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Editor’s Note

Themes for the articles in this issue of C&U revolve around change, technology, collaboration, and prediction. These themes are, I believe, critical to planning and decisionmaking in higher education. It is through the use of technology, the ability to change, the need to collaborate, the data upon which we predict success, and the needs of the future that guide us as administrators.

As Fall 2003 approaches, we are faced with budget shortfalls, an ever expanding demand for enrollment, and more accountability by our various stakeholders. The tools and experiences afforded us by articles such as those that appear in C&U are as important as ever.

Betty Huff

Instructions to Authors

The C&U Advisory Committee welcomes manuscripts for publication in College & University, AACRAO’s scholarly research journal. AACRAO members are especially encouraged to submit articles pertaining to their own experiences with emerging issues or innovative practices within the profession. Authors will receive copies of the issue in which their article appears, and will be issued an author honorarium.

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College & University also welcomes comments on articles, timely issues in higher education, and other topics of interest to this journal’s readers in the form of guest commentary. We especially invite AACRAO members to participate in reviewing books.

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The editor will acknowledge receipt of manuscripts (letters will not be acknowledged) and will forward them to members of the C&U Advisory Committee for review. The Committee will consider the appropriateness of the article for AACRAO’s membership, the current needs of the professions, the usefulness of the information, the nature and logic of the research methodology, clarity, and the style of presentation.

This review may take as long as three months, after which the C&U editor will inform the author of the manuscript’s acceptance or rejection.

Manuscript Preparation

Manuscripts for feature articles should be no longer than 4,500 words. Manuscripts for guest commentary and book reviews should not exceed 2,000 words. Letters to the editor will ordinarily be limited to 200 words.

All submissions must be saved to an IBM-compatible disk (Microsoft Word, preferably) and include a hard-copy original printed on 8.5” x 11” white paper. Because the Committee has a blind review policy, the author’s name should not appear on any text page. A cover sheet should include the title of the manuscript, author’s name, address, phone and fax number, and e-mail address.

References should be formatted in the author-date style and follow guidelines provided on page 526 of The Chicago Manual of Style, 14th edition. A list of references should appear at the end of the article. Text citations also follow the author-date format; examples may be found on page 641 of the Manual. For more information or for samples, please contact the C&U editor.

In addition to being placed in the manuscript, the data for essential tables and charts should also be included in a separate Microsoft Excel (spreadsheet) file.

All submissions are accepted for publication with the understanding that the College & University editors reserve the right to edit for clarity and style. Please do not submit articles that are under consideration for publication by another periodical.

Authors whose manuscripts are selected for publication will be asked to submit a short biographical statement and an abstract of their article, each no more than thirty-five words.
Mo-Yin S. Tam and Uday Sukhatme

The Importance of High School Quality in University Admissions Decisions

Abstract

The authors studied the student pipeline at the University of Illinois at Chicago over a period of six years to pinpoint which attributes of entering students provide the best indicators of university success. They found that the best indicator is a modified high school percentile rank, designed specifically to take high school quality into account.

Although urban public universities enjoy many benefits based on their special locations, they generally suffer from substantially lower graduation rates as compared to their non-urban counterparts. This lowers the rankings of urban public universities in comparative studies such as those made annually in U.S. News & World Report. This, in turn, makes it harder for these institutions to hire talented faculty and to attract top quality students (U.S. News and World Report Online 2001). Furthermore, admitting students who do not succeed wastes limited educational resources.

It is clear that most urban public universities need to make considerable improvements in their admission and retention efforts. In order to do this, it is essential to determine which freshman student attributes provide the best indicators of subsequent university success in the urban university setting. The authors’ analysis is carried out using data from the University of Illinois at Chicago (UIC), with a careful study of the student pipeline over a period of six years. Although the conclusions drawn are based on UIC data, it is reasonable to apply the results to other urban public universities with a dominant commuter student body similar to UIC. More specifically, the authors made an in-depth analysis on a cohort of 2,529 freshmen who entered UIC in Fall 1994. This choice was necessary in order to examine the six-year graduation rate. UIC has a relatively low six-year graduation rate of about 36 percent, and will clearly benefit from a better understanding of the attributes of both successful and unsuccessful students. It was studied in detail how success is related to four quantitative, quasi-continuous, input attributes that characterize new students:

- **HSPR**: student’s individual high school percentile rank
- **ACT**: student’s individual ACT score
- **HSACT**: the average ACT score of the student’s high school
- **HSPR***: modified student high school percentile rank (HSPR x HSACT/36)

A measure of school quality was incorporated into the new variable \textsc{hspr*} by including the \textsc{hsact} factor. The authors also studied student performance as a function of the four input variables and their linear combinations in order to pinpoint the best indicator of success at UIC. The analysis was then repeated with subsets, obtained by making various choices of discrete characteristics like gender [male, female] and race/ethnicity [Latino, Black, Asian, White]. This permitted the authors to examine the dependence of success at UIC on gender and race.

It should be noted that other input variables and their predictive capabilities for university success have been examined by several authors. These include studies of the academic rigor of a student’s high school program (Young and Barrett 1992), academic records (Touron 1983), mathematics testing (Haack, Yeld, Conradie, Robertson, and Shall 1997), and district performance indices (Bennett, Wesley and Dana-Wesley 1999). In fact, at this time, there is considerable pressure for higher education to find new ways of assessing the fitness of high school students for college study (Stern and Briggs 2001).

Mo-Yin S. Tam is an Associate Vice Chancellor for Academic Affairs and a Professor of Economics at UIC. She is the PI of a recent NSF grant (September 1, 2000 to November 30, 2002). Her research interests include digital divide, college admission decisions, and diversity issues.

Uday Sukhatme served as Vice Provost for Academic Affairs at UIC before recently becoming Dean of Arts and Sciences at SUNY Buffalo. He has originated several innovative high school outreach programs. His research interests are theoretical high energy physics and quantum mechanics.

The authors would like to thank Carole Snow, Ann Feldman, Anne Cruz, Chris Messenger, Gilbert Bassett, Joseph Persky, Julie Smith and Barbara Zusman for helpful discussions and data.
Overall Pipeline

The overall pipeline showing the time evolution of the 2,529 freshmen that entered UIC in Fall 1994 is given in Table 1 and graphed in Figure 1. Table 1 shows as a function of time the percentage of students who continue to remain enrolled at UIC, those who graduate, those who drop out in poor academic standing, and those who drop out in good standing.

At UIC, grades are given on a 5-point scale, and students who leave in good or poor standing are those who leave with a cumulative GPA ≥ 3.0 or a cumulative GPA < 3.0, respectively. The category of students who drop out in poor standing includes both students who drop out while on probationary status and those who are dropped by the University for unsatisfactory academic standing. In this study, the roster of student identifiers is examined annually and compared with the starting 1994 roster. Thus, included in the students who graduate are those who were continuously enrolled, and also those who took a few intermediate semesters off from school.

The six-year graduation rate is 36 percent. Much of the attrition occurs in the first two years, since 76 percent of those students who dropped out in poor standing did so in the first two years. This highlights the importance of retention programs in the early years for students at risk. The four-year graduation rate is only 8 percent, though most of the students who are still enrolled at the end of four years do eventually graduate. This supports the use of a six-year graduation rate as a better outcome measure than the traditional four-year rate. The authors focused on the quantity 0/6, the percentage of entering students who graduate from UIC within 6 years. Figure 2 shows the status of all the students at the end of six years. This is essentially a graphical representation of the last column of Table 1.

Input Variables

The six-year graduation rate is a function of the input variables that characterize entering students. The authors wanted to study this dependence in order to decide which input variables are the most important, and to use this knowledge to maximize the graduation rate. Note that in the approach, there is no ad hoc, predetermined decision about which input variables are important—this result emerges automatically from the analysis of the data.

Some quantitative attributes (input variables) of incoming freshmen and their range of values are tabulated below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>Normalized Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student high school percentile rank (HSPR)</td>
<td>0 to 100</td>
<td>HSPR</td>
</tr>
<tr>
<td>Student ACT score (ACT)</td>
<td>0 to 36</td>
<td>NACT = ACT x 100/36</td>
</tr>
<tr>
<td>Average high school ACT score (HSACT)</td>
<td>0 to 36</td>
<td>NHSACT = HSACT x 100/36</td>
</tr>
<tr>
<td>Modified student high school percentile rank (HSPR*)</td>
<td>0 to 100</td>
<td>HSPR*</td>
</tr>
</tbody>
</table>

Of the above variables, only the individual student HSPR and ACT scores are currently used in the UIC admissions process. The average high school ACT score is not used. However, it is a measure of school quality and therefore is potentially important. The modified student high school percentile rank HSPR* has been defined in such a manner so as to take into consideration the quality of the high school in a student’s high school ranking. The values of ACT and HSACT range from 0 to 36. These variables are normalized so that they take values ranging from 0 to 100, which is the same as the range of values for HSPR and HSPR*. After normalization, the impact of all input variables on the output variables can be easily compared.

Table 1: Status of the Fall 1994 Cohort of Freshmen as a Function of Time (percentages of students at the end of an academic year, with year 1 denoting AY 1994–95)

<table>
<thead>
<tr>
<th>Status</th>
<th>At the end of academic year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolled students (E)</td>
<td>100 72 58 51 39 17 5</td>
</tr>
<tr>
<td>Graduated students (G)</td>
<td>0 0 0 0 8 26 36</td>
</tr>
<tr>
<td>Dropouts in poor standing (D Poor)</td>
<td>0 22 32 36 39 41 42</td>
</tr>
<tr>
<td>Dropouts in good standing (D Good)</td>
<td>0 6 10 13 14 16 17</td>
</tr>
<tr>
<td>Total</td>
<td>100 100 100 100 100 100 100</td>
</tr>
</tbody>
</table>

Graphs 1 and 2 highlight the importance of school percentile rank and ACT scores as output variables.
Note that the average high school ACT score is just one of several plausible indicators of school quality. Other possible quantitative attributes of quality that have not been investigated in this paper are the percentage of students going to college and the number of AP courses offered. Likewise, other quantitative variables like student high school grade point average, and scores on the UIC placement examinations can and should also be studied, but are excluded here for lack of complete data. Qualitative variables like sports participation, extra-curricular activities, level of difficulty of high school courses, summer job experience, and education of parents were also left out, since this information was not always available and needs subjective interpretation.

First studied was the dependence of the graduation rate $G$ on each of the above-defined input variables separately using a single variable regression analysis. Then, its dependence on each of the above-defined input variables separately using a composite variable was examined. The composite variables obtained by making linear combinations of single variable regression analysis. Then, its dependence on each of the above-defined input variables separately using a linear combination of the ACT and HSPR, and currently used for making admissions decisions at UIC. Clearly, a plausible modified selection index ($s1^*$), which the authors discuss later, consists of making a linear combination of ACT and HSPR$^*$.

**Characteristics of the Entering Cohort**

To better understand the profile of the cohort under study, the distributions of the percentage of entering freshmen as a function of the four input variables (ACT, HSPR, HSACT and HSPR$^*$) are shown in Figure 3. The area under each distribution is 100 percent. The distributions in ACT and HSPR have mean values of 20.8 and 73 percent, respectively. The distribution of freshmen in terms of the average ACT of their high school (HSACT) shows a surprising dip structure, which divides the cohort reasonably cleanly into two classes—about 30 percent of the students come from schools with HSACT less than 19, whereas 70 percent come from schools with HSACT greater than 19. The mean value of the HSACT distribution is 19.8. As indicated before, $HSPR^*$ is defined as $HSPR$ weighted by the fraction $hsact/36$. Since HSACT for the Fall 1994 cohort has a mean of only 19.8 and is tightly distributed with a standard deviation of 2.8, $HSPR^*$ has a mean lower than $HSPR$ (40 percent versus 73 percent) and is more tightly distributed (having a standard deviation of 9.6 percent versus 17.6 percent for HSPR). Table 2 lists the mean values and standard deviations of all distributions. It summarizes the profile of the entering cohort in Fall 1994. It should be noted that only 1,668 students from the Fall 1994 cohort were included in the HSACT and HSPR$^*$ distributions. These are students from Illinois public schools, which are annually required to provide HSACT data to the Illinois State Board of Education. The remaining students come from private/parochial or out-of-state schools for which reliable HSACT data are not available.

![Figure 3: Status of UIC Fall 1994 Cohort of freshmen as a function of time](image-url)

**Table 2: Student Profile of the Fall 1994 Cohort**

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th></th>
<th>HSPR</th>
<th></th>
<th>HSACT</th>
<th></th>
<th>HSPR$^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean</td>
<td>s.d.</td>
<td>N</td>
<td>Mean</td>
<td>s.d.</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>1994 Cohort</td>
<td>2,529</td>
<td>20.8</td>
<td>3.9</td>
<td>2,529</td>
<td>73.0</td>
<td>17.6</td>
<td>1,668</td>
</tr>
<tr>
<td>Male</td>
<td>1,402</td>
<td>20.3</td>
<td>3.7</td>
<td>1,402</td>
<td>74.9</td>
<td>17.2</td>
<td>941</td>
</tr>
<tr>
<td>Female</td>
<td>1,127</td>
<td>21.6</td>
<td>4.0</td>
<td>1,127</td>
<td>70.7</td>
<td>17.8</td>
<td>727</td>
</tr>
<tr>
<td>Asian</td>
<td>610</td>
<td>20.8</td>
<td>3.8</td>
<td>610</td>
<td>74.4</td>
<td>17.0</td>
<td>469</td>
</tr>
<tr>
<td>Black</td>
<td>332</td>
<td>18.9</td>
<td>3.4</td>
<td>332</td>
<td>71.3</td>
<td>18.4</td>
<td>217</td>
</tr>
<tr>
<td>Latino</td>
<td>561</td>
<td>18.9</td>
<td>3.1</td>
<td>561</td>
<td>74.8</td>
<td>17.2</td>
<td>374</td>
</tr>
<tr>
<td>White</td>
<td>949</td>
<td>22.6</td>
<td>3.7</td>
<td>949</td>
<td>71.7</td>
<td>17.8</td>
<td>562</td>
</tr>
</tbody>
</table>
Single Variable Analysis

In this section, it is studied in more detail how the graduation rate $G_6$ depends on the input variables $ACT$, $HSPR$, $HSACT$, and $HSPR^*$. $G_6$ is regressed on each of the input variables, weighted by the number of students. The results of these one-variable regressions are displayed in Figure 4. It is clearly seen that straight lines fit the data very well, justifying linear regressions. The statistics of the regressions are given in Table 3. The slopes are all positive and statistically significant at the 1 percent level, as indicated by the value of the $t$-statistics. Hence, all four inputs contribute to student success.

