

Entering Student Survey, 1999: Representativeness of the Respondent Sample

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OVERVIEW

The Office of Educational Assessment (OEA) surveyed all University of Washington entering undergraduates who attended the Summer, 1999 New Student Orientation or who registered for Autumn 1999 classes with an academic advisor (see [OEA Report 00-3](#) for specific methodology). This report describes the representativeness of the final sample of respondents in comparison with the entire population of entering undergraduates.

Information on a variety of demographic and academic variables was obtained through the Office of Institutional Studies' (OIS) student database. Complete information was available for most students, however 124 students failed to provide correct student identification numbers and thus their survey data could not be matched with their demographic information. Therefore, those students could not be classified as respondents for the purposes of this report and they were excluded from all analyses. It also should be noted that first-time and transfer students were defined somewhat differently in this report than in OEA Report 00-3: In the earlier report, students were defined as freshman or transfer depending upon which Orientation session they attended. In this report, the first-time/transfer classification was determined by the type of school a student had last attended before enrolling at the UW: If a student had attended any post-secondary institution after high school, that student was classified as a transfer student (thus, Running Start students -- who took college courses while still in high school -- were not classified as transfer students). This redefinition was necessary because members of the entering student population who did not complete the survey could not be classified based on Orientation type (i.e., Freshman vs. Transfer); in addition, the present scheme matches that used by OIS for institutional reporting. The number of respondents who were reclassified from freshman to transfer or vice versa was 267. For the sake of clarity, [Table 1](#) presents the sample and population sizes of first-time and transfer students for the present report, OEA Report 00-3, and the [OIS Autumn 1999](#) report.

Common wisdom would suggest that first-time students and transfer students represent two different populations of entering students. Indeed, preliminary analyses revealed that these two groups differed on seven of the eleven demographic variables selected for study (the variables are listed in [Table 2](#)). All differences exceeded $p < .001$. The variables on which first-time and transfer students did *not* differ significantly were gender, high school GPA, SAT Verbal Score, and ACT Composite score. Importantly, these two groups differed on rate of response to the survey. Among first-time students, 46% completed the survey, but only 33% of transfer students did: This difference was statistically significant ($\chi^2 = 88.76$, $p = 10^{-20}$). For these reasons, separate analyses were conducted for the first-time and transfer student groups.

RESULTS

The sample of first-time students ($n = 2859$) was found to be significantly different from the entire population of first-time students ($N = 4149$) on nine of the twelve study variables (using chi-square or z-tests, as appropriate) under the stringent criterion of $p < .003$, chosen to control for the probability of making Type I errors by taking into account the number of significance tests being performed. At this level of significance, respondents differed from the population as a whole on EOP status, ethnicity, athlete status, Washington residency, ACT composite score, age, high school GPA, and SAT Math and Verbal scores.

Tables 3-6 display cell counts for the three categorical variables on which significant differences were detected, and Table 7 displays means for the continuous variables. As shown in [Table 3](#), 12% of all first-time students were enrolled in the Educational Opportunity Program (EOP), but only 9% of survey respondents were. Second, the distribution of ethnicities was not the same in the survey sample as in the population. Examination of the contingency table revealed that the greatest discrepancy involved International and African American students. African American students made up 1.8% of the entering student population but only .8% of the survey sample. Likewise, 3% of the population of first-time students were International students, but International students comprised only 1.3% of the sample (see [Table 4](#)). This under-representation of International students was also evident when looking at Washington State residency: 3.8% of the population held some sort of immigrant status, compared to only 2.3% of the respondents (see [Table 5](#)). Interestingly, Out-of-State students (those who moved to Washington) were over-represented in the sample. It is possible that these students, being relatively new to the area, made an extra effort to acclimate themselves to the UW community; whereas many International students may not have been in residence at the time of Summer Orientation.

The first-time student sample was also unrepresentative with respect to percentage of student athletes. As shown in [Table 6](#), only 1.6% of the survey respondents were registered as student athletes, lower by 1.7% than the rate in the population. Training schedules and alternative orientation activities sponsored by the Athletic Department may account for this under-representation.

Turning to the continuous variables in [Table 7](#), survey respondents were approximately 3 months younger, on average, than the population. The mean high school GPA for first-time student survey respondents ($M = 3.66$) was higher than for the population ($M = 3.63$), as were the ACT composite, SAT Math, and SAT Verbal scores.

Fewer significant differences were found for the sample of transfer students. Trends were detected for student athlete status, Washington residency, and SAT Math score, but none of these differences satisfied the $p < .003$ criterion.

CONCLUSIONS

All entering undergraduates who attended the UW New Student Orientation or who registered for Autumn Quarter, 1999 with an academic advisor were administered the Entering Student Survey. Comparisons of the sample of first-time student respondents with the population of all first-time students on a variety of demographic variables revealed that the sample was fairly representative but tended to show higher-than-average academic achievement. Reliable differences between the sample and population were detected on seven of the twelve study variables. In contrast, transfer student respondents were much more representative of their population.

