



Peralta Community College District
Berkeley City College, College of Alameda, Laney College, Merritt College

Report on Disproportionate Impact

Office of Institutional Research

May 2015

Introduction

Policies regarding how students are placed into their initial courses in English, math and ESL directly impacts students, particularly those matriculating from high school. Considering that over half of new students are placed into below transfer-level courses, and that this rate is significantly higher among certain demographic groups, it is of critical importance to make sure that placement processes are not functioning to the disadvantage of any students. Furthermore, according to the standards, policies, and procedures for the evaluation of assessment instruments used in the California community colleges (2001), disproportionate impact must be monitored for various demographic groups on an on-going basis. Therefore, the office Institutional Research (IR) conducted a study to assess potential adverse effects of the placement process for English and math courses from fall 2011 to fall 2014¹ with respect to subgroups identified by gender, ethnicity, age, and disability status.

This report is organized as follows: a brief overview of the results, a section providing a description of the placement process, and another describing the criteria for evaluating disproportional impact. This is followed by a section titled “Disproportional Impact Evidence for Transfer Level English Course” summarizing results of analyzing placement patterns within the subgroups mentioned above. A similarly structured section comes after for math courses, followed by a section providing results of regression analyses, and finally a conclusion highlighting findings which are relevant to institutional processes around matriculation, accreditation and student equity.

Note that a new ESL writing test was recently adopted by Peralta colleges for use in placement. ESL placement will be examined in the same manner as English and math once there is a sufficiently large sample to work with.

Overview of Results

Male, White, younger (19 years and under), and no disability status students were considered the standard, majority groups.

English: Transfer level course

- Gender: no disproportionate impact
- Ethnicity: disproportionate impact for African American, Asian, and Hispanic students
- Age: disproportionate impact for students over age 40
- DSPTS: disproportionate impact for students with disabilities

Math: Transfer level courses

- Gender: a slight disproportionate impact for female students
- Ethnicity: disproportionate impact for African American and Hispanic students
- Age: disproportionate impact for students over age 30

- DSPS: disproportionate impact for students with disabilities

Placement Process for English and Math

The four colleges in the Peralta Community College District (PCCD) utilize approved second-party assessment instruments to place students into English and math courses. For placement into English courses all 4 colleges use ACT COMPASS Reading and Writing tests; and ACT COMPASS math battery of tests for placement into math courses. Based on their writing and reading scores, students are recommended for placement into 3 different levels of English courses: transfer level, one level below transfer, and 2 levels below transfer. For math, depending on their score on the 4 subtests, students are recommended into 5 different levels of math courses: transfer level or one to 4 levels below transfer (see Appendix A for a list of the courses).

Criteria for Assessing Disproportionate Impact

Disproportionate impact refers to the adverse effect of a practice that could disproportionately affect individuals belonging to particular groups, such as gender or ethnicity.² Evaluation of impact is conducted by comparing the minority placement rate to the majority rate in the upper level courses. Disproportionate impact exists when the proportion of some group falls below 80% of the majority group's score.³ In order to avoid confusing the benchmark statistic with percentages shown in tables, we will denote it with the symbol β_{80} . β_{80} is calculated for the upper level courses by multiplying the placement percent of the majority group by 80%. All other groups' rates are then compared to that value.

Disproportionate impact analyses were conducted with students at PCCD who were placed into their initial English or math course from fall 2011 to fall 2014, and the earliest assessment scores and course taken were included in the analyses. Male, White, younger (age 19 or younger), with no disability status students composed the majority or standard groups in this study. These groups were chosen as the standard for four reasons: First, they generally had the highest placement rate in the upper level courses (e.g., males for English and math). Second, they are traditionally considered the majority group (e.g., White students). Third, they are the typical college age population (e.g., age 19 and under). Lastly, they are a numeric majority (e.g., no disability status students).