To compare the relative impacts of the input variables on $G_6$, the authors construct the normalized slopes of various regressions. More precisely, we use normalized input variables ($v$) in the regression form $G_6 = a + mv$, to obtain the normalized slopes ($m$). They are listed in Table 4 and represented graphically in Figure 5 on the next page. Input variables that yield a steeper normalized slope are more sensitive indicators of success, since small changes in them result in substantial changes in $G_6$. Indeed the whole exercise of this and the following section is to find which input variable gives the largest slope for the regression lines corresponding to $G_6$. The elasticity of $G_6$ with respect to an input variable represents the percentage change in $G_6$ with a percentage change in that input. Hence, the higher the elasticity of $G_6$ with respect to an input, the greater the impact of that input on the graduation rate. It is clear from Figure 5 and Table 4 for the variables considered so far, $HSPR^*$ has the maximum impact. This shows that the quality of the high school from which a student graduates does play an important role, and that this factor needs to be taken into consideration when predicting student success in college.

Analysis With Composite Variables—Defining A New Selection Index

UIC uses a linear combination of $ACT$ and $HSPR$ in its admissions selection index. Using the UIC data, the authors ran a multiple regression of $G_6$ on both $ACT$ and $HSPR$. The regression using a linear form $G_6 = \alpha + \beta ACT + \gamma HSPR$ gives the following statistically significant estimates: $\alpha = -.45$, $\beta = .026$, $\gamma = .004$. From the estimates, the linear tradeoff of $ACT$ and $HSPR$ can be derived. It equals $0.026/0.004$; approximately 7 $HSPR$ percentage points to 1 $ACT$ score point. This predicted tradeoff can be illustrated by computing the predicted graduation rate at the end of year six for various $ACT$ and $HSPR$ combinations. For example, the predicted graduation rate for a student with $HSPR$ of 60 percent and $ACT$ of 26 is 40 percent, which is the same as a student with $HSPR$ of 53 percent and $ACT$ of 27.

If a normalized selection index is defined by $SI = p HSPR + (1 - p)ACT$, then a linear regression on $SI$ corresponds to the fit $G_6 = \alpha + m SI$. Comparison with the two-variable regression yields $m = .36 \beta/100 + \gamma$ and $p = 100 \gamma/m$. Therefore, the value of the normalized slope is $m = .001$, which is presented in Table 4.

Since it has already been shown that $HSPR^*$ is a better indicator of student success than $HSPR$, the authors considered a new selection index obtained by using $HSPR^*$ instead of $HSPR$. The results of regressing $G_6$ on $ACT$ and $HSPR^*$ using the form $G_6 = \alpha^* + \beta^*ACT + \gamma^*HSPR^*$ yields the significant estimates $\alpha^* = -.388$, $\beta^* = .005$, $\gamma^* = .011$. Here, the predicted tradeoff can be computed by the ratio $0.005/0.011$, which is approximately one $HSPR^*$ point to each $ACT$ score point. Again, a new normalized selection index is defined by $SI^* = p^* HSPR^* + (1 - p^*)ACT$, then a

---

### Table 3: Regression Statistics—Single Variable Regressions (Output Variable = $G_6$)

<table>
<thead>
<tr>
<th>Input Variable</th>
<th>Constant</th>
<th>$t$</th>
<th>Slope</th>
<th>$t$</th>
<th>Adj. R sq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ACT$</td>
<td>-0.312</td>
<td>-24.7</td>
<td>0.0234</td>
<td>90.6</td>
<td>0.76</td>
</tr>
<tr>
<td>$HSPR$</td>
<td>0.009</td>
<td>3.7</td>
<td>0.0044</td>
<td>142.1</td>
<td>0.89</td>
</tr>
<tr>
<td>$HSACT$</td>
<td>-0.170</td>
<td>-13.7</td>
<td>0.0278</td>
<td>44.9</td>
<td>0.55</td>
</tr>
<tr>
<td>$HSPR^*$</td>
<td>-0.239</td>
<td>-41.4</td>
<td>0.0145</td>
<td>109.9</td>
<td>0.88</td>
</tr>
</tbody>
</table>

### Table 4: Comparing Impact on $G_6$ of Four Input Attributes (Single Variable Case)

<table>
<thead>
<tr>
<th>Input Variable</th>
<th>Slope</th>
<th>Normalized Slope</th>
<th>Elasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ACT$</td>
<td>0.023</td>
<td>0.008</td>
<td>1.37</td>
</tr>
<tr>
<td>$HSPR$</td>
<td>0.004</td>
<td>0.004</td>
<td>0.91</td>
</tr>
<tr>
<td>$HSACT$</td>
<td>0.028</td>
<td>0.010</td>
<td>1.55</td>
</tr>
<tr>
<td>$HSPR^*$</td>
<td>0.015</td>
<td>0.015</td>
<td>1.64</td>
</tr>
<tr>
<td>$SI$</td>
<td>0.011</td>
<td>0.011</td>
<td>—</td>
</tr>
<tr>
<td>$SI^*$</td>
<td>0.016</td>
<td>0.016</td>
<td>—</td>
</tr>
</tbody>
</table>
linear regression on $s^*$ corresponds to the fit $G = \alpha^* + m^* s^*$. Comparison with the two variable regression yields $m^* = 36 \beta' / 100 + \gamma'$ and $p^* = \gamma' / m^*$. The value of the normalized slope is $m^* = 0.016$, which is also given in Table 4.

Table 4 summarizes all the normalized slopes obtained in the analysis. The largest slopes are for the variables $s^*$ and HSPr, clearly demonstrating the importance of high school quality in admissions decisions.

**Dependence On Gender and Race**

In this section, the authors study how student success depends on gender (male/female) and race/ethnicity (Latino, Black, Asian, White). Table 2 (on page 3) gives the sample sizes of various subgroups as well as the incoming student profiles. The six-year graduation rates of Black and Latino students are 21 percent and 31 percent, respectively.

As before, linear least squares fits of $G_6$ versus each of the four input variables had been made. The results for the normalized regression slopes are presented in Table 5. All the coefficients are statistically significant at 1 percent, as indicated by their t-statistics. From the normalized slopes, it can be seen that the individual ACT score is a good indicator of success for all subgroups. It has a relatively stronger impact on the graduation rate for female students than for male students. Among the ethnic groups, it has a relatively stronger impact for Latino than for Black, Asian, and White students.

Table 5 also shows that as compared to other input variables, HSPr is not a good indicator of success. It is an especially poor indicator for the graduation rates of both Black and Latino students. On the other hand, HSACT is an important predictor for both Black and Latino students. In all cases, there is clear evidence that the modified high school percentile rank HSPr* is always a better indicator than HSPr. This reinforces the suggestion of using the modified selection index $s^*$ for making admissions decisions.

What is the impact of using a modified selection index $s^*$ (based on ACT and HSPr*) on the diversity of the student body? Its impact on the incoming cohort and the graduating group is examined. As shown earlier in Figure 3, the distribution of HSACT clearly divides the Fall 1994 cohort into two groups: one from high schools with mean HSACT greater than 19 and one with mean HSACT less than 19. A closer look at the ethnic composition of these two groups reveals that relatively more under-represented minorities come from the latter group of high schools with lower HSACT. Specifically, 21 percent of this group is Black and 40 percent is Latino. In contrast, the incoming class has corresponding percentages of 13 percent and 22 percent. Hence, it is expected that using $s^*$, which takes into consideration the HSACT, will reduce the diverse composition of the incoming students. On the other hand, the graduation rates of Black and Latino students are relatively lower (see Table 6 on the following page), and making admissions decisions using $s^*$ will improve the graduation rates. Thus, it is likely that using $s^*$ would only have a modest impact on the diversity of the graduating class. The precise impact on percentages of minorities in the incoming and graduating groups of students depends on the specific choice of the cutoff chosen in $s^*$, and this is a matter of university policy.

**Discussion and Conclusions**

In this paper, the authors have used HSACT, the average ACT score of the student’s high school, as a measure of student quality. It would be interesting to carry out an additional study using other measures of high school quality, which are free from the concerns affecting standardized test scores, particularly for Black and Latino students (Fleming and Garcia 1998; Garcia, Jorgensen, and Ormsby 1999). Likewise, a least squares regression technique was used that estimates the impact of the high school quality on the expected graduation rate. However, one can also study the impact at various points of the graduation rate distribution. Quantile regression is one way to address this issue (Koenker and Bassett 1978). The authors are currently in the process of studying the above points.

**Table 5: Comparing the Impact of Four Input Variables by Gender and Ethnicity**

<table>
<thead>
<tr>
<th>Input Variable</th>
<th>Female</th>
<th>Male</th>
<th>Asian</th>
<th>Black</th>
<th>Latino</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normalized Slope</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>0.012</td>
<td>0.006</td>
<td>0.006</td>
<td>0.009</td>
<td>0.013</td>
<td>0.007</td>
</tr>
<tr>
<td>HSPr</td>
<td>0.004</td>
<td>0.005</td>
<td>0.006</td>
<td>0.001</td>
<td>0.002</td>
<td>0.007</td>
</tr>
<tr>
<td>HSACT</td>
<td>0.013</td>
<td>0.007</td>
<td>0.003</td>
<td>0.013</td>
<td>0.016</td>
<td>0.002</td>
</tr>
<tr>
<td>HSPr*</td>
<td>0.015</td>
<td>0.014</td>
<td>0.015</td>
<td>0.009</td>
<td>0.013</td>
<td>0.013</td>
</tr>
<tr>
<td>Coefficients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>82.1</td>
<td>29.5</td>
<td>19.4</td>
<td>14.9</td>
<td>19.2</td>
<td>25.6</td>
</tr>
<tr>
<td>HSPr</td>
<td>91.9</td>
<td>76.8</td>
<td>53.1</td>
<td>5.9</td>
<td>15.3</td>
<td>87.4</td>
</tr>
<tr>
<td>HSACT</td>
<td>35.7</td>
<td>16.4</td>
<td>5.0</td>
<td>10.4</td>
<td>18.5</td>
<td>3.3</td>
</tr>
<tr>
<td>HSPr*</td>
<td>74.5</td>
<td>64.1</td>
<td>19.9</td>
<td>11.7</td>
<td>18.5</td>
<td>52.2</td>
</tr>
<tr>
<td>Constant $\alpha$</td>
<td>-0.293</td>
<td>-0.031</td>
<td>0.026</td>
<td>-0.240</td>
<td>-0.358</td>
<td>-0.012</td>
</tr>
<tr>
<td>ACT</td>
<td>0.066</td>
<td>-0.042</td>
<td>-0.059</td>
<td>0.134</td>
<td>0.165</td>
<td>-0.094</td>
</tr>
<tr>
<td>HSPr</td>
<td>-0.284</td>
<td>-0.052</td>
<td>0.256</td>
<td>-0.423</td>
<td>-0.505</td>
<td>0.350</td>
</tr>
<tr>
<td>HSACT</td>
<td>-0.252</td>
<td>-0.216</td>
<td>-0.272</td>
<td>-0.098</td>
<td>-0.219</td>
<td>-0.195</td>
</tr>
</tbody>
</table>
In conclusion, we have studied how the graduation rate depends on a variety of input variables characterizing high school students. Among the variables studied is $\text{HSPR}^*$, a new variable which we have specifically designed to take into consideration both the student’s high school rank and a measure of the quality of his/her high school. Using student pipeline data from the University of Illinois at Chicago, this study shows that $\text{HSPR}^*$ is the best indicator of success and leads to the highest graduation rate. Therefore, UIC will benefit from using a new selection index $\text{SN}^*$ (based on ACT and $\text{HSPR}^*$) in making admissions decisions. These conclusions should also be applicable to other urban, public, commuter universities.

### References


### Table 6: Graduation Rates and Gender/Race Composition of the Fall 1994 Incoming Group and the Corresponding Graduating Group

<table>
<thead>
<tr>
<th></th>
<th>Incoming Group</th>
<th>Graduating Group</th>
<th>Graduation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1,402 (55%)</td>
<td>534 (59%)</td>
<td>38%</td>
</tr>
<tr>
<td>Male</td>
<td>1,127 (45%)</td>
<td>366 (41%)</td>
<td>32%</td>
</tr>
<tr>
<td>Asian</td>
<td>610 (24%)</td>
<td>244 (27%)</td>
<td>40%</td>
</tr>
<tr>
<td>Black</td>
<td>332 (13%)</td>
<td>71 (8%)</td>
<td>21%</td>
</tr>
<tr>
<td>Latino</td>
<td>561 (22%)</td>
<td>172 (19%)</td>
<td>31%</td>
</tr>
<tr>
<td>White</td>
<td>949 (38%)</td>
<td>394 (44%)</td>
<td>42%</td>
</tr>
<tr>
<td>Other</td>
<td>77 (3%)</td>
<td>19 (2%)</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>2,529 (100%)</td>
<td>900 (100%)</td>
<td>36%</td>
</tr>
</tbody>
</table>
Joint Marketing and Student Recruitment: The State University of New York Colleges of Technology Experience

Abstract

American colleges and universities have used joint marketing and recruitment activities to reach student enrollment goals for many years. These activities include advertising, direct mail, friend-raising, personal recruitment, publications, Web pages, and an assortment of other recruitment activities sponsored by two or more institutions. Despite widespread use of these strategies, many admissions, enrollment management, marketing, and public relations professionals believe that joint marketing and recruitment activities do not have the same effect as campus-specific marketing and recruitment activities. This article, using the experience of the State University of New York Colleges of Technology, presents and evaluates a wide-ranging joint marketing and recruitment effort to assess the relative value of this approach.

Since the early 1900s, the five upstate New York Colleges of Technology—formerly known as New York State’s Colleges of Agriculture and Technology—provided in-demand educational programs at small, residential campuses to students seeking both career- and transfer-oriented one- and two-year programs. The colleges have a long history, conceived to fill an identified state need from 1906-1916, specifically for the purpose of offering instruction in agriculture and the domestic sciences. This singular purpose continued until the 1930s, when the needs of the state called for an expansion of programs to include instruction in industrial, electrical, and construction technologies. In the 1950s, program offerings grew in response to demand for business technologies, health technologies, and additional engineering technologies. Throughout the twentieth century, the colleges also offered liberal arts and sciences and other career- and transfer-oriented programs to meet the educational needs of their local communities.

While the colleges were evolving, other changes occurred in New York including the formation of the State University of New York (suny) system, the emergence of community colleges and university centers, and the transformation of normal schools into colleges of arts and sciences. As these changes occurred, the Colleges of Technology lost their distinctiveness due to internal modifications, the parallel evolution of other colleges, and because of changing societal needs. These changes eventually impacted student choice patterns. Between 1992 and 1997, enrollment at the Colleges of Technology declined 17 percent for a total net reduction of students by 2,470 (suny System Administration 1998).

