Examination of the Assessment Program for Disproportionate Impact
Fall 1989

March 1992

Joan K. Thomas-Spiegel, M.A.
Researcher

Rochelle Hudson, Ph.D.
Associate Dean
Research and Development
Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>i</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>2</td>
</tr>
<tr>
<td>Seat Availability</td>
<td>3</td>
</tr>
<tr>
<td>Tables</td>
<td>4</td>
</tr>
<tr>
<td>Table 1. Gender - English Placements</td>
<td>4</td>
</tr>
<tr>
<td>Table 2. Gender - Math Placements</td>
<td>5</td>
</tr>
<tr>
<td>Table 3. Age - English Placements</td>
<td>6</td>
</tr>
<tr>
<td>Table 4. Age - Math Placements</td>
<td>7</td>
</tr>
<tr>
<td>Table 5. Ethnic Group - English Placements</td>
<td>8</td>
</tr>
<tr>
<td>Table 6. Ethnic Group - Math Placements</td>
<td>9</td>
</tr>
<tr>
<td>Table 7. English Placement Correlation Matrix</td>
<td>10</td>
</tr>
<tr>
<td>Table 8. English Placements, Available Seats, and First Census Enrollment</td>
<td>11</td>
</tr>
<tr>
<td>Table 9. Math Placements, Available Seats, and First Census Enrollment</td>
<td>12</td>
</tr>
</tbody>
</table>
Summary

Matriculation guidelines require examination of the college’s assessment program to determine if a disproportionate impact exists for various student populations based on age, ethnicity, gender, and disability status. This study addresses disproportionate impact for English and math assessment.

For the Fall 1989 semester, 1,739 entering students at Los Angeles Harbor College were tested and given placements in the subjects of English and math. The English test given was the College Board (Assessment and Placement Services for Community Colleges) and the math test was the Math Diagnostic Testing Project. This study examines the placement breakdowns by age, gender, and ethnicity.

The data shows that for Fall 1989, Harbor College English and math placement do not reflect significantly disproportionate impact as measured by correlation and percent examination. There are, however, areas in English placement where ethnicity placement distributions are slightly over the borderline of acceptable ranges of difference. These are, specifically, white to Asian and white to Filipino. Future longitudinal study is necessary to determine whether new testing procedures since Fall of 1989 or other circumstances will support or deny these findings.

A second aspect of this study examines the availability of seating for students placed. Harbor College generally met the needs of their students in higher levels of math and English seating availability. There appears to be need for considerably larger numbers of classes in the lower level placements, specifically Math 112 and 105, and Dev Com 20 and 35. Future study will determine if these needs were met in subsequent years.
To address Matriculation guidelines, Los Angeles Harbor College monitored a record of differential impact of assessment practices for the demographic groups of age, gender, and ethnicity for the Fall of 1989. Both matriculation areas of English and math placements were examined in this summary. One thousand, seven hundred thirty-nine students were examined according to their placement. Placement codes range such that the lower the number, the more advanced the course of placement. Ethnic or age groups comprising less than 2 percent of the population are not shown, since this small of a sample is not reliable.

**Gender**

A cursory examination of the graphs for gender, show males and females to be particularly similar regarding English placement (Table 1). Math placement (Table 2) shows some disparity with males placing slightly higher. A running total of percents shows that females fall behind males in their math placement by 7-9 percent in Math 120 and Math 115 placement. At the Math 112 placement level we find 10 percent more females than males.

**Age**

An examination of the graphs for age groups shows very little disparity in English or math placements. The group of less than 0.3 percent, 55 or older, has been eliminated from the graphs. This group’s very small n has a confounding effect, since small n’s cannot generate a smooth curve. It may be noted, however, that the 55+ group followed approximately the same placement codes for English as other groups when the curve is smoothed and small n considered. However, there is a disparity noted skewed to lower placement in math. It is not possible to determine if this skewness is attributable to the small n represented. Studies regarding math skills and age show that older age ranges exhibit deteriorating math capabilities. Pearl and Biro (1990) noted similar disparities in math at Los Angeles Trade-Technical College.
Table 3 shows the 35-54 age group excelling at the highest level of English placement. As in other research, older age groups do better in their language skills than younger groups (unlike math skills).

Table 4 shows that math placement for age groups making up over 2 percent of the population had some slight disparity in a predictable pattern. The youngest age group of 20 and under, placed highest, 20-24 next highest, 25-34 next and 35-54 lowest. This again bears out the 1990 study of Pearl and Biro.

**Ethnicity**

Ethnic group placements are the most disparate. The group of American Indians at 0.7% are eliminated from the graphs. Their small n is not reliable.

Table 6 shows the math placement across ethnic groups. Data show that Asians skewed toward higher placement, with Blacks trailing behind all other groups.

