Entering Students' Educational Desires

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REPORT OVERVIEW

During the summer 1998 New Student Orientation, entering students completed a survey containing 54 items related to the extent to which students desired various educational outcomes from their UW education (see OEA Report 98-4 for the complete methodology). These survey data were reduced to 10 new scales based on item intercorrelations and similarity of content. In addition, an Overall Needs score was computed for each student by averaging over all 49 retained items.

Scale Averages. The Academic Success scale was highest in desirability, with an average item rating of 4.35 on the 1-5 scale. High interest was also observed for General Skills (4.25), Literacy (3.92), and Information Technology (3.94). The Group Activities scale (3.44) was followed in the ratings by Science (3.34) and Humanitarianism (3.29). Social Influence (3.18) and Entrepreneurship (3.17) were rated nearly equally. Arts was the only scale that was rated below the midpoint (2.53).

Relationship among Items and Scales. Items and scales tended to be positively intercorrelated. The reliability of the Overall Needs scale was .90. Correlations among scales ranged from r = -.01 to .53.

Needs and Expectations of UW. Students also answered items assessing their expectations for how well the UW would prepare them in five general areas (e.g., for graduate school, for life-long learning). All respondents thought the UW would prepare them well in at least one of the areas, and the mean rating over all five items was 4.1. The average correlation between expectations and Overall Needs was r = .34.

First-time, First-year Students vs. Transfer Students. Overall, transfer students tended to give higher ratings across the set of 10 scales. The largest group difference was on Humanitarianism, where the transfer student average was 0.3 scale points higher than the first-year student average. Entrepreneurship was the only scale on which first-year students gave higher ratings.

Ethnicity. Respondents were categorized as White, Asian, or Other Minority. Whites and Asians differed on seven scales; the White and Other Minority groups differed on six scales; and Asians and Other Minorities differed on three scales. The largest group difference was on the Entrepreneurship scale, where Asian students gave the highest average rating and Other Minority students the lowest.

Gender. The average Overall Needs scores of males and females were essentially identical. However, there were significant differences between groups on eight of the ten specific scales. Females gave higher average ratings on six of those scales, while males rated Science and Entrepreneurship higher.

Conclusions. As would be expected when entering university, students tended to give high desirability ratings for most of the domains, but they also discriminated among items. There were several differences

by ethnicity and gender, some quite large relative to what is usually seen in this type of research. Many differences were similar to what has been found in other studies, but some, such as transfer students tending to give higher ratings than first-time students or White males generally giving lower ratings than all other students, were unique, puzzling, and deserve further research.

PURPOSE AND METHOD

This study examines University of Washington (UW) entering students' educational needs or desires as reflected in their responses to a survey conducted in Autumn 1998. The methodology, survey instrument, and response frequencies for that survey can be found in OEA Report 98-4. Among the items to which the students responded were 54 items that assessed the degree to which respondents desired a variety of educational outcomes. The purpose of this study was to cluster the items into meaningful content areas and to examine the correlates of the student ratings in order to provide a clearer picture of what entering students want and expect from the UW. Secondarily, this report may be seen as a companion piece to OEA Report 99-5, "Alumni Satisfaction," which looked at the satisfaction of UW alumni five and ten years after graduation on items very similar to those examined here.

The Items and Scales

The items were contained in three sections of the survey and had the following stems. A single bolded term follows each stem and is used subsequently to identify items throughout the remainder of this report.

- How important are each of the following to you personally? [**Goal**]

Not at all	Slightly	Moderately	Very	Essential
0	1	2	3	4

- Predict how important each of these abilities will be to what you plan to do after you graduate. [**Necessity**]

Not at all	Somewhat	Important	Very	Essential
1	2	3	4	5

- How likely are you to seek out each of the following in your courses or other experiences at the UW? [**Opportunity**]

Not at all	Slightly	Moderately	Very	Extremely
0	1	2	3	4

Responses on the *Goal* and *Opportunity* items were recoded from a 0-4 scale to a 1-5 scale.

Factor analysis was used to aid in the re-clustering of the items into several smaller scales. Factor loadings were produced by a principal components solution followed by varimax rotation. The collection of items that loaded highest on each factor was then assessed for meaningful content. The ten-factor solution, which accounted for 57.8% of the total variance in the ratings, was chosen as the one that made most conceptual sense.