Disproportional Impact Evidence for Transfer Level English Course

Three sets of results are presented in two tables for the subgroups within each demographic group. The first table describes the number of students placed into the 3 levels of English courses for each subgroup. The second table displays the percentage of students in the transfer level English course for each subcategory, the 80% benchmark, and the deviation or gap from β_{80} for each subgroup. For the gaps from the benchmark, positive numbers indicate placement rates above β_{80} and thus no disproportionate impact, whereas negative numbers indicate rates below the benchmark and possible disproportionate impact (see Appendix B for disproportionate impact for all course levels).

Gender Groups

Of the 13,642 students in the sample, 51.6% were female and 44.5% were male. Table 1 describes the number of students placed into the 3 levels of English courses by gender.

Table 1: Number of Students by Gender for English Courses

Gender	Transfer Level	1 Level Below	2 Levels Below	Total	Percent
Female	3,217	1,948	1,879	7,044	51.6
Male	3,055	1,644	1,378	6,077	44.5
Unknown	185	110	226	521	3.8
Total	6,457	3,702	3,483	13,642	100

Note: Transfer level = English 1A; 1 level below = English 201A; 2 levels below = English 204A, 267A, 268A, 269A

Male students were used as the standard for comparison. There was no indication of disproportionate impact for placement into the transfer level English course. As can be seen in Table 2, 45.7% of the female students were placed into English 1A, higher than the 40.2% benchmark (i.e., 5.5% of female students were placed above the value obtained by multiplying the outcome for males by 0.80). Because of the small sample size of the unknown group, the results are not interpreted.

Table 2: Disproportionate Impact by Gender for Transfer level English Course

Gender	Transfer Level	Gap from Benchmark
Female	45.7%	5.5%
Male	50.3%	--
Unknown	35.5%	-4.7%
β_{80}	40.2%	

Ethnic Groups

The largest ethnic group was composed of African Americans (33.6%), followed by Hispanic (18.2%), Asians (17.2%), and Whites (11.5%). The other groups were much smaller and their results should be interpreted with caution (see Table 3).

Table 3: Number of Students by Ethnicity for English Courses

Ethnicity	Transfer Level	1 Level Below	2 Levels Below	Total	Percent
African American	1,528	1,350	1,700	4,578	33.6
Asian	1,257	638	453	2,348	17.2
Hispanic	1,015	841	630	2,486	18.2
Multiple	1,063	428	361	1,852	13.6
Native American	14	13	14	41	0.3
Pacific Islander	45	41	21	107	0.8
White	1,197	211	164	1,572	11.5
Unknown	338	180	140	658	4.8
Total	6,457	3,702	3,483	13,642	100

Note: Transfer level = English 1A; 1 level below = English 201A; 2 levels below = English 204A, 267A, 268A, 269A

White students were used as the standard for comparison. There was evidence of disproportionate impact for all minority groups for the transfer level English course (see Table 4). The standard group had a 76.1% placement rate, whereas the other groups ranged from 33.4% to 57.4%. As can be seen in the third column of Table 4 (Gap from Benchmark) African American students evidenced the largest gap (27.5% below the 60.9% β_{80}), followed by Hispanic students (20.1%) and Asian students (7.4%) for the transfer level English course. Native American (26.8%) and Pacific Islander (18.9%) students also exhibited disproportionate impact, but their sample sizes were very small.

Table 4: Disproportionate Impact by Ethnicity for Transfer level English Course

Ethnicity	Transfer Level	Gap from Benchmark
African American	33.4%	-27.5%
Asian	53.5%	-7.4%
Hispanic	40.8%	-20.1%

Multiple	57.4%	-3.5%
Native American	34.1%	-26.8%
Pacific Islander	42.1%	-18.9%
White	76.1%	--
Unknown	51.4%	-9.5%
<i>β_{80}</i>	60.9%	

Age Groups

As can be seen in Table 5, a majority of the students were 19 years or younger (40.7%) or between 20 and 24 years (32.6%).