Observers of the New York State higher education community saw three primary reasons for the enrollment decline at suny’s Colleges of Technology. First, the number of New York State high school graduates declined significantly during this period. The number of students graduating from New York State high schools declined from 246,945 in 1977 to 157,086 in 1995, or by about 64 percent (suny System Administration 1998). This resulted in a smaller cohort of New York State high school graduates moving to the postsecondary level during the late 1980s and early 1990s.

Second, the public community colleges expanded significantly in the middle to late part of the twentieth century and increasingly offered a credible educational option within the commuting region of most New York State residents for a frac-
tion of the cost of a residential College of Technology education. Community College Week (Borden 2002) lists five of the 30 State University of New York community colleges and an additional four City University of New York community colleges on the “Top 100” list for degree completion among community colleges nationally. Additionally, the students graduating from high school in the 1990s were concerned about the cost of higher education. With lower tuitions and geographic presence in all of New York State’s urban and suburban regions, as well as some rural areas, choosing a commuter community college became an acceptable option for many New York State high school graduates. Moreover, some community colleges began offering student housing on or near campus through private sector partnerships.

The third factor offered as a reason for the enrollment decline at the Colleges of Technology was increasing competition from four-year institutions within New York State. When the number of high school graduates declined, many four-year colleges decreased their admission selectivity to maintain their market position. Since many potential Colleges of Technology students eventually planned to receive a baccalaureate degree, this resulted in a competitive advantage for the four-year campuses and a relative decline in enrollment at the Colleges of Technology.

Taken together—the declining number of high school graduates, the growing popularity of the community colleges, and the decrease in admission selectivity at regional four-year institutions—the Colleges of Technology became less viable in what became a very competitive higher education marketplace.

In December 1995, the State University of New York Board of Trustees responded to a call from the New York State Legislature requesting a “multi-year, comprehensive, systemwide plan to increase cost efficiency in the continuing pursuit of the highest quality and broadest possible access consistent with the state university mission.” The Board of Trustees, in its plan entitled Rethinking SUNY, reaffirmed the legislatively-articulated mission of the university and made far-reaching recommendations, which included empowering the campuses to more directly manage more of their academic and financial affairs and to eliminate disincentives to the prudent use of campus and system resources (SUNY 1995). Rethinking SUNY also called for the formation of a series of strategic alliances that could bring new strength and efficiency to SUNY campuses, mentioning specifically a potential alliance of the upstate Colleges of Technology.

In response to Rethinking SUNY and the enrollment decline of the early 1990s within the Colleges of Technology sector, a strategic alliance was developed in 1996 between the five upstate State University of New York University Colleges of Technology (UCT) campuses to develop a more focused niche in the New York State higher education community. Member institutions included Alfred State College, the College of Technology at Canton, the College of Agriculture and Technology at Cobleskill, the College of Technology at Delhi and the College of Agriculture and Technology at Morrisville.

The top priorities of the UCT colleges were to:

- obtain approval to offer specialized bachelor’s degrees in disciplines appropriate to each individual college’s mission;
- to develop technology infrastructure to support academic and administrative sharing in such areas as administrative and academic computing, distance learning video services, library services, and telecommunications; and
- to increase enrollment from 12,000 to 15,000 by 2001 (SUNY 1996).

A five-year action plan was developed to achieve these objectives, and 23 work teams were established to implement the plan.

Each team had a campus president for a sponsor and supported a general outcome in one of the five focus areas: academic initiatives, administrative efficiencies, enrollment development, resource development, and technology infrastructure.

An organizational structure was developed in 1996 to implement the Action Plan. The UCT presidents and the SUNY liaison formed an executive team to oversee joint activities. In 1999, an executive director was hired to improve administrative efficiency of UCT activities and to improve advocacy within Albany, in SUNY, and with statewide business and industry.

The 1996 Action Plan called for students to be attracted to a “dynamic, focused Alliance of forward-looking colleges.” The primary outcome anticipated included an increase of student enrollment from 12,000 to 15,000 by 2001. In addition, it was expected that the UCT would develop a high-quality reputation, analyze current markets and conduct market research, determine how to reach current markets more effectively, develop new markets for existing programs, market new educational offerings to new and existing markets, and develop appropriate media (SUNY 1996).

The authors of the Action Plan wrote:

Making aggressive enrollment targets will not happen by chance. We must ensure that the Alliance attracts the highest possible percentage of the available student populations to our campuses to achieve this goal. We plan to develop, match, and market the educational opportunities we deliver, to the needs of students and aggressively target them (SUNY 1996, Appendix C, p. 1).

The major challenge for the UCT was to create a distinctive educational image in the college and university marketplace so as to attract increased numbers of students to the five UCT campuses. The authors of the Action Plan conceptualized this distinctiveness as having a focus on educational technology, teaching excellence, and residential life.

Market Research

Before embarking on the development of an aggressive marketing plan, the UCT Marketing and Enrollment Team conducted three research studies.

A traditional market research study was conducted for the UCT in 1997 (Stamats Communications 1997b). Five distinct populations were surveyed including current students, parents of prospective students, prospective students, guidance counselors, and business leaders. In addition to conducting telephone and written surveys of college-bound seniors, current students, and school counselors, the market research firm made site visits to New York to conduct focus groups with each of these constituencies.
The primary focus of the research was to ascertain reasons for choosing a uct campus, the most useful methods of communications, parent and school counselor involvement in the college search, sources of information, and topics prospective students like to hear about.

Another marketing study was conducted in 1997, which focused on students who applied but did not matriculate at one of the colleges (Stamats Communications 1997a). This study was conducted using a telephone survey. The primary focus of the research was to learn the reasons why students who applied did not choose a uct campus. Questions included type of college planned to attend, key influencer in the college choice process, factors important in the college choice decision, key information sources, most useful method of communications, campus visitation, and other factors cited for not choosing one of the colleges.

The third market research study, also conducted in 1997, focused on the geodemographic characteristics of the students attending the uct colleges (Carnegie Market Research 1997). Enrollment data from each of the five uct campuses were gathered and profiled across an established set of geodemographic clusters, each of which characterizes a discrete segment of the United States population. The number and percentage of students at each institution in each cluster were reported and charted to illustrate each institution’s geodemographic profile. The geodemographic clusters were collapsed into six target groups based on the profiles of the enrollment variables. The target groups segment the uct institutions’ current and prospective students according to socioeconomic characteristics. This research gave direction to the uct’s efforts to prioritize recruitment efforts, streamline recruitment travel, create targeted messages and mailings, and identify new, high-potential markets. These research studies guided the development of joint marketing and student recruitment activities and assisted the uct Marketing and Enrollment team with addressing its marketing challenge.

### Joint Marketing and Student Recruitment Activities

Joint activities sponsored by the uct Marketing and Enrollment Team between 1996 and 2001 fall into the following categories:

- **Advertising:** The team sponsored both image and recruitment-oriented advertising. A media campaign (television and radio) ran between 1996–98, focused on increasing awareness of the uct. The team purchased print and electronic advertising in a variety of admissions advertising magazines, guidebooks, regional college fair publications, and Web sites. The team also underwrote individual campus participation in CollegeView.

- **Direct Mail:** The team sponsored an annual spring–time out-of-state junior direct mail effort, as well as a guidance mailing of the annual viewbook.

- **Friend Raising:** Friend-raising activities included staffing joint booths at appropriate conferences (i.e., NY State Technology Teachers, NY State Tech Prep Teachers, NY State Agricultural Society) and at the annual SUNY Day event in Albany.

- **Personal Recruitment:** The team employed regional recruiters in the out-of-state and New York City markets.

- **Office Operations:** The team set up a central office to manage administrative duties relative to supporting the uct joint marketing effort. Activities included maintaining the uct Web site, organizing recruitment events, sending viewbooks to prospective students, routing inquiries to the campuses for institutional follow-up, and conducting uct-focused institutional research.

- **Publications:** Several publications were developed by the uct, including an in-state and out-of-state first-contact brochure, newsletter, recruitment poster, viewbook, and a limited number of academic program brochures.

- **Web:** A Web page was established in 1997. Its primary focus was to refer students to the most appropriate college Web page.

At the uct Marketing and Enrollment Team meeting in January 2000, the team revised its marketing objectives to include:

- Open new markets,
- Continue recruitment activities that are cost-effective,
- Improve recruitment effectiveness in established markets, and
- Support change of image in established markets.

All joint marketing activities were designed to meet one or more of these outcomes.

### Evaluation

The methodology used to evaluate the effectiveness of the uct joint marketing activities included a quantitative review of the impact on new student enrollment, a recruitment yield analysis for each joint marketing activity, and a qualitative perception analysis.

### NEW STUDENT ENROLLMENT IMPACT


Each of the colleges experienced overall enrollment increases in the new student population during the 1996–2001 period. Freshman enrollment at the individual campuses varied in terms of enrollment growth. Three of the five campuses experienced an increase of between 17 and 24.8 percent of their freshman enrollment. One college experienced a modest increase of less than 1 percent. Another campus experienced a slight decline of less than 1 percent.

The uct joint marketing campaign focused mostly on increasing full-time freshmen on the individual campuses. As a result of this, the total numbers of freshmen enrolled increased on all but one of the campuses and the overall freshmen enrollment growth was strong. It can therefore be concluded that the uct joint marketing campaign had a positive impact on full-time freshman enrollment within the uct sector.
RECRUITMENT YIELD ANALYSIS

Aggregate recruitment data suggest that total inquiries from UCT sources grew from 13,817 in 1998 to 39,531 in 2001. Applications generated from UCT sources grew from 526 in 1998 to 1,113 in 2001. Enrollments attributed to UCT sources increased from 107 in 1998 to 362 in 2001. Application to enrollment yield varied over this period from a low of 24.7 percent in 1999 to a high of 32.8 percent in 1998 for an average yield of 29.37 percent. Table 1 displays UCT aggregate primary recruitment source data for the 1998–2001 period. Table 2 displays inquiry to applicant and applicant to enrolled yield data for each major recruitment source.

Highlights include:

- **Advertising**: The average inquiry to applicant yield for advertising was 3.27 percent and the applicant to enrolled yield was 33.03 percent. Advertising represented an average of 21.8 percent of the aggregate UCT inquiries.
- **Direct mail**: The average inquiry to applicant yield for direct mail was 1.31 percent and the applicant to enrolled yield was 24.39 percent. The average response rate was 2.6 percent. Direct mail represented an average of 15.75 percent of the aggregate UCT inquiries.
- **Other sources**: The average inquiry to applicant yield for other sources (sources other than advertising, direct mail, personal recruitment, and student-initiated sources) was 1.98 percent and the applicant to enrolled yield was 39.42 percent. Other sources represented an average of 9.33 percent of the aggregate UCT inquiries.
- **Personal recruitment**: The average inquiry to applicant yield for personal recruitment was 2.32 percent and the applicant to enrolled yield was 20.32 percent. Personal recruitment sources represented an average of 20.08 percent of the aggregate UCT inquiries.

- **Student-initiated sources**: The average inquiry to applicant yield for student-initiated sources was 1.88 percent and the applicant to enrolled yield was 0.00 percent. Student-initiated sources represented an average of 1.1 percent of the aggregate UCT inquiries.

Assessment of the outcomes of all joint recruitment activities was not conducted due to a lack of data. The areas where no assessment was offered include friend raising, the Web page, and office operations.

The recruitment yield analysis suggests that advertising, direct mail, and personal recruitment were reasonably effective in generating applications. A wide array of miscellaneous sources was also credited with success in generating applications. Advertising and personal recruitment produced the best inquiry generation results. It also suggests that student-initiated sources were ineffective in terms of generating either inquiries or applications.

PERCEPTION ANALYSIS

A survey, designed to collect opinion data from each of the current or former members of the UCT Marketing and Enrollment Team, was administered in 2002. Team members were asked to rate the overall effectiveness of each joint marketing activity category in terms of its institutional enrollment impact on freshmen enrollment and how the joint marketing activities compared to similar activities conducted at the campus level.

More than half of the survey respondents indicated that advertising, personal recruitment (Joint New York City recruiter), and publications were effective or very effective in terms of impacting freshman enrollment on their campus. Direct mail, friend-raising, personal recruitment (out-of-state recruiter), and the Web page were found to be not very effective in enrolling freshmen on their campus.
When compared with similar recruitment activities at the institutional level, most respondents indicated that the following activities “dollar for dollar” were more effective at their institution: advertising, direct mail, friend raising, office operations, publications, and Web page. Out-of-state personal recruitment was found to be as effective but not more effective. The New York City personal recruitment effort was found to be more effective at the joint recruitment level.

Team members support the notion that joint marketing activities are most effective when they are conducted in “at the margin” areas. These are activities that become cost-effective when done using joint recruitment activities, but are cost prohibitive when done at the institutional level. Activities that are more effective, especially those conducted within the primary market, should be left to the individual institution’s marketing activities.

**Recommendations**

The joint marketing and student recruitment experience of the UCT institutions over the 1996–2001 period suggests that joint recruitment activities play a useful though limited role in assisting individual institutions in reaching their enrollment goals. Joint recruitment activities appear to be most effective in “at the margin activities.” These are strategies that would not be cost effective at the individual institutional level but produce an acceptable outcome across two or more institutions. It is recommended that institutions of similar type and mission consider conducting joint market research and recruitment activities in the following areas: advertising, friend raising, personal recruitment, publications and Web. It is also recommended that a thorough analysis be conducted prior to engaging in joint activities to ensure that the joint message and the medium are consistent with institutional and group enrollment targets.

**References**


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The growth of the World Wide Web (Web) is well documented, and in recent years its impact on higher education has received increased attention (Poock 2001; Stoner 1998). Many of the studies that have addressed this impact tended to focus on undergraduate admissions, specifically processing data, modes of communication, and characteristics of users (Cavanaugh, Martin, and Cover 1996; Hossler 1998; Perry, Perry, and Hosack-Curlin 1998). Clearly lacking, however, were studies that addressed the needs of users of the Web. In the Summer 2001 edition of College & University, the authors examined how college-bound high school students perceive college and university Web pages (Poock and Lefond 2001). In that study the elements of Web pages that engage and inhibit student browsing were examined, as well as the elements that increase the likelihood that the prospects will submit an application.

This present study is a follow up to this earlier research, as the authors examine how graduate students perceive graduate school Web sites at a variety of universities. Toward this end, four research questions (RQs) related to graduate school Web pages are addressed: What characteristics comprise an effective Web site? What information do prospective students seek on a graduate school Web site? What elements enhance and inhibit the appearance and navigability of the Web site? What is the impact of time to locate desired information?

**Background**

In 1997, Day noted that although the Web was exploding in size and scope, it received little empirical attention from academic researchers. Day was joined by others (e.g., Abels, White, and Hahn 1997; Head 1997) in noting that, specifically, little attention was given to the needs of the consumer when creating university Web pages. That is, while the Web was being used to recruit students, little attention was given to the perception of the Web by prospective students. In subsequent studies that did address recruiting students, this group was often defined (explicitly or implicitly) as undergraduate students (Abrahamson 2000; Middleton, McConnell, and Davidson 1999; Stoner 1998, 2001).