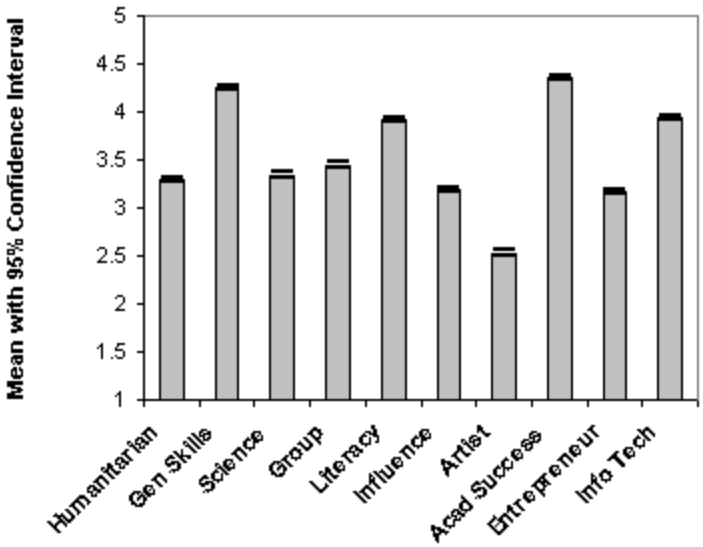
The resulting factors (scales), their reliability coefficients (Cronbach's alpha), percentage of variance in the ratings for which they accounted, and their component items are found in Table 1. Means and standard deviations, computed for the 3126 respondents who completed all 49 items, are listed in italics after each item.

Five items were discarded because of their failure to load reliably on any factor: *the goal of raising a family, perceived necessity of using a foreign language, likelihood of seeking out opportunities to think critically about knowledge, likelihood of seeking out informal contact with professors outside of class, and likelihood of seeking out practical application of coursework in one's major to job and/or education*. Thus, there were 49 items in the final pool.

Scale Averages

Figure 1 displays the average for each of the ten Needs scales. When grouped by average rating, the ten scales fell into roughly five clusters. Academic Success and General Skills were rated most desirable, with averages of 4.35 and 4.25, respectively. The next two highest rated scales were Information Technology (3.94) and Literacy (3.92). The third cluster included Group (3.44), Science (3.34), and Humanitarianism (3.29). Social Influence and Entrepreneurship were essentially rated equally (3.18 and 3.17, respectively). The only scale rated below the midpoint was Arts (2.53). The multivariate test for any differences between average scale ratings was highly significant, $F(9,3117) = 2068.69$, $p < .001$.

Figure 1. Scale averages (with 95% confidence intervals).



In Table 2, a frequency distribution is presented for the Overall Needs Scale, which is the average over all 49 items for each respondent. An Overall Needs average was computed only if the student responded to all 49 items. To create this frequency distribution, averages were grouped into ranges of one-quarter scale points. For the Overall scale, complete data were available for 3126 (77%) of the 4051 respondents. Table 2 demonstrates that ratings were generally high, in that two-thirds of the Overall scale scores were between 3.25 and 4.25; moreover, only 3.3% of the scores were below that range while 32%

were above it. In other words, most students indicated that they desired the various educational outcomes "very much", on average.

Relationship among Items and Scales

As can be inferred from the high reliability of the Overall Needs scale (.90), the 49 items tended to intercorrelate positively across all respondents. All items had positive loadings on the first, unrotated factor derived from the principal components factor analysis, and that factor accounted for 19.8% of the total variance in the ratings.

Similarly, the ten constructed scales tended to be positively intercorrelated, yet there was variability in the correlations (see Table 3). The smallest correlations were between Arts and Science (r = -.01), and Arts and Academic Success (r = .003). The largest correlation was between Humanitarianism and Influence (r = .53). Although those two scales are reliably distinct from one another (both statistically and conceptually), inspection of their constituent items should make it clear why they were so highly correlated: They both concern a desire to make an impact upon society. Overall, the pattern of correlations suggests that, while a certain degree of "new student enthusiasm" underlay the ratings of all the items, students also discriminated between items. In sum, students come to the UW with varying educational needs or desires.

Needs and Expectations of the UW

Students also were asked how well they expected their UW experience to prepare them in five arenas: for graduate school, for a future career, for everyday life, for contributing to society, and for life-long learning. The response categories and response percentages for these Expectation items are found in Table 4. With so many responses in the *Very well* and *Extremely well* categories, it is clear that entering students were optimistic about what the UW could offer them. The mean over all five items was 4.1, and every respondent gave at least one of the Expectation items a *very well* rating. The correlation of the Expectation mean with the Overall Needs mean was r =.46, indicating that students with stronger desires overall tended to expect more from the University.

In Table 5 are statistics describing the relationship between the Expectation items and the Needs scales. A series of six stepwise multiple regression analyses in which the 10 Needs scales predicted each of the Expectation items as well as the mean of all five items was conducted, and the resulting beta weights, zero-order correlations, and R^2s for the models are included in Table 5.