Table 5: Number of Students by Age for English Courses

Age	Transfer Level	1 Level Below	2 Levels Below	Total	Percent
19 and Under	2,742	1,581	1,233	5,556	40.7
20-24	2,101	1,234	1,111	4,446	32.6
25-29	725	325	345	1,395	10.2
30-39	551	303	312	1,166	8.5
40 and Over	338	259	482	1,079	7.9
Total	6,457	3,702	3,483	13,642	100

Note: Transfer level = English 1A; 1 level below = English 201A; 2 levels below = English 204A, 267A, 268A, 269A

Students age 19 or younger were used as the standard for comparison (49.4% placement rate). Each age group's placement rate was within 80% of the standard group's placement rate, except for the oldest group. Students age 40 or older evidenced disproportionate impact for the transfer level English course (31.3% in comparison to the 39.5% β_{80} , a gap of 8.2%).

Table 6: Disproportionate Impact by Age for Transfer level English Course

Age	Transfer Level	Gap from Benchmark
19 and Under	49.4%	--
20-24	47.3%	7.8%
25-29	52.0%	12.5%

30-39	47.3%	7.8%
40 and Over	31.3%	-8.2%
<i>β_{80}</i>	39.5%	

Disable Students Program and Services (DSPS)

Table 7 displays the number of students with and without disabilities, with 6.4% having disabilities.

Table 7: Number of Students by DSPS for English Courses

DSPS	Transfer Level	1 Level Below	2 Levels Below	Total	Percent
No	6,235	3,506	3,030	12,771	93.6%
Yes	222	196	453	871	6.4%
Total	6,457	3,702	3,483	13,642	100.0%

Note: Transfer level = English 1A; 1 level below = English 201A; 2 levels below = English 204A, 267A, 268A, 269A

Students with no disabilities were used as the standard for comparison (see Table 8). There was evidence of disproportionate impact for placement into the transfer level English course for students with disabilities (25.5% in comparison to the 39.1% β_{80} , a gap of 13.6%).

Table 8: Disproportionate Impact by DSPS for Transfer level English Course

DSPS	Transfer Level	Gap from Benchmark
No	48.8%	--
Yes	25.5%	-13.6%
<i>β_{80}</i>	39.1%	

Disproportional Impact Evidence for Transfer Level Math Courses

Similar to the results for the English courses, two tables are presented for each demographic group for the Math courses. The first table describes the number of students placed into the 5 levels of math courses for each subgroup. The second table displays the percentage of students in the transfer level math courses for each subcategory, the 80% benchmark, and the deviation

or gap from β_{80} for each subgroup. For the gaps from the benchmark, positive numbers indicate placement rates above β_{80} and thus no disproportionate impact, whereas negative numbers indicate rates below the benchmark and possible disproportionate impact (see Appendix B for disproportionate impact for all course levels).

Gender Groups

Of the 14,592 students in the sample, 52.3% were female and 44.0% were male (see Table 9). Again, the results for the unknown group are not interpreted because of the small sample size.

Table 9: Number of Students by Gender for Math Courses

Gender	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below	Total	Percent
Female	1,564	1,024	1,878	1,495	1,666	7,627	52.3%
Male	1,907	980	1,569	974	995	6,425	44.0%
Unknown	79	50	106	131	174	540	3.7%
Total	3,550	2,054	3,553	2,600	2,835	14,592	100%

Note: Transfer = Math 1, 13, 2, 3A, 50; 1 level below = Math 202, 203; 2 levels below = Math 201; 3 levels below = Math 253; 4 levels below = Math 250

Male students were used as the standard for comparison. Female students evidenced a slight disproportionate impact for placement into the transfer level math courses (see Table 10). Lower percentages of female students were placed into the transfer level (20.5%) than β_{80} (23.7%). That is, female students were placed 3.2% below β_{80} .

Table 10: Disproportionate Impact by Gender for Transfer Level Math Courses

Gender	Transfer Level	Gap from Benchmark
Female	20.5%	-3.2%
Male	29.7%	--
Unknown	14.6%	-9.1%
β_{80}	23.7%	

Ethnic Groups

The largest ethnic group was composed of African Americans (30.9%), followed by Asian (18.6%), Hispanic (18.0%), and Whites (13.0%). The other groups were much smaller and their results should be interpreted with caution (see Table 11).