TABLES

Table 1. Population and Sample Sizes for First-time and Transfer Students

| | Present Report | | OEA Report 00-03 | | OIS Report Aug 1999 |
|--------------------------------|----------------|-------------|------------------|-------------|------------------------|
| | Sample | Population | Sample | Population | Population |
| First-time students (Freshmen) | 2011 | 4409 | 2143 | 4515 | 4353 |
| Transfer students | 664 | 2006 | 461 | 2057 | 2057 |
| Unclassified students | -- | -- | 195 | -- | -- |
| TOTAL | 2675 | 6415 | 4799 | 6572 | 6410 |

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Table 2. Significance Test Results for Survey Respondents vs. Population Comparisons (First-time and Transfer students analyzed separately)

| Variable | Significance | |
|---------------------------------------|---------------|-----------|
| | First-time | Transfer |
| ACT Composite Score | $p = .001$ | n.s. |
| Age (1999 - Year-of-Birth) | $p = 10^{-4}$ | n.s. |
| Child of Alumnus | n.s. | n.s. |
| Educational Opportunity Prog. student | $p = .002$ | n.s. |
| Ethnicity | $p < 10^{-6}$ | n.s. |
| Gender | n.s. | n.s. |
| High School GPA | $p < 10^{-5}$ | n.s. |
| Honors student | N/A | N/A |
| Running Start student | n.s. | N/A |
| SAT Math Score | $p < 10^{-3}$ | $p = .05$ |
| SAT Verbal Score | $p = 10^{-4}$ | n.s. |
| Student Athlete | $p < 10^{-4}$ | $p = .02$ |
| UW GPA for Bachelor's degree | N/A | N/A |
| WA State Residency | $p = 10^{-4}$ | $p = .04$ |

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Table 3. EOP Status (Counts and Percentages) for Non-Respondents, the Respondent Sample, and the Entire Population of First-time Students

| EOP Student | Completed Survey | | Population |
|-------------|------------------|--------------|--------------|
| | No | Yes | |
| No | 2074 (86.5%) | 1822 (90.6%) | 3896 (88.4%) |
| Yes | 324 (13.5%) | 189 (9.4%) | 513 (11.6%) |
| TOTAL | 2398 | 2011 | 4409 |

Note. For the difference between the distributions of the respondent sample and the entire population, $X^2 = 9.51$, $p = .002$.

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Table 4. Ethnicity Breakdown (Counts and Percentages) for Non-Respondents, the Respondent Sample, and the Entire Population of First-time Students

| Ethnicity | Completed Survey | | Population |
|-------------------|------------------|--------------|--------------|
| | No | Yes | |
| African American | 67 (2.8%) | 17 (0.8%) | 84 (1.9%) |
| Asian American | 564 (23.5%) | 450 (22.4%) | 1014 (23.0%) |
| Hispanic American | 76 (3.2%) | 55 (2.7%) | 131 (3.0%) |
| International | 102 (4.3%) | 23 (1.1%) | 125 (2.8%) |
| Native American | 26 (1.1%) | 13 (0.6%) | 39 (0.9%) |
| White American | 1206 (50.3%) | 1170 (58.2%) | 2376 (53.9%) |
| Other | 32 (1.3%) | 29 (1.4%) | 61 (1.4%) |
| Unknown | 325 (13.6%) | 254 (12.6%) | 579 (13.1%) |
| TOTAL | 2398 | 2011 | 4409 |

Note. For the difference between the distributions of the respondent sample and the entire population, $X^2(7) = 41.41$, $p < 10^{-6}$

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Table 5. WA State Residency (Counts and Percentages) for Non-Respondents, the Respondent Sample, and the Entire Population of First-time Students

| Residency | Completed Survey | | Population |
|----------------|------------------|--------------|--------------|
| | No | Yes | |
| WA Resident | 1981 (82.6%) | 1656 (82.3%) | 3637 (82.5%) |
| Out-of-State | 301 (12.6%) | 316 (15.7%) | 617 (14.0%) |
| Immigrant/VISA | 116 (4.8%) | 39 (1.9%) | 155 (3.5%) |
| TOTAL | 2398 | 2011 | 4409 |

Note. For the difference between the distributions of the respondent sample and the entire population, $X^2 = 12.80$, $p = .002$.

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Table 6. Athlete Status (Counts and Percentages) for Non-Respondents, the Respondent Sample, and the Entire Population of First-time Students

| Student Athlete | Completed Survey | | Population |
|-----------------|------------------|--------------|--------------|
| | No | Yes | |
| No | 2287 (95.4%) | 1978 (98.4%) | 4265 (96.7%) |
| Yes | 111 (4.6%) | 33 (1.6%) | 144 (3.3%) |
| TOTAL | 2398 | 2011 | 4409 |

Note. For the difference between the distributions of the respondent sample and the entire population, $X^2 = 18.17$, $p < 10^{-6}$.

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Table 7. Comparisons of Respondent Sample and Population on Composite ACT, Age, High School GPA, and SAT Math and Verbal Scores (First-time Students)

| Variable | Completed Survey | | Population | z |
|---------------|------------------|--------------|--------------|---------------------|
| | No | Yes | | |
| ACT Composite | 24.0 (3.98) | 25.1 (3.94) | 24.6 (3.99) | 3.04 $p = .001$ |
| Age | 20.0 (.39) | 19.5 (.28) | 19.8 (.32) | -3.72 $p = 10^{-4}$ |
| HS GPA | 3.61 (.39) | 3.66 (.28) | 3.63 (.32) | 4.53 $p < 10^{-5}$ |
| SAT Math | 578.2 (85.7) | 590.7 (85.5) | 584.1 (85.8) | 3.35 $p < 10^{-3}$ |
| SAT Verbal | 557.4 (90.9) | 571.9 (90.1) | 564.2 (90.7) | 3.69 $p = 10^{-4}$ |

Note. Numbers in parentheses are standard deviations. z-statistics are for comparisons between means of the respondent sample and the entire population.

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