Table 5 may be approached in two ways. First, one can examine the *Beta* columns under each of the five Expectation items to see which Needs scales were the strongest predictors of any particular Expectation item. For example, for the Graduate School equation the Needs scale with the largest *Beta* weight was, not surprisingly, Academic Success. In other words, student desire for high academic achievement was highly related to an expectation that the UW would prepare one well for graduate school and, moreover, this desire predicted that expectation to a much greater extent than any of the other desires tapped by the remaining nine Needs scales.

In contrast, inspection of the Beta weights shows that the Career Expectation item -- even though it was rated as highly as the Graduate School item -- was not particularly well-accounted for by the Needs scales. The strongest predictors were General Skills and Information Technology, but the entire set of seven predictors accounted for only 10% of the variance in the Career Expectation ratings. Thus, while students said that they believed the UW would prepare them for a career, scores on the Needs scales did not provide a great deal of insight into which desires, *specifically,* were related to that belief.

The other way to examine Table 5 is to scan across the rows in order to determine of which Expectation items the individual Needs scales were good predictors. General Skills, for example, predicted all five of the Expectation items and, moreover, tended to be a better predictor than the Entrepreneurship scale, which also entered all five prediction equations. In comparison, Humanitarianism predicted only three of the Expectation items but was just as strong a predictor of the mean of all five Expectation items as General Skills. The Academic Success scale which, though it entered only the Graduate School equation, was by far the strongest single predictor of any Expectation item, while the Arts scale was a modest negative predictor only of Career. In sum, the scale correlations and beta weights indicate that the Needs scales that were most strongly related to students' expectations regarding the outcomes of their UW education were General Skills, Humanitarianism, and Group.

Effects of Student Characteristics on Needs

Students' survey data were matched with demographic information provided by the Office of Institutional Studies. Student gender, ethnicity, and whether the student was a first-time, first-year (i.e., freshman) or transfer student were the three variables of interest in this study.

In order to examine the impact of these student characteristics on the Needs ratings, three separate repeated-measures analyses of variance were conducted in which each of the demographic variables, in turn, predicted all ten Needs scale averages. A repeated-measures analysis is preferable to multiple *t*-tests because the former corrects for the fact that ratings on the scales are not independent of one another (i.e., each student provided multiple ratings). It should be noted that conducting the analysis in this way (as opposed to the preferred method of conducting one analysis with all three grouping variables) may have produced inflated estimates of effects because, in each analysis, the demographic variable did not have to compete with the other two variables for a piece of the variance pie. However, an analysis in which all three variables were included together returned a few odd results because the unequal cell sizes required statistical corrections, but detailed explication of such results goes beyond the scope of this report. As a compromise, the results for two types of analyses will be reported. First and foremost, attention will be given to the three main repeated-measures analyses where each demographic variable was treated as a separate predictor. The testing of the simple effects of the demographic variables on the individual Needs scales were examined using the MWITHIN subcommand of the SPSS MANOVA routine. In addition, there will be some discussion of interactions between the demographic variables that were discovered with an analysis that included all three independent variables together as a set (*full model*). The Overall Needs scale average was analyzed using the second method only.

First-time, First Year Students vs. Transfer Students

First-time, first-year students were those students who had not attended any post-secondary institution prior to enrolling at the UW. These 2025 students were compared to the 576 transfer students. There was a main effect for student group; that is, the overall means of transfer and first-year students differed, $F(1,2599) = 18.59$, $p < .001$. Table 6 presents -- for each scale -- the means, results of *F*-tests of significance for simple effects, and the percentage of variance (eta^2) explained by the student grouping variable.

In general, transfer students gave higher ratings on the scales, but the differences between the group means tended to be small in absolute magnitude. Statistically significant differences were observed on seven of the ten scales. The largest difference between the two student groups was on the Humanitarianism scale, where the transfer student average was .3 scale points greater than the first-year student average (3.5 *vs.* 3.2). Transfer students also gave higher ratings on General Skills, Literacy, Influence, and Arts. The only scale on which the first-year student average was higher was Entrepreneurship (3.2 *vs.* 3.0). The average percentage of variance in the ten ratings that was accounted for by student type was .7%. Finally, the full model analysis of the Overall Needs score indicated that, even when the effects of the other demographic variables were taken into account, the transfer student average ($M = 3.6$) was still significantly higher than the first-year student average ($M = 3.5$), and student group accounted for .4% of the variance in the mean rating over all 49 Needs items.