Table 11: Number of Students by Ethnicity for Math Courses

Ethnicity	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below	Total	Percent
African American	472	460	1,099	1,052	1,429	4,512	30.9%
Asian	1,211	412	512	312	263	2,710	18.6%
Hispanic	444	363	756	561	496	2,620	18.0%
Multiple	404	265	506	343	334	1,852	12.7%
Native American	7	3	13	8	13	44	0.3%
Pacific Islander	19	21	28	14	23	105	0.7%
White	715	355	462	201	170	1,903	13.0%
Unknown	278	175	177	109	107	846	5.8%
Total	3,550	2,054	3,553	2,600	2,835	14,592	100%

Note: Transfer = Math 1, 13, 2, 3A, 50; 1 level below = Math 202, 203; 2 levels below = Math 201; 3 levels below = Math 253; 4 levels below = Math 250

White students were used as the standard for comparison. There was evidence of disproportionate impact for all minority groups for the transfer level Math courses, except for Asians (see Table 12). Specifically, the standard group had placement rates of 37.6% for the transfer level courses, whereas the other groups ranged from 10.5% to 44.7%. African American students exhibited the largest gap (19.6% below the 30.1% β_{80}), followed by Hispanic students (13.1%) for the transfer level math courses. Native American (14.1%) and Pacific Islander (12.0%) students also evidenced disproportionate impact, but their results should be interpreted with caution. In contrast, Asian students (44.7%) were placed 14.6% above β_{80} .

Table 12: Disproportionate Impact by Ethnicity for Transfer Level Math Courses

Ethnicity	Transfer Level	Gap from Benchmark
African American	10.5%	-19.6%
Asian	44.7%	14.6%

Hispanic	16.9%	-13.1%
Multiple	21.8%	-8.2%
Native American	15.9%	-14.1%
Pacific Islander	18.1%	-12.0%
White	37.6%	--
Unknown	32.9%	2.8%
β_{80}	30.1%	

Age Groups

As can be seen in Table 13, a majority of the students were age 19 or younger (35.3%) or between 20 and 24 years (35.3%).

Table 13: Number of students by Age for Math Courses

Age	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below	Total	Percent
19 and Under	1,433	678	1,342	925	769	5,147	35.3%
20-24	1,373	824	1,202	862	892	5,153	35.3%
25-29	387	249	405	253	340	1,634	11.2%
30-39	244	213	350	280	350	1,437	9.8%
40 and Over	113	90	254	280	484	1,221	8.4%
Total	3,550	2,054	3,553	2,600	2,835	14,592	100%

Note: Transfer = Math 1, 13, 2, 3A, 50; 1 level below = Math 202, 203; 2 levels below = Math 201; 3 levels below = Math 253; 4 levels below = Math 250

Students age 19 or younger were used as the standard for comparison (see Table 14). Students age 30 and older evidenced disproportionate impact for the transfer level math courses (17.0% for 30 to 39, and 9.3% for 40 and over) in comparison to the standard group (27.8%). As can be seen in Table 14, 30 to 39 and 40 and over age groups exhibited placement rates lower than β_{80} for the transfer level Math courses (5.3% and 13.0%, respectively).

Table 14: Disproportionate Impact by Age for Transfer Level Math Courses

Age	Transfer Level	Gap from Benchmark
19 and Under	27.8%	--
20-24	26.6%	4.4%
25-29	23.7%	1.4%
30-39	17.0%	-5.3%
40 and Over	9.3%	-13.0%
<i>β_{80}</i>	22.3%	

DSPS Groups

Table 15 displays the number of students with and without disabilities, with 5.5% having disabilities.

Table 15: Number of Students by DSPS for Math Courses

DSPS	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below	Total	Percent
No	3,478	1,988	3,410	2,430	2,484	13,790	94.5%
Yes	72	66	143	170	351	802	5.5%
Total	3,550	2,054	3,553	2,600	2,835	14,592	100%

Note: Transfer = Math 1, 13, 2, 3A, 50; 1 level below = Math 202, 203; 2 levels below = Math 201; 3 levels below = Math 253; 4 levels below = Math 250

Students with no disabilities were used as the standard for comparison (see Table 16). There was evidence of disproportionate impact for placement into the transfer level math courses for students with disabilities (9.0% in comparison to 25.2% for the standard group). That is, they were placed 11.2% below β_{80} .