Recently, however, the focus on the Web in recruiting graduate students has received increased attention. For example, Hans (2001) studied the perception of family science department Web sites at four universities by 31 graduate students. When rating the appearance of Web pages, respondents rated the following items highest: user friendliness, content, graphics/images, and color scheme. When examining content specifically, items rated highest were description of program, list of courses offered, minimum requirements for acceptance, financial aid/scholarship information, and an online application.

Using a population of graduate students from across disciplines at a single university, Hoeflich (2002) measured the importance of a variety of sources of information in the program selection process. Using a Likert scale similar to this present study, Hoeflich found that 70 percent of the respondents rated the Web as important or very important in their selection process. This source of information was rated higher than all others, including contact with faculty members (57 percent), department literature (48 percent), and graduate school fairs (6 percent).

Given the importance of the Web in attracting graduate students, it is clear that effective and useful content and organization of the sites should be of great interest to universities. Universities have a variety of Web sites, including those maintained by academic departments and those maintained by central graduate schools. Clearly lacking, however, is an understanding

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**Abstract**

This study further investigates the use of the Web in college admissions. Utilizing a series of focus groups, the authors address the recruitment of potential graduate students by focusing on characteristics of effective graduate school Web sites. This study concludes with recommendations and practical advice for graduate school administrators.
of how prospective graduate students view these sites. This present study focuses specifically on the Web pages of graduate schools, as these academic units provide all (or most) of the information on graduate education at universities. Toward that end, this study examines the characteristics that comprise an effective graduate school Web site, the information prospective students seek when visiting such a Web site, the elements that enhance and inhibit the appearance and navigability of the site, and the impact of time in locating desired information.

Methodology
Participants in this study were graduate students at a major research university in the southeastern United States. A total of 36 graduate students participated in this study. Most participants were full-time, first-year students, 60 percent were in master’s programs, 40 percent in doctoral programs, 52 percent were female, and 25 percent were non-White. Convenience samples were used, and students participated in exchange for a modest culinary reward. All data were collected in Fall 2001.

This study used both quantitative and qualitative methodologies. Each participant completed a survey that first addressed demographic information then asked the participant to rate the importance of various Web site characteristics. The survey employed a five-point Likert scale and format suggested by both Fink (1995) and Fowler (1995). The rating scale on the importance of the characteristics ranged from 5 = very important to 1 = very unimportant. The final section of the survey asked participants to list the information they sought when applying to graduate school.

Data were also collected by focus groups, using a variation of a procedure recommended by Krueger (1994). These focus groups were conducted in a university computer lab, where each participant used a Dell 8100 with Intel IV processor, 1.3 gigahertz, and an Ethernet connection at 10 megabits per second. Each participant was online examining graduate school Web pages that were preselected, and was asked to provide his/her opinions on several topics. First, participants were collectively asked to view graduate school home pages from a specific public university and offer their opinions regarding content it provided, site architecture, use of graphics, aesthetics, and overall appearance. This was then repeated with the graduate school Web pages from three other public universities.

Second, the participants were asked to return to the graduate school Web site from the first university they visited. From the common starting point of that graduate school’s homepage, participants were given five unstructured minutes and asked to randomly surf the Web pages for information they sought when selecting a graduate program in which to apply. Participants then shared their opinions as to ease of navigation, graphics and images, content, and site architecture. This was then repeated with the Web pages of the remaining three universities.

Finally, the participants were given specific tasks that were timed. Returning to the graduate school homepage of the first university, approximately one-third of the focus group participants were asked to find if the school offered a master’s degree in public administration, the next third were asked to find the e-mail address for the chair of the department of history, and the final third were asked to find the cost (tuition and fees) for a full-time, in-state student. When each participant completed the task, he/she raised his/her hand and the time it took to achieve this end was recorded. Due to time constraints, each focus group completed this task for the graduate school Web page at only one university.

Results
RQ1: What characteristics comprise an effective graduate school Web site?

Of the characteristics of Web pages that the participants rated, content (“Does the Web site have the information you desire?”) is clearly the most important. As Table 1 indicates, 100 percent of the participants rated content as important or very important. Almost as important are organization of the Web site (“Is the navigation logical? Can you find information easily?”), having the homepage organized by functional areas (e.g., “admissions,” “academics,” etc.), download speed, and easy access to the online application and instructions. Each of these characteristics is rated important or very important by at least 90 percent of the respondents.

Conversely, distinctiveness of the Web site (“site is different than other university sites”) and a major emphasis on graphics (“graphics are innovative and dynamic”) are not viewed as important. Indeed, 75 percent and 72 percent of the participants rated these characteristics as very unimportant or unimportant, respectively. Moreover, 84 percent of the respondents indicated that a minor emphasis on graphics is important or very important.

Table 1: Importance of Graduate School Web Site Characteristics

<table>
<thead>
<tr>
<th>Web Site Characteristic</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>very unimportant % (n)</td>
</tr>
<tr>
<td>content</td>
<td>0 (0)</td>
</tr>
<tr>
<td>organization</td>
<td>3 (1)</td>
</tr>
<tr>
<td>friendliness</td>
<td>0 (0)</td>
</tr>
<tr>
<td>major use of graphics</td>
<td>19 (7)</td>
</tr>
<tr>
<td>minor use of graphics</td>
<td>0 (0)</td>
</tr>
<tr>
<td>distinctiveness</td>
<td>17 (6)</td>
</tr>
<tr>
<td>homepage organized by functional area</td>
<td>0 (0)</td>
</tr>
<tr>
<td>homepage organized by target populations</td>
<td>0 (0)</td>
</tr>
<tr>
<td>easy access to application</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>
RQ2: WHAT INFORMATION DO PROSPECTIVE STUDENTS SEEK ON GRADUATE SCHOOL WEB SITES?

When asked what information they sought when applying to graduate programs, information relating to the application process is clearly important. As Table 2 indicates, application criteria, access to an application, financial aid benefits, and a description of programs and courses offered are among the most desired information. Also important are information on the research interests of professors and information on how to contact the faculty. Conversely, information on the university as a whole is given very little weight. This includes campus transportation, campus activities, campus map, etc. Inconsistent with earlier findings, however, is that the rankings/reputation of the graduate school and program is given very little weight. Only 3 (8 percent) of participants indicate that they sought information on the reputation of the graduate school.

RQ3: WHAT ELEMENTS ENHANCE AND INHIBIT THE APPEARANCE AND NAVIGABILITY OF A GRADUATE SCHOOL WEB SITE?

■ Appearance. There are a number of comments related to the appearance of the Web sites of the graduate schools. The most common (and perhaps most passionate) responses indicated that a simple, clean, elegant look is far more important than a dynamic, colorful, "MTV-like" appearance. Indeed, participants appear to equate elegance with academic quality. Equally important is that the homepage appear visually intuitive. That is, it should require very little effort on the part of students to understand what is being offered. One participant used the analogy of a resumé, where the burden falls on the owner to ensure that the reader can clearly understand the format and content with little effort.

Most of the homepages utilize drop-down boxes and rollovers. The participants found these quite useful, but it is not immediately apparent that the links utilize these features. Indeed, the cursor needs to be directly above the link for a drop-down box or rollover to appear. In one case the rollover covered the screen, which the participants found quite annoying. Overall, the participants stated that clear indication that a link has a drop-down box or rollover is useful, but these tools should not inhibit browsing.

All the homepages examined in this study use pictures. These appear to be only moderately important, but when utilized, the participants felt that pictures of the campus are more important than pictures of people. Additionally, pictures with no explanation are somewhat frustrating. The authors heard several comments such as “It’s a nice picture, but a picture of what?”! Similarly, there are a few aspects of the homepages that suggest to the participants that the intended audience is undergraduates. These include the use of pictures of a mascot and pictures of students who are young and thus appear to be undergraduates. Given that the homepages are for graduate schools, the participants felt as though greater attention should be given to these pictures to better reflect an older graduate student audience.

■ Navigability. Participants made several comments related to navigating the site after surfing the Web pages. Several participants noted that some graduate school homepages are very difficult to locate from the institutions’ main homepages, requiring them to drill down more than three levels. Three levels appears to be the point at which the participants become frustrated in their search. If they can not find the information they seek is three “clicks,” they indicated an increased likelihood to give up their search.

The participants also found that the most effective Web sites contain a great deal of information on each page, with a fewer number of total pages on the site. Even requiring the participants to scroll down to view all the information on the page is preferable to less information that requires linking to a different page. One of the greater frustrations that the participants expressed is drilling down several levels only to find that the information they seek is not there, yet there is no link back to the graduate school’s homepage. This requires hitting the “back” button numerous times. Not only were the participants frustrated over drilling down for naught, they were also required to reverse that process!

Finally, participants indicated that it is important for a homepage to look like a homepage. While this is somewhat related to appearance, it also gave them the visual navigational cue that they were at a clear starting point in their search for information. Participants expect a homepage to look like a homepage and not a resumé or a publication. This requires hitting the “back” button numerous times. Not only were the participants frustrated over drilling down for naught, they were also required to reverse that process!

<table>
<thead>
<tr>
<th>Table 2: Information Sought When Searching for a Prospective Graduate Program*</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>application criteria, deadlines, procedures</td>
<td>26</td>
</tr>
<tr>
<td>faculty bios/research interests</td>
<td>21</td>
</tr>
<tr>
<td>financial aid/benefit for TAs/RAs</td>
<td>18</td>
</tr>
<tr>
<td>description of programs/required courses</td>
<td>18</td>
</tr>
<tr>
<td>access to application</td>
<td>16</td>
</tr>
<tr>
<td>contact information for department/faculty</td>
<td>13</td>
</tr>
<tr>
<td>courses offered and descriptions</td>
<td>12</td>
</tr>
<tr>
<td>degrees/programs offered</td>
<td>11</td>
</tr>
<tr>
<td>tuition, fees, cost of living</td>
<td>8</td>
</tr>
<tr>
<td>city/surrounding area</td>
<td>8</td>
</tr>
<tr>
<td>on and off campus housing</td>
<td>5</td>
</tr>
<tr>
<td>length of time to graduate</td>
<td>4</td>
</tr>
<tr>
<td>contact information for admissions/financial aid</td>
<td>4</td>
</tr>
<tr>
<td>campus information</td>
<td>3</td>
</tr>
<tr>
<td>university mission/history</td>
<td>3</td>
</tr>
<tr>
<td>campus map</td>
<td>3</td>
</tr>
<tr>
<td>placement of graduates</td>
<td>3</td>
</tr>
<tr>
<td>demographics of grad students by dept</td>
<td>3</td>
</tr>
<tr>
<td>grad school and program rankings/reputation</td>
<td>3</td>
</tr>
</tbody>
</table>

*Listed are those items identified by three or more participants.
RQ4: WHAT IS THE IMPACT OF TIME TO LOCATE DESIRED INFORMATION?

The time it took participants to locate information varied greatly among the universities. In determining if the university offers a master's degree in public administration, lists the e-mail address for the chair of the Department of History, and posts the cost of attendance for a full-time in-state graduate student, participants averaged 1 minute and 40 seconds on the Web site of one university. For the other universities the participants averaged 2 minutes and 13 seconds, and 3 minutes and 57 seconds. Connection speed is not an issue, as the computers utilized had very rapid connections. The delay was clearly the organization of the Web sites (and/or the skill of the users). Related to the navigability of the sites and the number of levels the participants needed to drill down, many of the participants indicated that due to the amount of time they spent searching for their desired information, they would have quit their search long before they actually found the information had they not been in a focus group with a timed exercise. Additionally, most of the participants indicated a feeling of dismay that such commonly sought information can be so difficult to locate. One participant even questioned if those who designed the graduate school Web pages had bothered to solicit input from graduate students.

Discussion

It is not surprising that content is seen by many as the most important element on a Web page. Determining what is the more important content, however, is a bit more elusive and may vary by target audience. For prospective students, graduate school Web pages should include information directly related to describing programs and faculty, how to apply, and RA/TA benefits as well as how much attending will cost. These are major points of interest and represent minimum levels of information for prospects.

Knowing what information to include in the Web pages is obviously only part of the concern for establishing effective sites. The organization, architecture, and aesthetics of the site are also critically important. There may never have been a better case for the axiom, “less is more.” Busy, crowded Web pages simply put a greater burden on the user to make sense of the information. Graduate students are clearly not seeking entertainment; this population is seeking information. Perhaps the clearest point to emanate from this study is this: When designing Web pages for prospective students, make sure major, relevant information noted above is easy to find in a format that is visually intuitive.

Clearly, “visually intuitive” is a subjective concept. However, it is known from this study that key elements include information provided by functional areas, such as “admissions,” “academics,” and “funding.” This provides the framework for organizing the content of the site. Additionally, providing the users access to the information within these functional links by way of drop-down boxes and rollovers is helpful. However, the manner in which these tools are organized is important. Rollovers need to be broad enough so that this tool works when the cursor is close to—but not exactly over—the link. Yet, these and drop-down boxes should not obscure the view of other key elements of the Web page. Prior to committing to a functional link, users should be able to see the content within the links while still being able to see the remaining content on the page.

Dynamic and changing pictures and images are not useful for this audience. Rather, a simple and elegant look is far more influential. Again, “elegant” is something of a subjective concept, but for this audience this entails the links being visually organized with clean lines (i.e., the links are justified and do not snake along the page), and the colors are limited to just a few, key colors, such as black, white, and the color of the school. Additionally, a picture of the university campus is generally welcome, but in a size that does not dominate the screen or obscure the links on the page. A picture of a stereotypical campus (old brick buildings, ivy covered walls, etc.) is more influential than pictures of people.

Related to the content and organization of the Web page is the time it takes the users to find information. Well-organized Web pages with relevant content result in the user expending less time and effort searching for information. It appears the true test of an effective Web page is the time it takes the user to find the information he or she desires. While this may be a bit tautological, less obvious is that users clearly stop searching if they become frustrated. More significant, however, is that the length of time for users to get frustrated is frighteningly brief. Evidence suggests that if users cannot locate the information they are seeking within three clicks or in less than two minutes, they entertain the notion of giving up their search. This clearly underscores the importance of content and navigability, as few things are worse for those who rely on Web pages for recruiting students than having the users seek out the graduate school homepage only to abandon their search efforts due to an inability to locate information in a relatively short period of time.

Recommendations for Future Research

While this study addressed important elements in the characteristics and design of graduate school Web pages from the view of prospective students, there are clearly other constituents that utilize these sites. The views and needs of current students, alumni and friends, and faculty and staff should be understood and addressed to best meet their needs. Additionally, since multiple constituents access the graduate school homepage prior to selecting their link of interest, it would be useful to understand the best design of a homepage so as to meet the needs of all these users.