Student Ethnicity

Respondents were classified according to the UW's coding system into the following ethnic groups:

African American (n = 52)	Hispanic American (n = 108)
Asian American (n = 596)	Native American (n = 35)
White American (n = 1783)	

The overwhelming majority (68%) of the 2601 respondents were White American. Asian Americans made up 23% of the sample, and Hispanic, African American, and Native American students together constituted 9% of the sample. The three latter groups were combined into a group called Other Minority because of their small numbers, but we do not wish to imply that they are indistinguishable among themselves. Because the test for any differences among the three student groups was significant ($F(2,2598) = 46.37$, $p < .001$), tests for the simple effects of ethnicity on the individual scales were conducted. In Table 7, Needs ratings are compared for the three groups.

The ethnic group differences tended to be larger than those observed between first-time and transfer students: The average precentage of variance accounted for by student ethnicity was 1.6%. Only two of the comparisons (General Skills and Group) yielded no significant pairwise differences. Broadly speaking, Asian and Other Minority students tended to give ratings that were more similar to one another than they were to White students' ratings. There were three main exceptions to this pattern. First, on the Entrepreneurship scale Asian students gave the highest ratings (3.5), Other Minority students the lowest (3.0), and Whites fell midway between (3.3); moreover, all three group averages were significantly different from one another, and student ethnicity accounted for 6.5% of the variance. This was the largest

observed ethnicity difference. The other two exceptions were on the Science scale, where Asians gave higher ratings than Whites and Other Minority students, and the Influence scale, where the Other Minority group average was higher than that of Whites and Asians.

As can be seen when looking at the Overall Needs scale averages, as a group White students gave the lowest ratings. Despite this difference in mean *extremity* of ratings, the three groups were similar in how they *ordered* the scales, especially at the upper and lower ends. All groups rated Academic Success and General Skills highest, Literacy and Information Technology next highest, and Arts lowest.

Student Gender

The main effect for student gender was significant, $F(1,2599) = 14.84$, $p < .001$. Table 8 presents a comparison of the average ratings of males and females. There were eight significant differences, and the average eta^2 over all ten scales was 1.2%. On two of the scales where there was a significant effect for gender, men gave higher ratings (Science and Entrepreneurship), whereas women gave higher ratings on Humanitarianism, General Skills, Group, Literacy, Arts, and Academic Success. The largest observed differences were on Humanitarianism ($M_{female} = 3.4$, $M_{male} = 3.1$) and Science ($M_{female} = 3.2$, $M_{male} = 3.5$).

Despite the numerous and somewhat substantial differences on the individual Needs scales, the full model analysis of the Overall Needs average returned no significant difference between women and men ($M_{female} = 3.6$, $M_{male} = 3.5$). In other words, the mean gender difference was not very large and, furthermore, when the effects of student type (i.e., transfer vs. first-year) and ethnicity were taken into account simultaneously with gender, gender failed to account for a significant and unique portion of the variance in the ratings over and above that accounted for by student type and ethnicity.

Interactions among Demographic Variables

There were a number of interesting interaction effects between gender and ethnicity that modify results discussed earlier. Because there were no interactions between transfer student status and either of the other two demographic variables, the sample was divided into six groups based on gender and ethnicity and post hoc comparisons were conducted in order to pinpoint the exact nature of these interactions (see Table 9). In many cases, one or two of the gender-by-ethnicity groups differed from the remainder of the sample. In general, White men gave lower ratings across all of the Needs scales than did the other five groups, $F(5,2595) = 22.48$, $p < .001$. The average for White male students on the Humanitarian scale was 3.0 (*vs.* 3.4 for the remainder of the sample) and was the source both for the gender and the ethnicity effects discussed above. Other Minority and White women gave a combined mean rating of 3.1 on the Science scale, while the combined mean for the other four groups was significantly higher at 3.5. On the Influence scale, Other Minority men ($M = 3.4$) gave higher ratings than Asian women and Whites (combined $M = 3.1$), with Asian men and Other Minority women falling in-between (combined $M = 3.3$).

CONCLUSIONS

This report examined the educational needs or desires of 1998 entering undergraduate students. As would be expected when entering a university, students tended to give high desirability ratings for most of the domains, but they also discriminated among items. The high ratings on Academic Success and General Skills suggest that, as a group, students want to be well-rounded high achievers. That Information Technology was rated as highly as Literacy reflects the awareness on the part of these students that the ability to locate information from electronic sources is fast becoming as basic a skill as reading and writing. The desire for achieving some sort of personal power, as reflected in the ratings of Influence and Entrepreneurship, was not as widely endorsed. Artistic pursuits were the lowest rated but, as with the Science scale, showed large variation from student to student. Thus, the segment of the entering student population interested in pursuing a course of study in the arts may be relatively small, but it is also enthusiastic. The lack of correlation between ratings on the Arts scale and ratings on the Science scale is interesting in that one might expect the two scales to be negatively correlated. Instead, it appears that entering students see these simply as two distinct, rather than opposed, areas of study.

