Sentence Skills scores for English 49 (skill level W4)

Ethnic Group	N	Mean Score
African American	38	94.7
American Indian	2	94.0
Asian/Pacific Islander	80	95.4
Filipino	41	93.5
Latino	182	95.6
White	224	95.1
Other/Unreported	63	94.7
Total/Average	630	95.1
80% Threshold		
	---	76.1

Source: SDCCD Information System

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Table 22. Companion Sentence Skills scores for English 101/105 (skill level W5)

Ethnic Group	N	Mean Score
African American	25	114.4
American Indian	4	113.3
Asian/Pacific Islander	74	114.6
Filipino	37	114.2
Latino	123	114.8
White	201	115.6
Other/Unreported	44	114.7
Total/Average	508	115.0
80% Threshold	---	92.0

Source: SDCCD Information System

ESOL Assessment

The paper and pencil Combined English Language Skills Assessment (CELSA) is used to place students into credit ESOL courses which are between two to five levels below the English transfer level. Students who place at skill level 19 are eligible to take ESOL 19. Students who place at skill level 20 are eligible to take ESOL 20, 21, or 22. Students who place at skill level 30 are eligible to take ESOL 30, 31, or 32. Finally, students who place at skill level 40 are eligible to take ESOL 40.

See Table 5 of Appendix A for clarification between the assessed writing skill levels, cut scores, placement levels, and course placements.

Combined English Language Skills Assessment (CELSA)

Placement scores are averaged across all ethnic groups for skill levels 19 (41.4), 20 (59.0), 30 (68.3) and 40 (76.5). The 80% thresholds for the skill levels are 33.2, 47.2, 54.6 and 61.2, respectively. While all of the groups exceeded the 80% thresholds, the sample sizes of many of the groups are small and a determination of whether or not there is a disproportionate impact should be made with caution. Among groups with substantive sample sizes, there was no disproportionate impact observed.

Table 23. CELSA scores for ESOL 19 (skill level 19)

Ethnic Group	N	Mean Score
African American	24	36.4
American Indian	0	.
Asian/Pacific Islander	78	42.1
Filipino	3	53.0
Latino	62	40.2
White	29	44.8
Other/Unreported	33	41.9
Total/Average	229	41.4
80% Threshold	---	33.2

Source: SDCCD Information System

Table 24. CELSA scores for ESOL 20, 21, 22 (skill level 20)

Ethnic Group	N	Mean Score
African American	9	58.1
American Indian	0	.
Asian/Pacific Islander	42	59.1
Filipino	5	61.2
Latino	48	59.4
White	21	58.5
Other/Unreported	11	57.6
Total/Average	136	59.0
80% Threshold	---	47.2

Source: SDCCD Information System

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Table 25. CELSA scores for ESOL 30, 31, 32 (skill level 30)

Ethnic Group	N	Mean Score
African American	7	66.7
American Indian	0	.
Asian/Pacific Islander	63	68.4
Filipino	3	66.7
Latino	59	68.8
White	20	67.6
Other/Unreported	17	68.2
Total/Average	169	68.3
80% Threshold	---	54.6

Source: SDCCD Information System

Table 26. CELSA scores for ESOL 40 (skill level 40)

Ethnic Group	N	Mean Score
African American	4	75.8
American Indian	0	.
Asian/Pacific Islander	23	76.3
Filipino	1	76.0
Latino	37	76.9
White	9	76.2
Other/Unreported	5	76.2
Total/Average	79	76.5
80% Threshold	---	61.2

Source: SDCCD Information System

Appendix A: Skill Levels, Scores and Placement Crosswalks

2008 - 2010 Disproportionate Impact Study

Table 1. Accuplacer Arithmetic and MDTP-I Pre-Algebra skill levels, scores and placements

Math Skill Level	Accuplacer Arithmetic Scores	MDTP-I Score	Placement Level	Course Placement
M10	20 - 32	0 - 19	Basic Skills	MATH 34A (formerly 32)*
M20	33 - 65	20 - 30	Basic Skills	MATH 38 (formerly 35)*
M30	66+	31+	Basic Skills	MATH 46 (formerly 95)

*Advisory only, no skill level requirement for Math 034A or 038.

Table 2. Accuplacer Elementary Algebra and MDTP-III Intermediate Algebra skill levels, scores and placements

Math Skill Level	Accuplacer Algebra Scores	MDTP-III Score	Placement Level	Course Placement
MA	20 - 74	0 - 19	Take Arith Test	n/a
M40	75 - 92	20 - 25	Associate	MATH 84*, 85*, 98*, 96
M50	93+	26+	Transfer	MATH 104, 107, 116, 118, 119, 210A

* These courses cannot be used to meet the prerequisite for any transfer-level math course.

Table 3. Accuplacer and Companion Reading Comprehension skill levels, scores and placements

Reading Skill Level	Accuplacer & Companion Scores	Placement Level	Course Placement
R1	0 - 50	Take ESOL Test*	n/a
R2	0 - 50	Need English Advising	n/a
R3	51 - 66	Basic Skills	ENGL 42
R4	67 - 82	Basic Skills	ENGL 48 (formerly 56)
R5 & W5	83+	Associate/Transfer	ENGL 101/105

*If English is second language

Table 4. Accuplacer and Companion Sentence Skills skill levels, scores and placements

Writing Skill Level	Accuplacer & Companion Scores	Placement Level	Course Placement
W1	0 - 52	Take ESOL Test*	n/a
W2	0 - 52	Need English Advising	n/a
W3	53 - 82	Basic Skills	ENGL 43
W4	83 - 105	Basic Skills	ENGL 49 (formerly 51)
W5 & R5	106+	Associate/Transfer	ENGL 101/105

*If English is second language

Table 5. CELSA skill levels, scores and placements

ESOL Skill Level	CESLA Scores	Placement Level	Course Placement
19	0 - 54	19 - Five Levels Below Transfer	ESOL 19
20	55 - 63	20 - Four Levels Below Transfer	ESOL 20, 21, 22
30	64 - 73	30 - Three Levels Below Transfer	ESOL 30, 31, 32
40	74 - 79	40 - Two Levels Below Transfer	ESOL 40
n/a	80+	Take Native Speaker Test	n/a

General Note 1. Scores include test scores plus multiple measures points.

General Note 2. Course placements reflect the most currently approved course sequencing.