

The 1998 Entering Student Survey: Representativeness of the Respondent Sample

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May, 1999

OVERVIEW

The Office of Educational Assessment (OEA) surveyed all University of Washington entering undergraduates who attended the Summer, 1998 New Student Orientation or who registered for Autumn 1998 classes with an academic advisor (see [OEA Report 98-4](#) 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 255 students failed to provide correct student identification numbers and thus their survey data could not be matched with their demographic information: those students therefore could not be classified as respondents for the purposes of this report. It also should be noted that first-time and transfer students were defined somewhat differently in this report than in OEA Report 98-4: 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 anything more advanced than high school, that student was classified as a transfer student. 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. Only 104 respondents were reclassified from freshman to transfer or vice versa. 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 98-4, and the [OIS Autumn 1998](#) 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 eleven of the twelve demographic variables selected for study (the variables are listed in Table 2). All differences exceeded $p < .001$, and the only variable on which first-time and transfer students did not differ significantly was SAT Verbal Score. Importantly, these two groups also differed on rate of response to the survey. Among first-time students, 75% completed the survey, but only 25% of transfer students did: This difference is highly statistically significant ($X^2 = 83.49$, $p = 10^{-20}$). For these reasons, all analyses for this report were conducted separately for the first-time and transfer student populations.

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), when a liberal significance criterion of $p < .05$ was employed (see [Table 2](#)). That number decreased to five out of twelve under the more 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 distribution of Educational Opportunity Program involvement, ethnicity, athlete status, and on mean high school GPA and SAT Verbal score.

Tables 3-5 display cell counts for the three categorical variables on which significant differences were detected, and Table 6 displays means for the continuous variables. As shown in [Table 3](#), students enrolled in the Educational Opportunity Program (EOP) were under-represented in the sample. That is, their survey completion rate was lower than their rate in the population. Likewise, 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 White American students: The population of first-time students was 55% White American, compared to 58% of the sample (see [Table 4](#)). The next greatest discrepancy was for African American students, who made up only 1.8% of the sample but 3% of the population. The first-time student sample was also unrepresentative with respect to percentage of student athletes. As shown in [Table 5](#), only 2% of the survey respondents were students registered as athletes, lower by 1.8% than the rate in the population.

Turning to the continuous variables in [Table 6](#), the mean high school GPA for first-time student survey respondents ($M = 3.68$) was higher than for the population ($M = 3.65$). SAT Math and Verbal scores were also higher amongst survey respondents. Note that all of these differences were very small in terms of absolute magnitude.

Fewer significant differences were found for the sample of transfer students. The only variable which surpassed the $p < .003$ criterion was Washington State residency status. As shown in [Table 7](#), transfer students from out-of-state were less likely to have completed the Entering Student survey.

CONCLUSIONS

All entering undergraduates who attended the UW New Student Orientation or who registered for Fall Quarter, 1998 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. Though significant effects were detected on five of the twelve study variables, the differences tended to be small in magnitude -- their statistical significance inflated by the large sample size.

The differences also tended to be predictable or in keeping with previous findings. For example, minorities are often under-represented in surveys. Respondents also showed higher academic achievement (e.g., higher GPAs): one might surmise that those who do well in school would be more interested in participating in school-related projects such as the student survey.

Transfer student respondents differed from the transfer student population on only one variable: Washington State residency. It is hardly surprising that students coming from out-of-state (or even from another country) -- especially those who have already had some college experience -- would be less likely to attend the New Student Orientation and, thus, complete the Entering Student Survey.

Although the magnitude of differences were generally small, it behooves us to attend to possible effects of these demographic variables in any subsequent inferential analyses of the survey data. Furthermore, in future studies OEA should seriously consider targeting under-represented groups more intensely, with the goal of bringing their sample numbers closer to the population rates.

TABLES

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

	Present Report		OEA Report 98-4		OIS Report Sept1998
	Sample	Population	Sample	Population	Population
First-time students (Freshmen)	2859	4149	3017	4168	4219
Transfer students	937	1858	893	2061	1997
Unclassified students	--	--	141	--	--
TOTAL	3796	6007	4051	6229	6216

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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	$p < .05$	n.s.
Age (1998 - Year-of-Birth)	$p < .05$	n.s.
Child of Alumnus	n.s.	n.s.
Educational Opportunity Prog. student	$p < .003$	n.s.
Ethnicity	$p < .003$	$p < .05$
Gender	n.s.	n.s.
High School GPA	$p < .003$	$p < .05$
Honors student	N/A	N/A
Running Start student	n.s.	n.s.
SAT Math Score	$p = .003$	n.s.
SAT Verbal Score	$p < .003$	n.s.
Student Athlete	$p < .003$	$p < .05$
UW GPA for Bachelor's degree	N/A	N/A
WA State Residency	n.s.	$p < .003$

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Table 3. EOP Participation (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	1132 (87.8%)	2666 (93.2%)	3798 (91.5%)
Yes	158 (12.2%)	193 (6.8%)	351 (8.5%)
TOTAL	1290	2859	4149

Note. For the difference between the distributions of the respondent sample and the entire population, $X^2 = 11.25$, $p = .001$.

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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	71 (5.5%)	52 (1.8%)	123 (3.0%)
Asian American	370 (28.8%)	653 (22.9%)	1023 (24.7%)
Hispanic American	75 (5.8%)	118 (4.1%)	193 (4.7%)
International	14 (1.1%)	35 (1.2%)	49 (1.2%)
Native American	17 (1.3%)	36 (1.3%)	53 (1.3%)
White American	607 (47.2%)	1658 (58.1%)	2265 (54.7%)
Other	14 (1.1%)	32 (1.1%)	46 (1.1%)
Unknown	118 (9.2%)	268 (9.4%)	386 (9.3%)
TOTAL	1286	2852	4138

Note. For the difference between the distributions of the respondent sample and the entire population, $X^2(7) = 25.63$, $p = .001$

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Table 5. 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	1189 (92.2%)	2803 (98.0%)	3992 (96.2%)
Yes	101 (7.8%)	56 (2.0%)	157 (3.8%)
TOTAL	1290	2859	4149

Note. For the difference between the distributions of the respondent sample and the entire population, $\chi^2 = 26.52$, $p = 10^{-7}$.

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Table 6. Comparisons of Respondent Sample and Population on High School GPA, SAT Math, and SAT Verbal Score (First-time Students)

Variable	Completed Survey		Population	z
	No	Yes		
HS GPA	3.57 (.39)	3.68 (.28)	3.65 (.32)	5.01 $p = 10^{-7}$
SAT Math	580.19 (86.26)	594.46 (84.39)	590.04 (85.21)	2.73 $p = .003$
SAT Verbal	552.92 (95.00)	573.40 (87.16)	567.06 (90.15)	3.70 $p = .0001$

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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Table 7. Washington State Residency (Counts and Percentages) for Non-Respondents, the Respondent Sample, and the Entire Population of Entering Transfer Students

WA Residency	Completed Survey		Population
	No	Yes	
WA Native	669 (72.6%)	783 (83.6%)	1452 (78.1%)
Moved to State	182 (19.8%)	112 (12.0%)	294 (15.8%)
Immigrant/VISA	70 (7.6%)	42 (4.5%)	112 (6.0%)
TOTAL	921	937	1858

Note. For the difference between the distributions of the respondent sample and the entire population, $X^2 = 15.94$, $p = .0003$.

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