The Needs scales tended to be related to items which asked about students' expectations of how well the UW would prepare them for extra-academic and post-undergraduate life. In other words, what students desire from the UW, educationally, is related to what they believe a UW education can provide for them in the larger arena of life. In this report, the data were analyzed under the implicit assumption that educational desires precede expectations (i.e., one enrolls at the UW -- and not some other university -- because one believes the UW is a place where one's desires will be met), but one might also argue that expectations precede desires (i.e., one molds one's desires to fit what one thinks is attainable given the available opportunities). Unfortunately, because the data were all collected at one point in time, there is no way to test which model provides a more accurate description of students' experiences. In any case, the pattern of intercorrelations and the results of the regression analyses presented here provide support for the validity of the Needs scales and give insight into the correlates of students' expectations of UW.

There are several possible reasons for the overall higher Needs ratings given by transfer students in comparison to first-time students. First, this could be an indirect consequence of age, such that older students are more focussed and driven than younger students; thus, because transfer students tended to be older, they had stronger goals and, in turn, gave higher ratings. To test this idea, supplementary analyses involving the seven Needs scales showing significant differences between transfer and first-year students were conducted using the method suggested by Baron and Kenny[1]. The results of those analyses offered little support for the age-mediation hypothesis. Specifically, age was found to mediate (underlie) only partially the relationship between student type and scale rating on the Humanitarian and Literacy scales, and *no* mediation was observed for General Skills, Influence, Arts, Entrepreneur, and Information Technology.

Another possible reason for the differences between transfer and first-year students is suggested by research on the relationship between effort and commitment. This literature indicates that there is a direct relationship between the effort expended toward attaining a goal and subsequent commitment to that goal. One might argue that transfer students have, as a group and relative to first-year students, expended more effort toward getting into the University and, thus, their relatively greater commitment is

reflected in their Needs ratings. Unfortunately, we have no way of directly testing that hypothesis with the data we have on hand.

Whatever the reasons for the overall difference between first-time and transfer students, it is still the case that differences on the individual scales varied in magnitude and direction. The two student groups differed least on those scales which concerned general knowledge (e.g., General Skills, Group, Academic Success, Information Technology). Furthermore, transfer students exhibited greater interest in humanistic topics (i.e., Humanitarianism, Literacy, Influence, Arts), whereas first-time students showed more interest in personal gain (i.e., Entrepreneurship). The fact that these scales can be clustered so readily into higher-order dimensions suggests that these are meaningful differences between transfer students and first-time students in terms of their educational desires.

There were several differences by gender and ethnicity, and some of these were quite large as compared with what one normally observes in educational and psychological research. As has been found in other research, interest in science was greatest among Asian students and lowest among White and Other Minority women.[2] Asian and Other minority students (especially women) showed a significant concern for social and humanitarian issues -- a finding that is in keeping with research on collectivistic vs. individualistic value orientations.[3]

Others have found both high school and college women to be more studious and academically motivated than their male counterparts.[4] To the extent that the General Skills scale comes closest of all the scales to tapping into a student's overall level of academic motivation, this may be what underlies the gender differences observed on that scale. The findings that entering Asian and Other Minority students gave higher ratings than Whites on the Academic Success scale and that White male students generally gave lower ratings over all scales are puzzling, but bear noting nonetheless. Additional research would be necessary to determine what psychological or social factors are driving these striking results.