Table 16: Disproportionate Impact for DSPS for Transfer Level Math Courses

DSPS	Transfer Level	Gap from Benchmark
No	25.2%	--
Yes	9.0%	-11.2%
<i>β_{80}</i>	20.2%	

Ordinal Regression Analyses

To elucidate possible causal factors for the disproportionate impacts of placement into the English and math courses for the minority groups, ordinal regression analyses were conducted with assessment scores and demographic characteristics as the predictor variables and with course level as the outcome variable.

For English, the ordinal regression analysis indicated that a model with gender, ethnicity, age, disability status, and writing and reading scores significantly predicted English course placement (Nagelkerke $R^2 = .57$). That is, approximately 57% of the variance in the outcome can be accounted for by the predictor variables. Table 17 compares the R^2 of the model containing all six predictors to six models containing each predictor alone. The writing assessment score accounted for the most variance in the course placement ($R^2 = .53$), followed by the reading assessment score ($R^2 = .32$) and ethnicity ($R^2 = .09$). The other demographic characteristics accounted for a relatively small proportion of the variance.

Table 17: Proportion of English Placement Accounted by Predictors

	All	Writing Score	Reading Score	Gender	Ethnicity	Age	Disability
R^2	.57	.53	.32	.01	.09	.02	.03

For math, the ordinal regression analysis showed that a model with gender, ethnicity, age, disability status, and assessment score also significantly predicted math course placement (Nagelkerke $R^2 = .59$). That is, approximately 59% of the variances in the outcome can be explained by the predictor variables. As can be seen in Table 18, of the predictors, the assessment score accounted for the most variance in the course placement ($R^2 = .56$), followed by ethnicity ($R^2 = .13$). The other demographic characteristics accounted for a relatively small proportion of the variance.

Table 18: Proportion of Math Placement Accounted by Predictors

	All	Assessment Score	Gender	Ethnicity	Age	Disability
R^2	.59	.56	.02	.13	.04	.02

In sum, the assessment scores and demographic characteristics explained a relatively large proportion of the variation between students in their course placement. Of the predictors, the assessment scores accounted for the most variance, followed by ethnicity for both English and math. The results also suggest that there are other characteristics that contribute to the course placement which were not included in the models.

Conclusion

Of the 4 demographic groups (i.e., gender, ethnicity, age, and disability) examined for placement into transfer level English and math courses, a number of subgroups within each demographic group evidenced possible disproportionate impact for both English and math.

English: Transfer level course

- Gender: No gender group was found to be disproportionately impacted.
- Ethnicity: Disproportionate impact was evident for all subgroups.
 - African American students were placed at an average rate of 43% below that of White students.
 - Hispanic students were placed at an average rate of 35% below that of White students.
 - Asian students were placed at an average of 23% below that of White students.
 - Other ethnic minority groups showed disproportionate impacts; their results should be interpreted with caution because of small sample sizes.
- Age: 40 and older students displayed disproportionate impact, placed at an average rate of 18% below that of 19 and under students.
- Disability: Students with disabilities evidenced disproportionate impact, placed at an average rate of 23% below that of students without disabilities.

Math: Transfer level courses

- Gender: Female students evidenced disproportionate impact, placed at an average rate of 9.2% below that of male students.
- Ethnicity: Disproportionate impact is evident for all subgroups, except for Asian students.
 - African American students were placed at an average rate of 27% below that of White students.
 - Hispanic students were placed at an average rate of 21% below that of White students.
 - Other ethnic minority groups showed disproportionate impacts; their results should be interpreted with caution because of small sample sizes.
- Age: Two older age groups displayed disproportionate impact.
 - 30 to 39 group was placed at an average rate of 11% below that of 19 and younger group.
 - 40 and older group was placed at an average rate of 19% below that of 19 and younger group.
- Disability: Students with disabilities evidenced disproportionate impact, placed at an average of 16% below that of students without disabilities.