Prospective graduate students access information from a variety of sites at a university, including those maintained by the graduate school and those maintained by academic departments. Since departments also rely on Web sites to attract students, it would benefit these units to understand if the expectations of graduate students identified in this study transfer to departmental Web sites. That is, do prospective students desire other information of department Web sites, or in other formats, than those offered by graduate schools?
Finally, further research is needed to better understand the views of other graduate students. The participants in this study were full-time graduate students who attend a premier research institution. Ironically, it may be the institutions of lesser reputation that have a greater need to understand their target audience. Administrators at such institutions may be more likely to struggle over enrollment goals and thus have a greater need to attract graduate students, both full-time and part-time. This may be achieved by expanding this study to include a broader range of graduate students.

Limitations

There are several factors that limit the generalizability of the results in this study. First, the sample size was fairly small. Focus groups by design need to remain fairly small for maximum effectiveness, but at the cost of a great representation of student views. Second, the focus groups were created using self-selected convenience samples. Both self-selectivity and convenience samples limit the generalizability of these results. Third, the timed tasks in this study were unavoidably curtailed. The focus groups lasted longer than expected and the time allotted for the number of timed tasks was reduced, thus resulting in only a limited number of tests. Clearly, a larger number of timed tasks would have provided greater insight into the fourth research question. Finally, this study focused on just one of many constituents of graduate school Web pages. The needs of current students, alumni and friends, and faculty and staff may have some bearing on the design and content of a graduate school’s Web site.

Conclusion

The World Wide Web has seen tremendous growth in the past several years, and the academic press has addressed this related to higher education. Yet, only in the past few years have researchers given attention to the perception of the users of college and university Web sites, and in many of these studies the focus was on undergraduate students. Recently, however, studies have begun to address the perception of Web pages by graduate students in their program choice process.

This study examined the graduate school Web pages of four public research universities in the United States. Using surveys and focus groups, the findings highlight the various characteristics of effective graduate school Web sites. This information should be vitally important to graduate school administrators who seek to enhance their recruitment of graduate students.

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AMERICAN ASSOCIATION OF COLLEGIATE REGISTRARS AND ADMISSIONS OFFICERS
The Past, Present, and Future of the SAT: Implications for College Admissions

John W. Young

A new version of the SAT is scheduled to be administered for the first time in March of 2005. What will the new test look like and what are the implications for college admissions? This article details the history of the SAT as well as the significance of the proposed changes.

Abstract

In a speech at the American Council on Education's Annual Meeting in February 2001, Richard Atkinson, President of the University of California system, asked the University's Academic Senate to consider changing the test score requirements for admissions. President Atkinson proposed to make SAT-I scores optional and to consider using either an expanded set of SAT-II tests or other curriculum-based tests when making admissions decisions (Atkinson 2001). As a result of this recommendation, in June 2002, the College Board announced a major revision to the SAT-I to become effective with the March 2005 administration of the exam. Although the University of California has yet to alter its admissions requirements, further deliberation and action is all but certain. Given the significant planned changes to the SAT, it would be useful to examine the history of this testing program. This can provide a useful roadmap to where the SAT is headed and to what other possible changes might occur in the future. In addition, because much is already known about the format of the revised SAT-I for 2005, the possible implications of the new test on the admissions process are delineated.

The Key Organizations

Throughout its history, the SAT has been linked to two organizations, the College Board and the Educational Testing Service (ETS). The College Board, formerly known as the College Entrance Examination Board (CEEB), is the national membership organization of more than 4,200 schools, colleges, and universities. Founded in 1900 and presently headquartered in New York City, the College Board owns the rights to the SAT, and makes policy decisions regarding the testing program on behalf of its member institutions. The original mission of the College Board was to facilitate communication between secondary schools and colleges and universities to ensure that the curricula in high school courses prepared students adequately for college-level work.

Educational Testing Service, headquartered outside of Princeton, New Jersey, was founded in 1947 and is the world’s largest non-profit testing and research company. ETS has over 3,000 employees and reported nearly $1 billion in revenues in its latest fiscal year. ETS was set up as an independent entity when the College Board recognized that the SAT (along with several other testing programs) became too large and complex for the College Board to handle on its own. ETS develops, validates, and scores the SAT for the College Board and has done so since the company’s inception.

Historical Background

In 1901, the first tests given by the College Board were administered to 973 students with essay exams in nine subjects. These students were applying to a small number of selective colleges, almost all of which were located in New York state. In the 1920s, influenced by the intelligence tests developed for the military in World War I, the philosophy behind admissions testing shifted. A new type of admissions test, later named the Scholastic Aptitude Test (now simply known as the SAT-I), advocated by then-Harvard President James Bryant Conant, was introduced to reduce the impact of family income and private schooling on students’ performance. Some of the academic psychologists, such as Carl Brigham, who developed the military intelligence tests, also worked on the SAT. It is because of these historical connections and influences that the SAT has long been considered to be a type of intelligence test. In 1926, the first SAT was given to 8,040 students. The test was composed mainly of multiple-choice questions and consisted of nine subtests, although only a single total score was reported.

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In the 1930s and 1940s, the SAT continued to evolve as mathematical items were eliminated so that the test, for a time, contained only verbal questions. In 1947, the College Board turned over the test development and score reporting of the SAT to the newly created ETS. In the first few decades of the SAT’s existence, the test was used almost exclusively by private colleges and universities. In 1956, the University System of Georgia became the first public university system to require the SAT for admissions. This became an influential decision as many other states soon followed with test score requirements for their public institutions. As the volume of SAT test-takers grew in the 1960s and 1970s, the number of yearly national administrations increased from the initial single annual testing session to six times annually. At present, there are seven administrations of the SAT per year, with each administration covering both days of the same weekend. The College Board Achievement Tests (now called the SAT-II exams) were required along with the SAT by many colleges until the 1960s. Currently, only about 100 highly selective institutions require one or more SAT-II scores for admission. Originally, SAT scores were not reported back to candidates, but only to their secondary schools and to the colleges of their choice. Furthermore, scores were reported as actual three-digit numbers; starting in the 1970s, scores were rounded to the nearest 10 points.

The last major revision of the SAT occurred in 1994 when several significant changes were made: the use of the Test of Standard Written English section (which was first introduced in 1977) was discontinued; the use of antonym items on the Verbal section (SAT-V) was discontinued; reading comprehension passages were lengthened; double passages (two reading passages on the same topic) were first introduced; the use of calculators for the Mathematical section (SAT-M) was allowed (although not required); and ten grid-in mathematical items (which required test-takers to fill in their responses rather than choose one of several options) replaced some multiple-choice items. In 1995, SAT scores were re-centered by using a more current and representative norming sample (Young 1995). The net effect of introducing a new score scale was to raise scores, on average, by approximately 75 points on SAT-V and 25 points on SAT-M when compared with scores before re-centering occurred. Presently, all SAT scores are reported on the new score scale. The current status of the SAT tests includes annual volumes of over 1.25 million test-takers for SAT-I (with over 2 million tests taken) and more than 250,000 examinees for SAT-II (which is now comprised of 22 tests). The tests can be taken in one of 3,000 centers worldwide including 500 locations in over 100 foreign countries across six continents.

The Revised SAT-I for March 2005

In June 2002, the College Board approved a new version of the SAT to be administered beginning in March 2005. The new version of the SAT represents the tenth major revision to the SAT since its inception. The major change to the test is the addition of a third section, called Writing, along with a new subscore (on the same 200 to 800 scale currently used for the other sections). Thus, the maximum score on the revised SAT-I will be 2400. To accommodate the new section, total testing time will be increased by 30 minutes to 3½ hours. In addition, the Verbal section will be renamed the Critical Reading section in order to more accurately reflect the increased emphasis on reading skills. For SAT-M, a third year of high school mathematics, intermediate algebra, will be required. Because of the increased expenses associated with the new test, examinees can expect to pay at least 50 percent more for each administration. The greater cost is primarily due to the scoring of essays on the new Writing section by trained readers. Additional details on the planned revisions for each section are further described below.

SAT-I: Writing

The Writing section will include an essay similar to ones that are currently used on SAT-II, which include writing, as well as multiple-choice items assessing writing skills such as editing, use of syntax, and word choice. It is anticipated that about 30 minutes will be allotted for the essay component. The essays will be holistically scored by trained readers (typically, high school and college English faculty) with each essay scored by two or more readers.

SAT-I: Critical Reading

In this section, analogy items will be eliminated so that this section will consist entirely of reading comprehension passages and items. As such, the number of reading passages will increase, and the length of the passages will vary from what is currently used. All of the material for the new reading passages will be more similar to that found in college-level texts and will require greater critical reading skills. For both this section and SAT-M, the current plan is to equate scores on each section to earlier versions of the SAT so that scores for these two sections can be compared over time.

SAT-I: Mathematical

Of the three sections in the revised SAT-I, the Mathematical section is the one that will remain most similar to the current version. The main change for SAT-M is the requirement of a third year of high school mathematics, which includes intermediate or second-year algebra. Some of the items will be more difficult than ones currently used since additional mathematical knowledge or skills will be required. At a serious disadvantage will be students who do not plan to take at least three years of high school mathematics or who have not done so by the time they take the test. In addition, on this section, the use of quantitative comparison items will be discontinued. These items are ones that require students to find or calculate two quantities and decide which of the two, if any, is larger.

Overall Impact of the Revised SAT-I

The proposed changes to the SAT-I will create a test that differs significantly from the current version. The new test will be more achievement-oriented so that a student’s performance will be more closely related to the quality of the high school courses that he or she has taken. With the new test, currently existing differences in students’ performance related to family income are unlikely to change, and may in fact widen. Also, the revised SAT-I, in terms of format and content, will become somewhat better
aligned with high school curricula across the country although the degree of congruence will not be as great as for state mandated tests (such as for high school graduation). With the introduction of the new Writing section, there will be greater pressure to teach writing skills at all grade levels. Although commercial coaching programs will certainly experience a greater demand for their services, it seems likely that these programs will continue to cause only marginal increases in students’ scores as the best evidence currently suggests (Briggs 2001).

Based on past research on similar tests, the revised SAT-I will likely benefit certain demographic groups while being detrimental to others. On other standardized tests that assess writing skills (including SAT-II: Writing), female test-takers typically score higher than males. One would expect to find similar results for SAT-I: Writing. With the addition of the writing section and the increased emphasis on critical reading skills, it is likely that the test as a whole will become more difficult for non-native speakers of English. With the added requirement of a third year of high school mathematics, it can be expected that male and Asian-American test-takers will continue to have higher scores on SAT-M since these two demographic groups already score better than their counterparts. Furthermore, earlier studies (Young and Fisler 2000) have shown that male high school students continue to take more years of mathematics and are more likely to take an advanced course (such as honors or advanced placement) in mathematics than female students.

**Implications for College Admissions**

The introduction of the revised SAT-I will have a number of important implications for the college admissions process. The most substantial change involves the introduction of the new third subscore for the Writing section. The inclusion of a new score represents a greater challenge to college admissions staff than has been the case with earlier revisions of the SAT since, in those instances, the meanings of the scores were essentially maintained. Whether an institution makes admissions decisions using a formulaic approach (such as at the author’s own university) or by a more holistic review process (as is the case at many selective private colleges), changes will have to be made in order to accommodate the new Writing score. As an indication of the difficulties that may arise when a new test score is introduced, one can examine the history of the Analytical score on the Graduate Record Examination (GRE), which was first reported in the late 1970s. Even today, there is no uniformity of agreement within or across institutions on how or even whether to use this score in graduate admissions decisions. For example, at the author’s university, a number of faculty admissions committees give some weight to the Analytical scores of applicants, while others ignore it entirely.

One possible strategy regarding SAT-I: Writing would be for institutions to use the score on an experimental basis for a year or two, perhaps for only a small random sample of applicants, and then evaluate its validity in the admissions process. Since most schools will not have any empirical evidence concerning the effectiveness of the Writing score, local validity studies are vital in order to determine the importance of this score relative to other information about applicants. Institutions that have obtained SAT-II: Writing scores of applicants in earlier years may be able to use this information to gauge the importance of the SAT-I: Writing score by conducting their own internal predictive validity studies. In all likelihood, the majority of institutions will find that, with the addition of the Writing score, the validity of SAT scores in predicting college grade point average (GPAA), the standard criterion in most studies, will increase. Part of the explanation for such a result is that since many college students are required to take a basic writing or composition course during their first year, the scores from SAT-I: Writing will correlate highly with grades from this course. It may also be possible for institutions to use SAT-I: Writing scores for course placement decisions as well as for admissions. A critical examination of the content of the test by English department faculty can help a college or university determine whether the scores from this section will provide sufficient information to place students in the appropriate level of courses.

The validity of the Critical Reading section in predicting GPAA will likely increase for most schools since the revised content of this section will more closely align with the kinds of assignments and tests that faculty typically use to assess students in college and to assign grades. In contrast, the predictive validity of the revised Mathematical section will increase for some students but decrease for others. Whether the predictive validity will go up or down will depend on whether the content of the new version is or is not more similar to the mathematical content of a student’s college courses. It is likely that for students who take several courses in the natural sciences and engineering, their SAT-M scores on the revised version will be more highly correlated with GPAA than would be true in the past. On the other hand, students who take courses with little or no mathematical content will have SAT-M scores that have a very low correlation with GPAA. Overall, the validity of SAT-M scores will probably remain at its current level at most institutions.

One important question regarding SAT-II scores is whether the use of these scores to substitute for or replace SAT-I scores, as President Atkinson suggested, would lead to dramatic changes in the demographic composition of students who are admitted to selective institutions. A simulation study by Bridgeman, Burton and Cline (2001), using data from ten highly selective universities (including four campuses of the University of California), found that using SAT-II scores to supplement or replace SAT-I scores led to minimal changes in the gender and racial composition of those students accepted. The only exception to this finding occurred if applicants included scores on one of the SAT-II foreign language tests as one of their scores. When this occurred, the percentage of Hispanic applicants accepted increased as their scores on either version of the SAT-II Spanish test were typically much higher than for other students.

**Future Possibilities**

Although the new version of the SAT-I for March 2005 represents a dramatic revision in the long history of this test, it is also the case that the College Board is contemplating other possible changes that might lead to an even better test. Some of the changes that are under consideration include:
- **The elimination of formula scoring** (currently scoring is based on a penalty for incorrect answers). Most tests use the simpler scoring method of number of correct responses, while the validity and reliability of scores under the two scoring systems are generally comparable.

- **The scoring of essays on the SAT-I: Writing section using natural language software.** Since scoring is the major expense of using essays, any technology that reduces labor costs will lead to less expensive tests. Other admissions tests are already using software as a substitute for one of the two essay readers, and the results have found the software to be as reliable as a trained human reader.