TABLES

Table 1. The Scales

Humanitarianism (% of Variance = 9.68; α = .85)	**(Mean, SD)**
1. Participating in a community action program **[Goals]**	(3.01, 1.04)
2. Helping to promote racial understanding **[Goals]**	(3.21, 1.08)
3. Community service opportunities **[Opportunities]**	(3.24, 1.05)
4. Becoming involved in programs to improve environment **[Goals]**	(2.86, 1.06)
5. Interaction with diverse cultures and people **[Opportunities]**	(3.48, 1.05)
6. Help others who are in difficulty **[Goals]**	(3.80, 0.89)
7. Understanding and appreciating diverse philosophies and cultures **[Necessities]**	(3.33, 1.23)
8. Understanding interaction of society and environment **[Necessities]**	(3.36, 1.19)
9. Developing a meaningful life philosophy **[Goals]**	(3.43, 1.20)
General Skills (% of Variance = 8.03; α = .81)	
1. Locating information needed to make decisions or solve problems **[Necessities]**	(4.27, 0.84)
2. Using the knowledge, ideas or perspectives gained from major or field **[Necessities]**	(4.52, 0.72)
3. Working cooperatively in a group **[Necessities]**	(4.23, 0.89)
4. Using knowledge gained from outside of your major field **[Necessities]**	(4.11, 0.88)
5. Using management or leadership capabilities **[Necessities]**	(4.10, 0.95)
6. Defining and solving problems **[Necessities]**	(4.32, 0.84)
7. Working effectively with modern tech., especially computers **[Necessities]**	(4.27, 0.90)
8. Working and/or learning independently **[Necessities]**	(4.18, 0.87)
Science (% of Variance = 7.95; α = .84)	
1. Understanding/applying scientific principles or methods **[Necessities]**	(3.46, 1.34)
2. Understanding/applying quantitative principles or methods **[Necessities]**	(3.39, 1.28)
3. Making a theoretical contribution to science **[Goals]**	(2.39, 1.19)
4. Opportunities to do math or other quantitative analyses **[Opportunities]**	(3.20, 1.26)
5. Opportunities to define and solve problems **[Opportunities]**	(3.77, 0.92)
6. Labs and other classroom 'learning by doing' opportunities **[Opportunities]**	(3.90, 0.93)
7. Working on a professor's research/publishing project **[Opportunities]**	(3.21, 1.08)
Group (% of Variance = 5.44; α = .76)	**(Mean, SD)**
1. Group/team projects **[Opportunities]**	(3.59, 0.92)
2. Oral presentations **[Opportunities]**	(3.09, 1.10)

3. Group discussions **[Opportunities]**	(3.66, 0.95)
Literacy (% of Variance = 5.21; = .73)	
1. Writing effectively **[Necessities]**	(4.06, 0.98)
2. Critically analyzing written information **[Necessities]**	(4.02, 0.98)
3. Writing opportunities **[Opportunities]**	(3.38, 1.03)
4. Speaking effectively **[Necessities]**	(4.24, 0.89)
Influence (% of Variance = 4.78; = .76)	
1. Influencing social values **[Goals]**	(3.19, 1.07)
2. Influencing political structure **[Goals]**	(2.51, 1.07)
3. Keeping up to date with political affairs **[Goals]**	(3.09, 1.06)
4. Becoming an authority in my field **[Goals]**	(3.87, 0.94)
5. Becoming a community leader **[Goals]**	(2.93, 1.08)
6. Recognition from colleagues for contributions in field **[Goals]**	(3.56, 0.98)
Arts (% of Variance = 4.66; = .69)	
1. Understanding and appreciating the arts **[Necessities]**	(2.69, 1.32)
2. Writing original works/creating artistic work **[Goals]**	(2.58, 1.30)
3. Becoming accomplished in one of the performing arts **[Goals]**	(2.38, 1.26)
Academic Success (% of Variance = 4.48; = .73)	
1. Get good enough grades to attend grad or professional school **[Goals]**	(4.44, 0.82)
2. Going to graduate or professional school **[Goals]**	(3.99, 1.04)
3. Making B or better average at UW **[Goals]**	(4.61, 0.60)
Entrepreneurship (% of Variance = 3.94; = .53)	
1. Being very well off financially **[Goals]**	(3.77, 0.98)
2. Becoming successful in a business of my own **[Goals]**	(2.91, 1.24)
3. Administrative responsibility for the work of others **[Goals]**	(2.99, 1.07)
4. Graduating with no more than four years of college **[Goals]**	(3.00, 1.39)
Information Technology (% of Variance = 3.59; = .58)	**(Mean, SD)**
1. Computer internet opportunities and/or practice **[Opportunities]**	(3.87, 0.94)
2. Opportunities to find info in libraries and/or networked resources **[Opportunities]**	(4.02, 0.87)

Note: n = 3126

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Table 2. Frequency distribution of the Overall Needs scale

Label	Range	Frequency	Percentage	Cumulative Percentage
Not at all	1.00 - 1.24	0	0.0	0.0
	1.25 - 1.74	0	0.0	0.0
Slightly	1.75 - 2.24	1	0.03	0.03
	2.25 - 2.74	8	0.3	0.3
Moderately	2.75 - 3.24	96	3.1	3.4
	3.25 - 3.74	728	23.3	26.7
Very	3.75 - 4.24	1305	41.7	68.4
	4.25 - 4.74	825	26.4	94.8
Essential	4.75 - 5.00	163	5.2	100.0

Note: n = 3126

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Table 3. Correlations among scales

	1	2	3	4	5	6	7	8	9	10	11
1. Humanitarianism	1.00										
2. General Skills	0.34	1.00									
3. Science	0.20	0.39	1.00								
4. Group	0.40	0.35	0.24	1.00							
5. Literacy	0.43	0.48	0.12	0.38	1.00						
6. Influence	0.53	0.31	0.21	0.42	0.39	1.00					
7. Arts	0.40	0.09	-.01	0.19	0.29	0.23	1.00				
8. Academic Success	0.26	0.32	0.32	0.20	0.25	0.33	0.00	1.00			
9. Entrepreneurship	0.12	0.19	0.16	0.25	0.14	0.34	0.04	0.21	1.00		
10. Info Tech	0.26	0.36	0.39	0.39	0.24	0.23	0.08	0.22	0.18	1.00	
11. Overall Needs	0.75	0.67	0.57	0.61	0.61	0.70	0.39	0.49	0.41	0.51	1.00

Note: n = 3126 The critical values for $p < .01$ and .001 are $r = .046$ and .059, respectively.