To explore the extent to which demographic characteristics, in addition to assessment scores, accounted for placement into different level English and mathematics courses, ordinal regression analyses were conducted. The results suggested that demographic variables,

especially ethnicity, accounted for variance over-and-above assessment scores alone. Together, demographic variables and scores accounted for approximately 60% of the variance in the English and math placement. However, assessment scores accounted for the most variance for both English and math placement, greater than 50%.

These findings indicate that the current method for placing students into the English and math courses may disproportionately impact a large number of African American, Hispanic, older, and disabled students, who are placed into the lowest level courses out of proportion to their share of the population. Other subgroups are similarly impacted, although in smaller numbers.

Plans for Minimizing Disproportionate Impact

These findings are not unique to PCCD. Many community colleges in California and other states are confronted with similar issues and challenges.² Studies have found that diversity of assessment practices may contribute to misalignment and disproportionate impact in the placement process.^{3 4 5} For example, when Butte College lowered their cut scores for the English assessment test, 48% of students were classified as “college ready” in comparison to 23% based on the old standard.⁶ In addition, African American and Hispanic students increased completion of transfer-level English course by two to three times.

One approach that may help mitigate disproportionate impact is to include multiple measures assessment to place students into transfer level English and mathematics courses.^{3 4 7} Various pilot programs have shown that utilizing high school transcripts, in combination with assessment tests, in the placement process not only increases the number of underrepresented students placed into transfer level English and math courses, but is also a better predictor of success in transfer level courses in comparison to simply using assessment scores.^{8 9 10} PCCD is participating in the Multiple Measures Assessment Program.¹¹

Another approach involves curriculum alignment between local K-12 districts and community colleges to help students be more prepared for college and reduce remediation.^{12 13 14 15 16} Currently, PCCD is collaborating with 11 school districts, 1 charter school organization, and 5 other community colleges to reshape the K-14 educational system by building integrated academic and career-related curriculum.

Other causal factors for these disproportionate impacts may be related to differences in socioeconomic status and educational backgrounds of the students. Further research is needed to identify the factors, other than demographic characteristics, that contribute to these patterns, such as prior educational experiences, outreach to local schools, and student engagement prior to testing. Research is also needed to identify and support implementation of strategies to mitigate the influence of these factors.

Endnotes

¹ESL placement analysis was not conducted because the new ESL assessment tests (CESL and writing prompts) were piloted in fall 2014 and had small sample sizes. Disproportionate impact analyses for ESL will take place in fall 2015.

²Disproportionate impact occurs when “the percentage of persons from a particular racial, ethnic, age or disability group who are directed to a particular service or placement based on an assessment instrument, method, or procedure is significantly different from the representation of that group in the population of persons being assessed, and that discrepancy is not justified by empirical evidence demonstrating that the assessment instrument, method, or procedure is a valid and reliable predictor of performance in the relevant educational setting” [Title 5 Section 55502(d)].

³“The 80 percent rule refers to the benchmark for the ratio of selection or participation rates between a minority group and the reference group or compares the percentage of each disaggregated subgroup attaining an outcome to the percentage attained by a reference subgroup. Any disaggregated group that is included in a desired outcome at less than 80% when compared to a reference group is considered to have suffered an adverse or disproportionate impact”.

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Appendix A
Description of Placement Courses

English	Description	CB21	CB08
1A	Composition and reading	Transfer	Not basic skills
201A	Prep for Composition and Reading	1 level below	Not basic skills
204A	Prep for composition, reading, and research	2 levels below	Basic skills
252A	Integrated reading and writing	2-4 levels below	Basic skills
269A	Foundations in reading and writing	2-4 levels below	Basic skills
Math	Description	CB21	CB08
1	Pre-calculus	Transfer	Not basic skills
13	Intro to statistics	Transfer	Not basic skills
2	Pre-calculus/geometry	Transfer	Not basic skills
201	Elementary algebra	2 levels below	Not basic skills
202	Geometry	1 levels below	Not basic skills
203	Intermediate algebra	1 level below	Not basic skills
250	Arithmetic	4 levels below	Basic skills
253	Pre-algebra	3 levels below	Basic skills
3A	Calculus 1	Transfer	Not basic skills
50	Trigonometry	Transfer (CSU)	Not basic skills