- **Transmitting SAT-I: Writing essays to institutions for use in admissions or placement purposes.** The College Board has suggested that institutions might consider using these essays for these reasons, but issues of costs and privacy have yet to be dealt with.

- **Implementing computerized adaptive testing (CAT) for the SAT.** CAT is certainly the most important technical development in standardized testing during the past two decades, since more accurate scores are obtained for all test-takers. Other admissions testing programs, including the GRE and the Graduate Management Admissions Test (GMAT), already use CAT operationally. A pilot CAT version of the SAT is already being used for students applying for certain specialized programs including those at the Institute for the Academic Advancement of Youth at Johns Hopkins University. It can be expected that the SAT will eventually be administered as a CAT-only version at some point in the future.

- **Assessing traits and abilities not currently measured by the SAT, which can potentially be useful as supplemental information in the admissions process.** To meet that goal, the College Board is funding research into the development of non-cognitive measures that might provide valid and reliable information about an applicant that differs from that obtained on the SAT. Two of the areas that are currently being investigated are measures of practical intelligence and of academic motivation.

In summary, the revised version of the SAT, being unveiled in March 2005, will be an improvement over the current edition as it will assess more of the important cognitive skills involved in college-level work. It represents a significant change in thinking, as the new version will be a more achievement-oriented test, which will make it more similar to other standardized tests currently taken by students. However, it is likely that this is not the end of the debate over whether the SAT should be a test that measures academic aptitude for college (as has been true through most of its long history) or should be a measure of school-based achievement. The upcoming version will be more achievement oriented than has been true in the past, but it is likely that the SAT will continue to evolve well into the foreseeable future.

**References**


Marketing Consortium-Based Online Courses to Nontraditional Students: A Centralized Call Center and Enrollment Counseling Service

Georgia GLOBE (Global Learning Online for Business and Education) was established by the Board of Regents of the University System of Georgia as a three year pilot project to aggregate and market online (distance education) courses and degree programs available through one of the System’s colleges and universities. Institutions were given the opportunity to list (voluntarily) online courses and programs with Georgia GLOBE.

One of the first programs to be marketed by Georgia GLOBE was the eCore™—electronic core curriculum. The eCore™ was targeted primarily to the adult (nontraditional) student market as a way to begin an undergraduate degree while maintaining an often busy lifestyle. As a part of the overall marketing plan for eCore™, Georgia GLOBE established a Customer Information Center (CIC), which included an enrollment counseling service (ECS).

The CIC/ECS model was designed to provide potential eCore™ students with prompt and efficient responses to general questions and to demystify the enrollment process. As the Georgia GLOBE project has now reached its conclusion, this article describes the marketing strategy developed to recruit potential enrollees to eCore™ and reflects on the experience of providing a centralized customer call center and pre-enrollment counseling for an online, consortium-based program.

Georgia GLOBE and the University System of Georgia

The University System of Georgia (USG) is comprised of 34 colleges and universities ranging from two-year colleges that serve rural areas (e.g., East Georgia College in Swainsboro, Ga.) to nationally acclaimed research institutions (e.g., the University of Georgia and the Georgia Institute of Technology) that offer a full array of undergraduate, graduate, and post-graduate programs and degrees.

The Board of Regents of the USG established Georgia GLOBE (Global Learning Online for Business and Education) in June 1999. In prior years the USG had undertaken a series of successful technology initiatives, some System-wide and some campus-based, and the Regents determined that the time was right to focus efforts in the use of technology, leveraging existing assets and experience, and to expand access via technology-based learning.

Toward that end, Georgia GLOBE serves as a marketing entity for USG online learning opportunities. The Georgia GLOBE Web site features searchable course catalogs that include a listing of online college-level courses, continuing education, and certification programs. Institutions submit their courses (voluntarily) to be publicized in the catalogs. Potential students may customize their catalog search by course title, description, instructional level, primary delivery method, or offering institution, and follow easy links to information on admissions, financial aid, and other services located at each institution. The catalogs provide a useful tool for prospective students to locate potential online offerings from USG institutions all in one convenient location.

Gina Papa was Web site/Call Center Manager for Georgia GLOBE, and was responsible for the day-to-day operational management of a Web-based and telephone call center and Web site promoting Georgia’s distance learning programs and courses. An inaugural graduate of the Integrative Studies program, Gina graduated from Clayton College & State University with a B.A. in International Business finishing her studies abroad in Spain. Gina currently serves as System Support Specialist with the Advanced Learning Technologies, Assessment, and Public Information (API) division.

Christopher Cameron is the former Vice President for Marketing and Communications at Georgia GLOBE. He currently serves as Associate Director of Athletics for Media Relations at Boston College. The Ashland, KY native is a graduate of the University of Kentucky.

Diane M. Chubb, M.S. is the former Director of Systems Integration and Services at Georgia GLOBE. In this capacity she developed and managed the pre-enrollment counseling service and other student services projects. Diane graduated from Georgia State University with a Master of Science in Allied Health Programs and Florida State University with a Bachelor of Science in Nutrition and Dietetics.
The eCore™, or electronic core curriculum, was one of the first online course suites to be marketed by Georgia GLOBE. It is a consortium-based offering consisting of freshman- and sophomore-level courses designed to meet core curriculum requirements within certain major programs of study. The primary target audience for eCore™ is nontraditional students who are either starting their college careers or re-entering college. Typically, these students must balance work and family responsibilities while completing their college education. Therefore, the convenience of online learning is highly attractive to this particular group.

The eCore™ serves as a model for collaboration in course design, faculty development, services, and instructional delivery. Courses are developed using a team approach that integrates faculty from various institutional sectors, instructional designers, Web programmers and project coordinators. Courses are designed with a consistent look and feel, and must meet standards for accessibility. This consistency in design facilitates a student’s movement from course to course throughout the eCore™ curriculum. All courses are hosted and maintained on a central WebCT server supported by the University System.

Student support services such as an online bookstore and enrollment management are provided through contractual agreements with System institutions.

Five institutions, called eCore™ affiliates, are authorized to offer eCore™ classes. Students must select one of the five institutions as their home; however, course enrollments may consist of students from all of the five eCore™ institutions. This structure creates the opportunity to improve efficiency by combining enrollments across multiple institutions. Students must meet the admissions standards as specified by the Board of Regents including policies pertaining to credit transfer, placement testing, and the like. Teaching faculty are full-time professors, recruited from institutions within the University System of Georgia. A flat-fee tuition rate of $100 per credit hour was established for all eCore™ classes. The University System Office of Advanced Learning Technologies (ALT) coordinates eCore™ course development and faculty training programs and provides administrative oversight for eCore™.

Table 1 lists the enrollments in eCore™ from Fall 2000 to Spring 2002. As this table depicts, overall enrollments have steadily increased since the inception of the program.

### Table 1

<table>
<thead>
<tr>
<th>Term</th>
<th>Enrollment</th>
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</thead>
<tbody>
<tr>
<td>Fall 2000</td>
<td>59</td>
</tr>
<tr>
<td>Spring 2001</td>
<td>237</td>
</tr>
<tr>
<td>Summer 2001</td>
<td>225</td>
</tr>
<tr>
<td>Fall 2001</td>
<td>330</td>
</tr>
<tr>
<td>Spring 2002</td>
<td>385</td>
</tr>
</tbody>
</table>

**Customer Information Center and Enrollment Counseling**

Customer call centers are used frequently in business to respond to customer requests and provide information pertaining to products and services. They are deemed critical in managing the customer services aspects of a business enterprise, particularly those based on sales revenue. A measure of business success can be based on how well it provides customer service to its audience(s). While many companies provide telephone customer support, the advent and expansion of the Web has enabled companies to provide prospective students the added convenience of 24/7 support through online interactions. Although much information can be provided in electronic format, there frequently is a desire for a “live” person for customer interaction. Having this “live” person available can often add a certain level of credibility, particularly for companies doing business over the Internet. This live connection may be especially important for those less familiar—and comfortable—with the Internet. Nontraditional learners may be especially susceptible to discomfort with current technology such as the Internet.

Given the unique challenges of eCore™ and the desire to be sensitive to the needs of nontraditional students, Georgia GLOBE implemented an integrated marketing plan for eCore™ which not only included more contemporary forms of advertising (e.g., television, direct email, and Internet search...
engine positioning), but also a Customer Information Center (cic) that operates similar to a business call center. The cic would serve as a central point of contact for prospective students interested in obtaining information regarding eCore™ and its associated enrollment processes. The primary goal of the center is to provide fast responses to requests for general information pertaining to eCore™ and enrollment procedures.

The call center operates on extended hours from 8:00 am–8:00 pm, Monday–Friday, Eastern Standard Time. The call center is managed by one full-time supervisor and has two part-time customer service representatives (csr) assigned to the operation. Prospective students can submit questions pertaining to eCore™ and other classes via a toll-free phone number or by using an e-mail form located on the Web site.

Once a customer reaches the cic via the toll-free number or Web inquiry form, the csr opens a “ticket” and collects basic demographic information for limited tracking of the potential learner. Inquiries are handled based on the nature and type of question submitted by the caller. Level I questions are typically requests for general information that is usually already published on the Web site. Customer Service Representatives respond to these requests within 24 business hours. Level II inquiries are requests for information pertaining to general enrollment policies and procedures. These requests are usually more complex and the response is dependent on the customer needs, previous educational background, and goals. Level II requests are logged by the csr at the call center and referred to an enrollment counselor for follow up.

The enrollment counselor identifies the needs of the prospective students and explains (in lay terms) general enrollment policies and procedures on behalf of all five partner institutions and refers questions pertaining to academic advisement to a campus eCore™ Advisor. The counselor serves as an “advocate” and “translator” to assist potential students by clarifying information, explaining options, and helping potential students to navigate the campus bureaucracy to obtain assistance. Likewise, if it becomes apparent through discussions with the prospective student that eCore™ does not meet his/her learning needs, the counselor assists in identifying other resources to guide the student in his/her research process. In this role, the counselor serves as a “neutral broker” of educational providers and information.

Figures 1 and 2 illustrate data collected by the call center on inquiries for the period covering October 2000 to December 2001. The volume of inquiries to the call center was directly proportional to advertising activities. During this period, a total of 3,320 inquiries were received, with an average inquirer age of 34.5 years. The majority of the prospective students elected to submit their questions or comments via the Web inquiry form. Further analysis of the data revealed that approximately 35 percent of prospective students had some college experience, but had not completed a degree.

Approximately 600 (20 percent) of all inquiries were referred to the enrollment counselor for follow-up. Of those estimated 600 inquiries handled by the enrollment counselor, only 5 percent, or 35 inquiries required institutional referrals. Almost all of these inquiries at the call center and enrollment counseling service met the 24 business-hour response time requirement. Thus the call center and enrollment counseling service were able to handle the vast majority of inquiries from prospective students in a prompt and efficient manner.
Lessons Learned

The last three years have provided Georgia Globe with the opportunity to keenly evaluate its overall marketing efforts for nontraditional students and the customer call center/enrollment counseling concept. The following are some lessons learned from this experience:

- Prospective students are often attracted to the convenience of online learning without a clear understanding of their career and educational goals. The counselor must be able to quickly assess the needs of learners and direct them to resources to assist them in their decision-making process. In our experience, inquiries can be subdivided into one of three distinct groups:
  - **Browsers**—Browsers are prospects who desire some form of postsecondary education. They are unsure, however, as to whether they would benefit from a certification course, an associate's degree, or a bachelor's degree. Typically these prospective students are drawn to online learning by the perception of convenience, with very little knowledge and understanding of career goals and objectives. They may be motivated by career advancement or a personal desire to pursue higher education. The customer call center typically becomes the first point of contact for browsers who realistically need career counseling before they should seek options for delivery methods. Therefore, the enrollment counselor must be able to discern the needs of these prospective students and direct them to the appropriate resources.
  - **Degree (Program) Specific**—These prospective students know the precise degree and major they want and they are specifically seeking online delivery. Their questions are very specific with regards to program costs, time to completion, on-campus class attendance requirements, and convenient services. Information tools such as an online searchable catalog can be a tremendous aid for these prospective students to find institutions that offer distance education and traditional degree programs. Since the University System of Georgia does not currently offer an undergraduate degree program online, the counselor plays a key role in helping customers identify other programs including referrals to other accredited out-of-state institutions.
  - **Course Specific (Cherry Pickers)**—Cherry Pickers are usually enrolled students (either traditional or nontraditional) seeking a specific online course to meet an immediate need. These students may be motivated by the need to complete a course for graduation requirements or the convenience factor (e.g., taking a math course online instead of early in the morning). The enrollment counselor can quickly assist these students in finding available courses and direct them to the appropriate contact at the offering institution.

- The CIC/ECS model provides a streamlined method for potential learners to obtain fast and efficient access to information about online learning opportunities and enrollment policies for consortium-based programs. This is particularly true in cases where varying institutional policies and practices exist.

- Browsers must be cultivated over a period of time in order to convert inquirers into matriculants. The CIC/ECS has the potential to increase enrollments through periodical follow-up and contacts with browsers.

- Although technology can be a powerful tool in disseminating information to prospective students, there are instances in which knowledgeable and trained professional must engage customers using synchronous means of communications (e.g., telephone, online chat, etc.) in order to effectively determine their needs and provide the most accurate information.

- A centralized marketing operation must be capable of tracking inquiries to determine conversion rates in order to evaluate the effectiveness of a marketing campaign in addition to building a sense of credibility among campus partners. This means enabling a Customer Relationship Management (CRM) system that is integrated with the campus student information system that allows for customer activities to be tracked from the initial point of inquiry at the call center to course enrollment at the institution.

- The enrollment counseling service must keep abreast of enrollment policy changes in order to convey accurate information to potential students. This means the enrollment counselor concept must be embraced by the entire enterprise and viewed as being vital to the recruitment of nontraditional students.

- Partner campuses must view the call center and enrollment counseling service as an extension of its marketing services rather than as a threat. Subsequently, it is incumbent upon organizations like Georgia Globe to foster a working relationship with campuses and view them as partners in developing an integrated marketing plan for nontraditional students.

- The skill and background of the counselor is critical to the success of the operation. The counselor must be an excellent communicator and highly knowledgeable in the areas of enrollment policies and practices, and career counseling. Additionally, this individual must be recognized as a highly respected peer among colleagues on the campuses.

- Clarifying brand identity remains a challenge. It is important that prospective students have a clear understanding between the roles of a marketing and information service, such as Georgia Globe, and the institution.