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Table 4. Percentage distribution of:
"How well do you expect your UW experience to prepare you for:"

Response Category	Graduate School	Your future career	Everyday life	Contributing to society	Life-long learning
Not at all (1)	0.7	0.0	0.8	0.5	0.4
Slightly (2)	0.7	0.2	4.7	5.2	3.1
Moderately (3)	5.9	6.6	28.2	31.1	20.1
Very (4)	50.5	42.8	45.3	44.2	47.3
Extremely (5)	42.1	50.4	21.2	19.0	29.2
Mean	4.3	4.4	3.8	3.8	4.0

Note: n = 3111. Responses were recoded from 0-4 to 1-5.

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Table 5. Correlations of need scales with five UW Preparation itemsand beta weights from stepwise regression analyses.

	Grad Sch.		Career		Life		Society		Lifelong Learning		Mean Prep.	
	r	***B***	***r***	***B***	***r***	***B***	***r***	***B***	***r***	***B***	***r***	***B***
Humanitarian.	.17	--	.11	--	.21	.10	.40	.26	.31	.15	.33	.13
General Skills	.27	.09	.24	.14	.21	.07	.25	.06	.28	.09	.33	.12
Science	.21	.04	.18	.05	.13	--	.16	--	.19	.05	.23	.04
Group	.19	.05	.19	.07	.22	.08	.29	.09	.28	.08	.32	.10
Literacy	.22	.06	.14	--	.19	.05	.27	.05	.27	.08	.30	.07
Influence	.23	.04	.15	.04	.19	--	.33	.10	.27	.05	.32	.07
Arts	.04	--	-.01	-.06	.09	--	.16	--	.13	--	.12	--
Acad. Success	.43	.37	.14	--	.22	--	.17	--	.16	--	.26	.08
Entrepreneur.	.09	-.05	.13	.05	.22	.16	.17	.06	.16	.05	.21	.08
Info. Tech.	.18	--	.23	.12	.18	.05	.20	.04	.24	.08	.28	.08
R^2 (model)	.22		.10		.11		.20		.16		.47	

Note: n = 3111.

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Table 6. Differences between first-time, first-year and transfer students

	Mean (SD) Rating				
	First-year *n* = 2025	**Transfer *n* = 576**	***F***	**Sig.**	***eta*^{2}**
Humanitarian	3.22 (.73)	3.50 (.74)	68.80	*p*<.001	2.6%
General Skills	4.24 (.57)	4.30 (.54)	6.79	*p*<.01	0.3%
Science	3.31 (.81)	3.35 (.85)	< 1	*ns*	0.0%
Group	3.44 (.81)	3.48 (.84)	1.06	*ns*	0.0%
Literacy	3.87 (.73)	4.05 (.68)	28.13	*p*<.001	1.1%
Influence	3.13 (.69)	3.31 (.70)	29.09	*p*<.001	1.1%
Arts	2.47 (.99)	2.65 (1.1)	14.24	*p*<.001	0.5%
Acad. Success	4.33 (.68)	4.34 (.68)	< 1	*ns*	0.0%
Entrepreneur	3.21 (.73)	3.02 (.78)	29.91	*p*<.001	1.1%
Info. Tech.	3.91 (.77)	4.01 (.73)	8.60	*p*=.003	0.3%
Overall Needs*	3.50 (.45)	3.61 (.43)	10.81	*p*=.001	0.4%

Note: The F-value and eta2 for the Overall Needs scale are from an analysis that included all three demographic variables. Return