Appendix B
Disproportionate Impact by English and Math Course Levels

English Courses

Table 1: Disproportionate Impact by Gender for English

Gender	Transfer Level	1 Level Below	2 Levels Below
Female	45.7%	27.7%	26.7%
Male	50.3%	27.1%	22.7%
Unknown	35.5%	21.1%	43.4%
<i>β_{80}</i>	40.2%	21.6%	18.1%

Table 2: Disproportionate Impact by Ethnicity for English

Ethnicity	Transfer Level	1 Level Below	2 Levels Below
African American	33.4%	29.5%	37.1%
Asian	53.5%	27.2%	19.3%
Hispanic	40.8%	33.8%	25.3%
Multiple	57.4%	23.1%	19.5%
Native American	34.1%	31.7%	34.1%
Pacific Islander	42.1%	38.3%	19.6%
White	76.1%	13.4%	10.4%
Unknown	51.4%	27.4%	21.3%
<i>β_{80}</i>	60.9%	10.7%	8.3%

Table 3: Disproportionate Impact by Age for English

Age	Transfer Level	1 Level Below	2 Levels Below
19 and Under	49.4%	28.5%	22.2%
20-24	47.3%	27.8%	25.0%
25-29	52.0%	23.3%	24.7%

30-39	47.3%	26.0%	26.8%
40 and Over	31.3%	24.0%	44.7%
β_{80}	39.5%	22.8%	17.8%

Table 4: Disproportionate Impact by DSPS for English

DSPS	Transfer Level	1 Level Below	2 Levels Below
No	48.8%	27.5%	23.7%
Yes	25.5%	22.5%	52.0%
β_{80}	39.1%	22.0%	19.0%

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Table 5: Disproportionate Impact by Gender for Math

Gender	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below
Female	20.5%	13.4%	24.6%	19.6%	21.8%
Male	29.7%	15.3%	24.4%	15.2%	15.5%
Unknown	14.6%	9.3%	19.6%	24.3%	32.2%
β_{80}	23.7%	12.2%	19.5%	12.1%	12.4%

Table 6: Disproportionate Impact by Ethnicity for Math

Ethnicity	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below
African American	10.5%	10.2%	24.4%	23.3%	31.7%
Asian	44.7%	15.2%	18.9%	11.5%	9.7%
Hispanic	16.9%	13.9%	28.9%	21.4%	18.9%
Multiple	21.8%	14.3%	27.3%	18.5%	18.0%
Native American	15.9%	6.8%	29.5%	18.2%	29.5%

Pacific Islander	18.1%	20.0%	26.7%	13.3%	21.9%
White	37.6%	18.7%	24.3%	10.6%	8.9%
Unknown	32.9%	20.7%	20.9%	12.9%	12.6%
<i>β_{80}</i>	30.1%	14.9%	19.4%	8.4%	7.1%

Table 7: Disproportionate Impact by Age for Math

Age	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below
19 and Under	27.8%	13.2%	26.1%	18.0%	14.9%
20-24	26.6%	16.0%	23.3%	16.7%	17.3%
25-29	23.7%	15.2%	24.8%	15.5%	20.8%
30-39	17.0%	14.8%	24.4%	19.5%	24.4%
40 and Over	9.3%	7.4%	20.8%	22.9%	39.6%
<i>β_{80}</i>	22.3%	10.5%	20.9%	14.4%	12.0%

Table 8: Disproportionate impact for DPSP for Math

DPSPS	Transfer Level	1 Level Below	2 Levels Below	3 Levels Below	4 Levels Below
No	25.2%	14.4%	24.7%	17.6%	18.0%
Yes	9.0%	8.2%	17.8%	21.2%	43.8%
<i>β_{80}</i>	20.2%	11.5%	19.8%	14.1%	14.4%