Table 5 shows whites with a significantly higher placement than all other groups. It would be especially important to follow this disparity through an examination of test validity and predictability of class grades.

The general shapes of all curves show that our sample population is probably reliable. In all cases, the bell-shaped curves are skewed to higher placement rather than lower, as would be hoped when placing college entry students.

To determine whether the differences of English placement were statistically significant, a correlation was performed. The resulting correlation matrix is found in Table 7. Nearly all groups were significantly correlated with each other, showing no disproportionate placement. However, there is no significant correlation between Asian and White or Filipino and White. This may be due to language differences, but it is difficult to determine if this is the only cause, since we might then expect the Hispanic sample to show a similar lack of correlation. However, Hispanic and White correlate to a .05 significance. If a
similar disparity is seen in other years, it would be appropriate to examine these cases in greater detail.

The lack of significant correlation between these groups is clearly seen when comparing the percents in placement codes 1, 2, and 5 on Table 5. Table 5 shows that Whites had 25.3 percent of their sample in placement code 1 and Asians had 3.8 percent. Filipinos had 26.5 percent of their sample in placement code 5 and Whites had 2.3 percent.

It is very important to note that although Harbor College matriculation data for these groups and codes falls outside the 20 percent acceptable variance, the scores are very close to the 20 percent difference. Whites to Asians in English 101 is a difference of 21.5 percent. White to Asians in Dev Com 35 is a difference of 24.2 percent. It is certainly quite likely that these differences are a product of English as a native language.

Longitudinal study will show if findings in 1989 are typical. Further exploration of these disparities might include random sampling of individual cases, in particular to determine if these placements reflect grade predictability.

**Seat Availability**

As students are placed at appropriate levels, seat availability becomes an important element of the access issue. A study of 1989 available seats and first census enrollments (Tillberg) shows that Harbor College generally met the needs of their students in higher levels of math and English seat. However, at the lower levels, needs greatly exceeded availability. These figures are reflected in Tables 8 and 9.

In Maths 112 and 105 the number of placements exceeded the number of available seats by 374 students. Also, English 21 shows slightly more placements than seats available and Dev Com 20 and Dev Com 35 placed twice the number of students than seats were available. A longitudinal comparison will show if these needs can be adjusted or if the needs vary unpredictably.
Table 1

Gender

![Bar chart showing gender distribution across English placements.]

- Eng 101
- Eng 28
- Eng 21
- Dev Com 20
- Dev Com 35
- No. Eng Place.
- ESL Eng Refer
- ESL Eng 86
- ESL Eng 85
- ESL Eng 84
- Dev Com 76

Legend:
- Male
- Female
### Table 7.

**English Placement Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>Hispanic</th>
<th>White</th>
<th>Asian</th>
<th>Filipino</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>1</td>
<td>.973**</td>
<td>.638*</td>
<td>.797**</td>
<td>.910**</td>
<td>.807**</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.973**</td>
<td>1</td>
<td>.657*</td>
<td>.843**</td>
<td>.918**</td>
<td>.866**</td>
</tr>
<tr>
<td>White</td>
<td>.638*</td>
<td>.657*</td>
<td>1</td>
<td>.404</td>
<td>.485</td>
<td>.834**</td>
</tr>
<tr>
<td>Asian</td>
<td>.797**</td>
<td>.843**</td>
<td>.404</td>
<td>1</td>
<td>.923**</td>
<td>.789**</td>
</tr>
<tr>
<td>Filipino</td>
<td>.910**</td>
<td>.918**</td>
<td>.485</td>
<td>.923**</td>
<td>1</td>
<td>.760**</td>
</tr>
<tr>
<td>Other</td>
<td>.807**</td>
<td>.866**</td>
<td>.834**</td>
<td>.789**</td>
<td>.760**</td>
<td>1</td>
</tr>
</tbody>
</table>

**p < .01**  
* p < .05
Table 8
Los Angeles Harbor College
Fall 1989
English Placements, Available Seats, and First Census Enrollment

ENGLISH COURSES
- English 101
- English 28 or 31
- English 21 or 73
- Dev Com 20
- Dev Com 35

ESL COURSES
- English 86
- English 85
- English 84
- Dev Com 76

- Number of Placements
- Number of Seats Available
- First Census Enrollment

Note: Number of seats available was calculated based on the number of sections offered and the class limit (35 students; 50 for some Dev Com).

(Excerpt from English and Mathematics Placements, Available Seats and First Census Enrollments, 1989)
Los Angeles Harbor College
Fall 1989
Math Placements, Available Seats, and First Census Enrollment

Note: Number of seats available was calculated based on the number of sections offered and the class limit.