Table 7. Differences across ethnic groups

	Mean (SD) Rating					
	White American *n* = 1783	**Asian American *n* = 596**	**Other Minority *n* = 222**	***F* (overall)**	**Sig.**	***eta*^{2}**
Humanitarian	3.19 (.70)[a]	3.46 (.68)[b]	3.48 (.74)[b]	38.30	*p*<.001	2.9%
General Skills	4.23 (.56)	4.28 (.58)	4.32 (.53)	3.39	*p*=.03	0.3%
Science	3.26 (.85)[a]	3.54 (.75)[b]	3.23 (.82)[a]	27.16	*p*<.001	2.0%
Group	3.42 (.82)	3.47 (.83)	3.54 (.76)	2.78	*ns*	0.2%
Literacy	3.87 (.74)[a]	3.97 (.68)[b]	4.05 (.66)[b]	9.05	*p*<.001	0.7%
Influence	3.14 (.69)[a]	3.21 (.68)[a]	3.31 (.74)[b]	7.10	*p*=.001	0.5%
Arts	2.44 (1.0)[a]	2.67 (.91)[b]	2.61 (1.0)[a,b]	12.49	*p*<.001	1.0%
Acad. Success	4.28 (.70)[a]	4.49 (.62)[b]	4.42 (.66)[b]	22.63	*p*<.001	1.7%
Entrepreneur	3.32 (.77)[a]	3.49 (.69)[b]	3.04 (.73)[c]	89.84	*p*<.001	6.5%
Info. Tech.	3.89 (.77)[a]	4.01 (.75)[b]	4.02 (.76)[b]	7.88	*p*<.001	0.6%
Overall Needs*	3.47 (.43)[a]	3.66 (.46)[b]	3.63 (.43)[b]	21.72	*p*<.001	1.7%

Note. For each scale, means which do not share superscripts are significantly different at p<.01. The F-value and eta2 for the Overall Needs scale are from an analysis that included all three demographic variables.

Return

Table 8. Differences by gender

	Mean (SD) Rating				
	Males *n* = 1219	**Females *n* = 1382**	***F***	**Sig.**	***eta*^{2}**
Humanitarian	3.10 (.74)	3.43 (.71)	126.40	*p*<.001	4.6%
General Skills	4.19 (.56)	4.31 (.56)	26.93	*p*<.001	1.0%
Science	3.47 (.75)	3.20 (.85)	72.00	*p*<.001	2.7%
Group	3.39 (.81)	3.49 (.81)	10.04	*p*=.002	0.4%
Literacy	3.81 (.73)	4.00 (.71)	43.09	*p*<.001	1.6%
Influence	3.17 (.70)	3.17 (.69)	< 1	*ns*	0.0%
Arts	2.42 (1.0)	2.59 (1.0)	18.08	*p*<.001	0.7%
Acad. Success	4.28 (.70)	4.38 (.66)	14.01	*p*<.001	0.5%
Entrepreneur	3.22 (.75)	3.13 (.74)	9.42	*p*<.002	0.4%
Info. Tech.	3.91 (.73)	3.94 (.79)	< 1	*ns*	0.0%
Overall Needs*	3.49 (.44)	3.56 (.45)	< 1	*ns*	0.0%

Note. The F-value and eta2 for the Overall Needs scale are from an analysis that included all three demographic variables. Return

Table 9. Interaction Effects

	Male			Female		
	Asian *n* = 273	**Other *n* = 92**	**White *n* = 854**	**Asian *n* = 323**	**Other *n* = 130**	**White *n* = 929**
Humanitarian	3.4 (.68)[a]	3.4 (.74)[a]	3.0 (.72)[b]	3.5 (.68)[a]	3.5 (.67)[a]	3.4 (.72)[a]
Science	3.6 (.70)[a]	3.4 (.75)[a]	3.4 (.77)[a]	3.5 (.79)[a]	3.1 (.89)[b]	3.1 (.85)[b]
Influence	3.3 (.70)[a,b]	3.4 (.70)[a]	3.1 (.68)[b]	3.2 (.66)[b]	3.2 (.76)[a,b]	3.2 (.70)[b]

Note. For each scale, means which do not share superscripts are significantly different at p<.01. Return

[1]Baron, R. M. & Kenny, D. A. (1986). The moderator—mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173—1182. *Return*

[2]See, for example, the National Science Foundation report: *Women, Minorities, and Persons with Disabilities in Science and Engineering: 1998.* *Return*

[3]There are literally hundreds of studies on ethnic and gender differences in collectivism and individualism, but for a particulary pertinent study, see: Gaines et al. (1997). Links between race/ethnicity and cultural values as mediated by racial/ethnic identity and moderated by gender. *Journal of Personality and Social Psychology, 72,* 1460-1476. *Return*

[4]Vallerand et al. (1993). On the assessment of intrinsic, extrinsic, and amotivation in education: Evidence on the concurrent and construct validity of the Academic Motivation Scale. *Educational and Psychological Measurement, 53,* 159-172.
Stricker et al. (1993). Sex Differences in Predictions of College Grades From Scholastic Aptitude Test Scores. *Journal of Educational Psychology, 85,* 710-718. *Return*