Summary

Officials in higher education seem to be realizing that a sound recruiting strategy aimed at attracting and retaining the best and brightest students requires far more than producing a flashy brochure to be handed out at a recruitment fair. The truly enlightened in the world of academia recognize that potential, current, and former students are prospective students and must be treated as such, in the same manner that any successful business would build and foster a relationship with its prospective clients.
Customer relationship management (CRM) is a concept foreign to many in the traditional worlds of academia and higher education. Further, the term may arouse skepticism, as it is tossed about all-too-frequently as a trendy buzzword *du jour*. But the business practices encompassed in a sound CRM strategy are nonetheless essential in obtaining and retaining prospective students.

The most successful marketing campaigns are built around brand identity and loyalty. Although those terms may sound foreign to college and university administrators, the concepts they define have, in fact, been important to higher education all along. In today’s competitive marketplace, however, consumers are savvier than ever. The traditional notion of “if we build it, they will come” is no longer good enough for college and universities. Competition for students is great, especially since the dawn of the Internet, which has placed countless pieces of information at the fingertips of prospective students.

A solid integrated marketing campaign, combining elements such as print, radio, television, Internet advertising and public relations, can prove effective in raising awareness of educational opportunities that exist for nontraditional students. Once awareness is raised and an inquiry is made, however, the CRM model must kick in. A trained enrollment counselor might provide a potential or current student valuable information about online or traditional courses, or a combination of both.

Equipped with the necessary knowledge and technology, the enrollment counseling service may be expanded to provide an even greater role to the student and to the university’s marketing officials through detailed tracking of the student. In addition to pinpointing the most effective advertising and marketing elements, such tracking provides the institution a better understanding of students’ needs so that those issues may addressed. Moreover, it arms the counselor with vital information necessary to assist learners with their educational endeavors through what could become a lifelong learning effort.

**References**


Seats Always Available.

Come see what AACRAO Online has to offer you...

Our ever-expanding Web site is filled with timely information and news for the growing community of registrars and admissions officers in the United States and around the world. Association members enjoy special benefits and exclusive access to AACRAO’s higher level resources and news. Here’s a small sampling of what content areas the site includes:

- AACRAO Transcript (An Online News Source)
- Jobs Online
- FERPA Online Guide
- Transfer Credit Practices Online
- Resource Center
- Publications Library
- Virtual Member Guide
- Foreign Credential Evaluation
- and much more...

Pull up a chair and give us a visit today at www.aacrao.org!
Online College Recruiting and Marketing—Web Promotion, Strategy, and Ethics
An Anatomy of Effective Internet Marketing and Search Engine Placement for College Admissions

After several years of using online recruiting techniques, researching Internet marketing, and consulting with companies regarding search engine ranking, we have made many observations about the evolution of the Internet as a tool for marketing to students and targeting enrollment for new admissions.

Search Engines
Prospective students should be easily able to locate your college/university on targeted search engines or directories. Consider these factors:

- **The Top Engines**: If you go to www.searchenginewatch.com you will find the Net Ratings, which will explain the market share of many search engines and directories, along with exposure and overlap between users. Also see Jupiter Media Metrix Ratings. Yahoo, MSN, AOL, Google, Infospace, WiseNut, Overture, and a few others have the widest appeal with regards to the online recruiting market. Over the past few years, the market share of the search engine and directory industry has been very dynamic.

- **Variables**: Items such as domain name, keyword-rich text, and meta tags in the HTML source code affect your college exposure dramatically. Search engines use different methods (Algorithms) of listing Web sites and ranking them when a term or word search is done for “colleges, ranking, or admissions.” Positive variables include: the name of your domain and if it is germane to the search terms, the title of the page, the meta tags that include your site description and keywords, the text and content of the page, image file names, alt tag text, and link popularity. As a note, the search engines and directories change the algorithms and ranking criteria from time to time. Some major engines use a partner to provide their search results, and the partner can also change periodically. Thus, the variables and algorithms are not static and require specialists, Webmasters, and college departments need to actively watch and innovate search engine ranking strategy.

- **Pay for Inclusion or Pay Per Performance Engines and Programs**: Yahoo and Overture have become increasingly important for Web site performance. Many search engines such as Looksmart (which provides results for MSN) and Overture (which sponsors results for Yahoo), have suddenly outranked Webmasters because the user has paid per click for the visitor and sponsored a listing on the first page of results.

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Richard Whiteside is the Vice President for Enrollment Management & Institutional Research at Tulane University. He has been at Tulane since July 1993. Before joining Tulane, Mr. Whiteside was on the staff of the University of Hartford for 14 years (Associate VP for Academic Administration), The Johns Hopkins University (6 years), the City University of New York, and Pace College (University). He speaks frequently on issues related to financial aid, enrollment management, tuition discounting, the educational environment, and the dynamics of change.

George Mentz is presently a full-time Visiting Assistant Professor of Legal Studies at Loyola University College of Business Administration in New Orleans, and is also listed as adjunct faculty for four other colleges and universities including online teaching appointments. Mr. Mentz is acting president of the Institute of Certified E-Commerce Consultants worldwide (www.icecc.com). Further, he is a licensed attorney, holds an earned doctorate in international law, and an MBA in International Business.

All companies and tradenames listed herein are the trademarks and intellectual property of the mentioned company, search engine, or directory.
Your College Domain Name and Web Address: A fair percentage of your Web visitors will locate your home page by simply typing the name of the college into the browser coupled with the “.edu” suffix. Domain names and marketing of your home page are addressed later in this article.

Exposure to High School Students and Potential Applicant Pool
The youth of today are much more inclined to use the Internet to research colleges and have been trained to use the Internet in grade school and high school. They will research and visit colleges from the comfort of their home or the library (Pastore 2002). In light of this, you may have a more informed candidate for admission.

Discussions with recent high school graduates reveal that many enjoy the degree of privacy in searching online and using online forms. There is less interaction with people using this method; they simply need to fill out the information online (Hartigan 2000).

Marketing the University Online: Benefits, Features, and Search Keywords
It is the job of the institution to integrate the information below with all Web pages related to the university Web site or admissions. However, there is a potential linguistics issue because students may be searching for “football” or “free tuition” when the university site uses traditional terms in their text and Web code such as “athletics” and “financial aid.” In sum, universities must target key buzzwords in the search engine that prospective students may use in seeking out a school to attend. (See Table 1.)

Hard Copy that Promotes Recruiting and Branding to Online Prospects
Most universities have facilitated a campaign to include their Web site or Web address with contact information on every piece of hard copy or e-mail that is sent from the institution. However, what is often overlooked is “what is the ease of recall” of the Web name. In essence, the producers of marketing copy may want to include a mirror domain that uses a supplemental name or a dot-com extension. According to Creative Village Creations, you should put your Web address or URL on everything—including brochures, licensed products, letterhead, and even university trucks.

Links and Link Popularity
Many search engines rank sites according to factors including the number of sites linking back your site. Some sites pick up all links; however, many search engines may simply observe hyperlinks to your college that are attached to text. People affiliated with the university should be asked to add a university link to their Web site as part of an ongoing business relationship.

Ranking and Recruitment
This is an interesting subset of admissions. Students are inclined to observe school ranking in their decision to attend a college or university. U.S. News, Business Week, Kiplinger, Peterson’s, and The Financial Times seem to have a temporary monopoly on this. It is important for colleges and universities to seek out all college ranking opportunities. Because there are more unofficial rankings out there than you can imagine, obscure college ranking information sites may overrank the U.S. News and Business Week sites on several search engines. Ranking is said to be unfair in many cases, but it is a great way to market your institution. Additionally, if you are ranked, you usually have your Web site link listed.

In addition, high school students tend to use ranking systems to locate a particular institution within a broad category of similar institutions with regards to quality or value for the cost. Many fewer students report using ranking systems in a true rank order sense, that is, concluding that institution number #1 on the list is really better than is institution #3 on the list. Rather, students make a determination of an institution’s quality by examining the group of institutions above and below the particular institution. In the student’s mind, an institution’s relative position on the continuum is determined by the company it keeps!

Ease of Use
Admissions sites have always had challenges in incorporating the necessary information to promote themselves and the university. On the main page of the admissions and recruiting site, you will want to illuminate benefits, accreditation, ranking or accolades,

<table>
<thead>
<tr>
<th>Table 1: List of Key Departments and Phrases</th>
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<tbody>
<tr>
<td>Accreditation</td>
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<td>IT computers and wireless capability</td>
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<tr>
<td>International appeal or accreditation</td>
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<tr>
<td>Cultural aspects of your locale and university</td>
</tr>
<tr>
<td>Extracurricular programs of interest to students</td>
</tr>
<tr>
<td>Degree programs and degrees offered along with majors of interest and study abroad programs</td>
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<tr>
<td>Financial aid/scholarships</td>
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<tr>
<td>Requirements for applications, acceptance, and curriculum</td>
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<td>Professors’ and administrators’ credentials</td>
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<tr>
<td>Grade curves or average GPA</td>
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<tr>
<td>Affirmative action and diversity</td>
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<td>Athletics (then sport name)</td>
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<td>U.S. News ranking/ranking/rank</td>
</tr>
<tr>
<td>Number of students/enrollment</td>
</tr>
<tr>
<td>Registration information</td>
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<tr>
<td>Terms most frequently searched on your university Web site</td>
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<tr>
<td>Directions and maps (to campus)</td>
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<td>Dormitories/dorms/housing</td>
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<td>Deadlines for applications and supplements</td>
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<tr>
<td>Average or acceptable SAT or ACT score ranges</td>
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<tr>
<td>Advising, mentoring, and tutoring</td>
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<tr>
<td>Safety and security of campus, dorms, city etc.</td>
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<tr>
<td>Total cost and pricing along with tuition and fees</td>
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<tr>
<td>Junior Year Abroad “JYA”</td>
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<td>AP Exams or Advanced Placement Examinations</td>
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<td>IB—International Baccalaureate</td>
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<td>Online course offerings and executive programs</td>
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<tr>
<td>FAQs “Frequently Asked Questions”</td>
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</table>
facilities, housing, tuition pricing, value, location, phone numbers, and contact names. You will certainly want to implement the use of online forms that your IT department can handle. However, the admissions Web site will want to limit clutter also. Keep in mind that you want to sell your university, but that your enrollment Web site will also need to allow for the application to be harvested with ease and without too much distraction.

Furthermore, most university Web sites are organized in “egocentric” fashion, that is, the organization of materials mirrors the institution’s formal organizational chart. Thus, students may have to follow several different pathways from the main portal to find the information they want. For example, the admission function may be in one vice president’s portfolio, housing in another’s, and financial aid in a third portfolio. The “egocentric” nature of institutional Web sites assumes that the prospective student understands the institution’s organizational structure—a shaky assumption at best. While arranging information and information layers may make perfectly good sense to those already affiliated with the institution (e.g., current students, faculty, staff, and administrators) and those who have already graduated, such an arrangement makes little sense to a prospective student who may be examining a large number of institutions in a short period of time. Thus, site navigation should be tailored toward prospective students.

Displaying the information in a logical sequence for the admissions process makes a good deal more sense. For example, the following array of institutional information is “intuitive” to most high school students in the admissions process:

- General Information for Prospective Students
- Application for Admission Information
- Accepted Student Information
- Enrolling Student Information
- Enrolled Student Information

While each of these major divisions may include certain redundancies, the added value of presenting the information in “process sequence” more than outweighs the overhead necessitated by the inclusion of certain redundancies.

Before and After, Testimonials, and Success of Alumni—Focusing on Benefits, Value, and Success

Most college marketing focuses on the product—the programs, majors, and services provided by the college. This approach often leads to a “so what” reaction from the student. A more effective approach is to focus on the “benefits” and “value” of the experience. Understanding the connection between the educational process and services provided by the institution, and the outcomes for individuals involved in those activities, refocuses thinking in the desired direction.

One of the most important features of recruiting is to show how your past students and alumni have succeeded. This is done in several ways:

- Secure testimonials from powerful and successful alumni (White 2002).
- Show their pictures or put a statement by the alumni on the site.
- On the site, show statistics of how alumni have fared in the salary and employment areas.
- Tie in your academics, graduate programs, and other supplemental profit centers to the site.
- Show the enthusiasm for the university and show the success of the endowment.

Similarly, care needs to be given when presenting vital institutional characteristics. For example, college Web sites will often address the issue of average class sizes with language like, “the average class size for lower division courses is 25.” Presenting the data this way leaves to the reader the job of determining what the benefits of an average class size of 25 are. Left to their own devices, some prospective students will make the correct connection. Unfortunately, others will not. However, if this important fact is presented with an explanation of its associated benefit, many more students will understand why the fact is of some significance. For example if the college says, “our average class size of 25 makes it possible for faculty to work closely with individual students, conduct substantive in-class discussions, and coach students in their area of interest,” this fact takes on a much greater significance.

In constructing a Web site, it is critical for those responsible for design and content to assume the mindset of the student. As such, benefits need to be articulated and the connections that are intuitive to those inside the academy must be clearly linked for those unfamiliar with the academy.

Search Engine-Friendly College Web Sites and Domains

In order for your Web site and domains to be search engine-friendly, they should contain these attributes:

- **Title**—The title of each Web page should target specific Web surfers (Bruemmer 2002).
- **Meta Tags**—These individualized tags should be in place on all university recruiting and other Web pages. It doesn’t matter how inconsequential the information on the page is; a student should be able to discover you via any major department of the university while surfing.
- **Content**—The text of each page should be keyword rich with a target audience in mind (Sivasubramanian 2000).
- **Headings**—The headings and keyword-rich text should be closest to the top left of the page and be carefully used throughout the rest of the page.
- **URL Names and Extensions**—The URL name is very important but the rest of the URL can have significance too. For example, the URL www.tulane.edu/collegeranking.html may be more likely to be picked up by a student searching for Tulane’s rank.

However, colleges need to maintain legal ethics in marketing while aggressively extolling the virtues of their campuses (Kamarck 1999). For instance, your Webmaster could easily target a competitor’s candidates by targeting code, keywords, and meta tags that would allow your site to rank when a student is searching for another college (Playboy Enterprises, Inc. v. Calvin Designer Label 1997).
Ease of Contact, Contact Us Pages, Response Times, and Toll-Free Numbers

Many students visit college Web sites looking for an application to complete or seeking a toll-free number to call admissions and ask questions or make requests. We cannot stress the importance of making accessibility and response key priorities. The ability to find the application form, fill it out, send it online, and receive a response, confirmation, or feedback is fundamental to improving upon your success.

While a well-designed Web site can group information generally by logical phases (e.g., applicant phase), no Web site can accurately sequence information for the demands of an individual student. That said, it is possible to predict a number of the most important items that any student might want at any stage of the process. Access to things like the application for admission, the list of majors, financial aid programs, and the institutional catalog are high demand requests. These items should be included on the top layer of the admissions Web site as “process-stage independent” selections. For example, while the top layer of the admissions Web site may serve as a portal to those in the applicant or accepted student phase, both of which might provide entry to the university catalog, the direct access to the catalog could also appear as a separate selection on the top page unconnected to any individual process.

As for responses, many colleges and universities have compliance-approved (by their legal department) standard responses developed and ready to be e-mailed or mailed to candidates. Some universities may use autoresponders that send specific information to students who submit an e-mail that has certain questions checked (in check boxes or radio buttons) in the submission (Autoresponder-Review.Com).

Load Time, Documents, Forms and Other Files

We love beautiful graphics, pictures, fancy design and Flash. However, there are many students who will use traditional dial-up Internet services. For those candidates, the Internet Service Provider (isp) may take 30–45 seconds to download your entire admissions Web site or home page. For some prospective students, this time frame may be too long. Further, if the home page takes 30 seconds to load, and the next click for information is an application format that is not installed on the candidate’s computer, you have definitely lost a prospect. For example, if the high school surfer has 135 but all of your forms or other information are in Adobe or a higher version of Word, then the student may not have an hour to download the software to read your files (Burke 2001). Overall, admissions should offer forms in several formats.

Universities and Search Engine Listings for Education Institutions

Because you are a non-profit or education and research institution, search directories like Google may list all of your Web pages. Thus, you may as well have all of your forms in html versions online. This may increase your visibility and link popularity, however, you should be careful not to spam (over-submitting Web sites to search engines). Since search engines may catalog (spider) links on your home page, you may want your site to have links, forms, and other documents in hyperlink text format. This is part of the vital nature of having a proper title, text, content, and meta tag information for each link and page that is listed on your home page.

Links Back to Your Home Page

You should consult with your IT department and administration about all other college departmental Web sites linking back to admissions. This will increase your exposure and is a critical element in getting the prospective student to a Web location that presents information in a logical flow with regard to the admission and financial aid processes. Many prospective students will arrive at a departmental Web site by having executed a search by discipline field. The search engine they use may return Web addresses for particular departments within the institution—useful for providing program-specific information but useless for linking the student to the admission process.

Integration of Price, Scholarship, Grant, and Financial Aid Information

Each admissions site should contain clear information on how to apply, the process and turn-around time on applications, and acceptance or rejection notices. Moreover, to appeal to all socio-economic classes, each admissions site must clearly explain the possibility of tuition assistance with regards to financial aid or finding a job on campus.

Since many students may opt out of further consideration solely on the basis of “published price,” Web sites should present information on typical financial aid and “net cost” (price less average financial aid) scenarios on the same data displays as published price. This approach may encourage some students to initiate a dialogue with the admissions and financial aid offices that would have otherwise never taken place.

Statistics

Having access to online, password-protected statistical information for your Web sites will help you track your progress from season to season. This information will explain from what part of the world your visitors are coming, what other sites are sending you traffic, what prospects download information, the average amount of time visitors spend on your site, and other information such as errors or outages on your site (Wilson 2000–2001).

Closing the Sale to Your Best Prospects Online and in Person: Use of Superlatives

Search engines frown upon the use of superlatives in Internet marketing. Thus, we should be careful using statements like, “The top school in the region....” However, aggressive marketing

2 Macromedia Flash is the Web standard for vector graphics and animation. Web designers use Macromedia Flash to create beautiful, resizable, and extremely compact navigation interfaces, technical illustrations, long-form animations, and other dazzling effects for their site. Macromedia Flash files can play back with the Macromedia Shockwave Player or Java.
copy on Web sites that utilizes credentials, benefits, accolades, testimonials, and all other positive bullet points about your university should be used with skill and care. University Web sites are doing their job if they are producing leads and applications. In the end, it is the enrollment department’s job to “close the sale” and enlist all extraordinary students who are undecided, looking for financial aid, seeking out competition, and looking for a personal touch. Many students simply want to be convinced of the opportunity and prestige that comes from attending your university.

E-Commerce Payments for Applications and Other College Payments

In 2001, only one-tenth of colleges accepted payments online. Many colleges will probably begin accepting major credit cards in the near future (Strom 2001). However, there are issues in e-commerce that affect international payments as compared to domestic payments. For example, many countries do not have states or zip codes. Further, when a student pays online from overseas, some credit card companies or merchants will flag the payment or identify it as a security risk. But, because there is a need and demand for this service, most colleges will research and phase in this practice.

Integration of Online Applications, Online Forms, and Other Submissions—E-mail and Other Customer Service: The Use of E-mail and the Savings Involved

Having your student applications online is a way to reduce hard copy expense and use of paper. Similarly, these forms can be a way for IT to harvest e-mail addresses or other data for sending future mailings and updates. E-mail for colleges has increased savings in the areas of postage, labor, paper, printing expenses, and administrative time (Galgally and Rolls 2002). Some colleges rejoice in the savings of some of their seasonal mass mailings. The questions to be asked are how far the paperless office...
strategy can go, and will it become successful in all areas of enrollment management? (Wharton School 2001)

Just a few years ago, institutions did not consider e-mail a viable option for communicating with students. E-mail addresses were difficult to harvest, volatile, and only a small fraction of the prospective students had such addresses. Today, mailing list providers routinely collect e-mail addresses, the addresses are more stable, and a much higher percentage of the college-bound population has such an address as compared to just a few years ago. E-mail provides a low cost, high-speed communication mechanism for colleges and universities.

Several of the more popular applications of e-mail in college recruitment are listed below:

- Distribution of text documents such as PDF files for information pertaining to majors, financial aid, etc.;
- Notification of incomplete applications identifying the documents needed to complete the packet;
- Invitations for college-sponsored events with built-in RSVP mechanisms;
- Market research surveys;
- Newsletters containing information related to campus events; and
- Rich Text Format E-mail (see glossary).

The extent to which e-mail is used is limited only by the creativity of the admissions office. Since the cost is extremely low, it is possible for the admissions office to be in constant, interactive contact with members of the target population.

Trademarks, Copyright Notices and Disclaimers

For the purposes of online marketing and ethics, the university and IT department should protect themselves in the areas of intellectual property, trade names, trademarks, and copyrights (Iowa State University 1995–2002). It is always advisable to have your legal department provide the proper text, disclaimers, and marks to notify all visitors of potential violations and protections.

As for disclaimers, all admissions and enrollment departments should clarify the use of e-mail, address, name, and other information submitted along with general warranty clarification in using the university Web site (National Center for Education Statistics 1997). Enrollment may want to illuminate the contractual nature of any agreement with the admissions department of the particular university or college. Moreover, the disclaimers should protect the university in all financial dealings with students (see U.S. Department of Education Web site).

Overlooked Simple Add-Ons

It is always advisable to consult with your university Webmasters and Web design team to build the best site navigation, graphics, and search engine-friendly site. However, making a site “sticky”—keeping people at your site as long as possible—is important too. To add more to your Web site, include the following features: 1) an option to ‘bookmark’ the site or add it to the prospect’s ‘favorites list’ to encourage repeat visits; and 2) an option to e-mail the Web address and site information to a friend. Moreover, if your college admissions office generally accepts a large percentage of Spanish speaking or other bilingual students each year, it may be advisable for enrollment Web sites to include admissions and college information in languages other than English. Although this is a more complicated option, this should be a strategic decision based on your school’s demographics. Such custom tailoring of your Web site can make the difference in attracting and recruiting students to your institution.

References

Autoresponder-Review.Com. Your One-Step Guide to Choosing and Using e-mail Autoresponders to Enhance Your Website! Available at www.autoresponder-review.com/
U.S. Department of Education. Available at: www.ed.gov/offices/Om/fpcoa/ferpa/
International Resources
by Ann M. Koenig, Southwest Regional Director, Credential Evaluation Services, AACRAO International Education Services (IES)

Electronic Tools for International Admissions
Part II: E-Russia

Remember when it was almost impossible to find educational documentation and up-to-date information on the Soviet and Russian educational systems? The U.S. government’s Office of Education, as part of the former U.S. Department of Health, Education and Welfare, published a few books in the 1960s, but it was not until 30 years later, during a period of dramatic change in the region, that the next U.S. publication on the Soviet Union was released. The Pier World Education Series Special Report, The Soviet System of Education, was published in 1992. (This Pier report and the 1995 companion directory of higher education institutions in the “Newly Independent States and Baltic Republics” are available from AACRAO at www.aacrao.org/publications/catalog/wes.htm.)

There have been many new developments in this region since the mid-1990s, and we have seen a huge increase in the number of students studying in the U.S. who have educational backgrounds from this area of the world. Over the last five years, a significant amount of useful information about education in the Russian Federation has been posted on the Internet by official and reliable sources. More and more information is becoming available electronically as Russia becomes more “wired” and as it works toward full participation in formal European higher education partnerships. We in the U.S. benefit from these activities because they are resulting in more information being available in English about the structure and characteristics of the Russian educational system, better access to primary information on Russian educational institutions, and more extensive academic documentation from Russian students and graduates.

So how does one find all this useful information? Part I of this series presented five tips for using the Internet as a research tool, and recommended the UC Berkeley Teaching Library Internet Workshop (www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html) as an online tutorial for getting started. (See Fall 2002, Vol. 78, No. 2, pp. 33–34.) Many university and college libraries offer similar services, so check your institution’s library Web site, or speak to library staff in person for additional assistance. Learn to assess the validity of the information you find, and keep in mind that useful, reliable material may be available in languages other than English. If you have foreign language proficiency, or have resources available to translate information not presented in English, the potential pool of information available to you is much broader.

What follows is a collection of Web sites on Russian education, compiled from Internet searches done by the author, and listed in order of their usefulness as deemed by the author’s judgment. This compilation probably represents a small fraction of all of the reliable, useful material that is available on the Internet about Russian education. It reflects a range of resources that all professionals responsible for international admissions and transfer credit decisions should become familiar with, and provides electronic connections to useful information presented by governmental education authorities, educational institutions, overseas advisors and other trusted professionals in the field of applied comparative education.

Russian Educational System

- Schema of the System of Education of the Russian Federation: This chart is part of the electronic publication, IREX Guide to 100 Higher Educational Institutions in Russia, noted on the next page.
- SIIT & Informika: Use side bar to link to the Ministry of General and Professional Education of the RF, which presents official information on the Russian educational system provided by the ministry. Link to Databases and References, which includes many useful links to information on secondary and higher education in Russia. Provides many other education-related links.
  - www.informika.ru/eng/ (English)
  - www.informika.ru/text/ (Russian)
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The AACRAO International Guide: A Resource for International Education Professionals is your complete source for information on international education, comprising such core issues as policy, recruitment, technology, English proficiency, student visas and credential evaluation. As a critical part of any international reference library, it also provides a thorough look at study abroad program development and specific roles and issues for community colleges.

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Please contact AACRAO directly at (202) 263-0292 with questions about publications or by e-mail at pubs@aacrao.org.
Higher Educational Establishments of Moscow & Moscow Region: This site is currently “Under Construction.” When running, it provides links to Moscow institutions that have Web sites, and allows the user to search institutions alphabetically by name or field of study. Note that this site can also be reached from the link “Databases and References” on the SIR & Informika Web site (see previous page).

www.icsti.ru/English/Mosvuze/vuzmose.htm

Braintrack University Index:
Russia (Asian part): Links to about a dozen higher education institutions.
www.braintrack.com/linknav.htm?pprevid=207&level=3&sp=1

Russia (European part): Links to about 40 institutions.
www.braintrack.com/linknav.htm?pprevid=133&level=3&sp=5

The Higher Education Institution Registry, Russia: Includes links to about 80 institutions.
www.siu.no/inst.nsf/institutions?SearchView&Query=FIELD+Country+CONTAINS+Russia&SearchMax=200&SearchOrder=1

Russian Educational Institutions

Informika links to institutional profiles based on official information from the Ministry of General and Professional Education.
www.informika.ru/eng/sprav1/ (indexed by type of institution)
www.informika.ru/eng/intern/ (indexed by city/location)

World Higher Education Database: Click on “Russian Federation.” An expanded version of this resource is also available for purchase in CD-ROM format. See information on Web site.
www.unesco.org/iau/whed-2000.html

Higher Education System of the Russian Federation: This six-page text is the introduction to the electronic publication, IREX Guide to 100 Higher Educational Institutions in Russia, noted below.

St. Petersburg University Centre for International Exchange: Brief outline of Russian educational system.
www.spbu.ru/eng/Education/cie/acad_sys_e.htm

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www.aacrao.org/publications
IREX Guide to 100 Higher Educational Institutions in Russia:
Electronic publication compiled and edited by Sidney H. Chang, Department of History, California State University, Fresno. Reflects institutional profiles gathered 1997–2001. Also includes chart of Russian educational system, general introduction to system, and several useful appendices.
www.irex.org/pubs/resources/scholar/chang/

Colleges and Universities: Lists 19 Russian universities.
web.mit.edu/cdemello/www/ru.html

WebList!Russia: Education: Links to many kinds of educational institutions, including universities and secondary schools.
weblist.ru/english/education/

E-Mail Russian Schools, Lycees, Gymnasia, Kolkedzhy, etc.: E-mail links to some Russian secondary schools—in Russian. This is also linked on the sitt & Informika site, under “Databases and References,” then under “Secondary Education.”
www.informika.ru/text/goscom/mailsc.html

Educational Advisors in Russia/NIS (Eurasia)

U.S. Department of State’s Regional Educational Advising Consultancy (REAC) of Eurasia: Includes links to information on Russia and other NIS countries (see map and side bars at bottom of page).
www.irex.ru/reac/

U.S. Education Information Center (EICS) network in the NIS
www.useic.ru/eics/

American Councils ACTR-ACCELS Education Information Centers

OSEAS—Eurasia Region: Links to the NAFSA OSEAS advising network in the Eurasia region.
www.irex.ru/reac/oseas.html

OSEAS Advisor—How to Reach OSEAS Advisors
www.oseas.nafsa.org/howtoreach.asp

Other Useful Resources:
East/Central Europe & Russia

Internet Resources on American and Russian Education:
www.indiana.edu/~isre/ISRE_Newsletter.htm

Russian and East European Network Information Center, University of Texas at Austin
reenic.utexas.edu/reenic/countries/russia.html

Information on Eastern/Central Europe and NIS Educational Systems—OSEAS-Europe (does not include Russia).
www.bibl.u-szeged.hu/oseas/edsystems.html

American Councils for International Education (American Council of Teachers of Russian [ACTR] and American Council for Collaboration in Education and Language Study [ACCELS]). Links to study abroad in Russia, Russian language courses, exchange programs, etc.
www.actr.org/

WENR (World Education News and Reviews), free electronic newsletter published by World Education Services, New York
www.wes.org

ECE Electronic Newsletter: Free electronic newsletter published by Educational Credential Evaluators, Inc., Milwaukee, WI:
www.ece.org

Part III of this series will appear in the Spring 2003 issue of C&U.
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