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Floating a University Website: If You're Going to Fish, Bring the Right Bait

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FLOATING A UNIVERSITY WEB SITE: “IF YOU’RE GOING TO FISH, BRING THE RIGHT BAIT”

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ABSTRACT

Visual and printed information desired by precollege students was examined using a cluster technique. Significant relationships between the ACT score and student preferences were found. Several recommendations are offered to assist college and university administrators integrate the reach and interactivity of the Web into their overall marketing strategy.

INTRODUCTION

The World Wide Web (Web) will change the relationship between consumers and marketers in profound ways not yet imaginable. McFarlan (1984) in the mid-eighties recognized that technology was influencing the competitive environment and reshaping the manner in which buyers and sellers interacted. Almost fifteen years later, Ghosh (1998) warns that business executives cannot avoid the impact of electronic commerce on their businesses. He further asserts that managers need to understand the opportunities available to them and recognize how their companies may be vulnerable if rivals seize those opportunities first. Hamel and Samper (1998) assert that “the Web will fundamentally change customers’ expectations about convenience, speed, comparability, price, and service.” These new expectations will reverberate throughout the new economic order, fundamentally affecting every business.

A concomitant marketing philosophy could apply to institutions of higher education, given the internal pressures on departments of admission and enrollment management to recruit and retain the best possible student candidates. A professional in higher education today would agree that no substantial difference exists in the appeals that colleges and universities make to the student-customer and the appeals that businesses make to current and prospective customers. Hence, there is the potential for competitive positioning with the use of information technology (Grover, Cheon, and Teng 1994). And no marketing tool better exemplifies the vast power and potential of disseminating information in hypermedia computer-mediated environments than the Web (Hoffman and Novak 1996).

The Web represents the first truly new medium since television and as such there is a need for more systematic research (Berthon, Pitt, and Watson 1996). A brief overview of current literature indicates various “streams” of research. For example, Randall (1997) reviewed four scenarios or strategies that consumers use on the Internet; Siegel (1997) detailed the dynamics of creating a “killer” Web site; Farnsworth and Nicksic (1998) examined marketing with computer graphics; Palmer and Griffith (1998) offered the information intensity paradigm for understanding Web site design issues; and Neuborne and Hof (1998) broached the concept of “rational branding” on the Web. However, most research assumes that the main issue for marketing practitioners is the design or raw dissemination of information. This assumption may hold true for a product or franchised service, but marketing the value-added of an “information intense” (Palmer and Griffith 1998) product that a college or university provides may be drastically different than the information content necessary to effectively market a broad array of physical products and commodities.

Merritt (1996) reiterated that like thousands of enterprises trying to sell goods and services on line, universities have too, gone online. Merritt stressed that it is easier than ever for the prospective student to glean the university information directly from a computer screen. Weber (1996) reviewed an extreme form of this new Web interactivity by highlighting how a marketer was looking for a new way to reach college students. Weber explained that the organization decided to appeal to one of the oldest human impulses—voyeurism. The result was that a “visitor” may peer, via digital cameras, into the dormitory rooms of seven actual college students, any time of the day or night. Miller (1995) in earlier research emphasized that marketers are opening Internet sites designed for college students using a game format. Miller suggested that the intent is for students to receive information on for-profit services, such as banking and credit cards. However, more in line with most nonprofit universities, Web marketing simply means placing the written catalogue online. When universities finally develop a Web marketing plan beyond the catalogue, Merritt (1996) summed up their efforts as little more than slick electronic marketing brochures.
WEB DESIGN: INITIAL CONSIDERATIONS

One of the first steps to consider when developing and implementing the university’s “electronic commerce” strategy is to determine what kinds of visuals and information content to include in the Web site. The goal is to both reflect the essence of the institution and to give prospective students the visual representations and information they desire. This is in contrast to presenting only what the university wishes the student prospect to see and know. Hopefully, the two viewpoints merge. Farnsworth and Nicksic (1998) discussed this concept and concluded that Web builders must first think in terms of what is required to sell a product to their audiences; hence, builders should begin by thinking about what their audiences expect to see and then later consider how they expect to see it. The latter issue of how they expect to see it reflects a validity study, similar to when Dreze and Zufryden (1997) described a conjoint analysis-based methodology for evaluating the effectiveness of Web content. As an analogy to the Farnsworth and Nicksic study, a fisherman knows that the overall catch largely depends on the lure; and only a few select universities can cast a net.

PURPOSE OF THE STUDY

The purpose of this study is to examine the planning and design of university Web sites. More specifically, the focus of this research investigates the selection of appropriate university visuals and information content that reflect what a prospective student desires and anticipates while actively engaged in their search process. On a more general level, the overall purpose is to help college administrators merge the reach and interactivity of the Web with the more traditional advertising and promotional strategies currently used in higher education (Berger and Wallingford 1996; Ducoffe 1996; Rosner 1996).

METHODOLOGY

Two hundred and sixty questionnaires were distributed at a Career and College Exploration Night held for high school junior and seniors in the Spring of 1999. The only criterion for participating in the night-program was that a student had plans to attend a university. The administered questionnaire was simple in design, requesting that the prospective student fill-in an appropriate column. The format was open-ended and requested that the student “help us construct a university Web page.” In two columns the participant was asked to write-in the visual pictures that they would like to see on the Web page (column one); in column two, the respondent was asked to provide the information they would like to know about a university. For clarification, a response in column one could be a statement concerning the university grounds; and in column two, central to the student’s written theme, tuition could have been mentioned. As a design control, there were two questionnaires administered with an equal number of reverse format questions. That is, question one (column one) became question two (column two) on questionnaire form #1; likewise, question two (column two) became question one (column one) on questionnaire form #2.

DEFINITION OF THE VARIABLES

Five variables are developed and used in this study. The variable names are capitalized and operationalized. The first variable, VISUAL represents the pictures a prospective student would like to see offered by a university; INFO is the information that a prospective student would like to know about the university’s offerings; AREA is a theoretical construct formed by clustering the like responses that were elicited from the prospective students. Doby, et al. (1954) summarized this technique of clustering like responses as to make explicit the character of the data subsumed under it. The fourth variable, PREFERENCES, is a numerical preference for either visual or printed information as obtained from summing individual response rates per category; and ACT is the raw composite score used for college admission (The American College Testing Program 1997).

As a common descriptive and admission variable collected at all universities, the ACT score is one standard in measuring college aptitude. The rationale for using a single variable approach in this investigation lies not with its heuristic value but with its practical application. It is widely known that universities recruit, admit, and award scholarship dollars based on academic aptitude. Although variables that include ethnic origin, race, religion, or gender would be interesting, they hold little practical value for most of the universities who do not discriminate based on the aforementioned characteristics. For example, when was the last time that you heard of university administrators purchasing a prospect list of Caucasian females who are American Indian and Baptist? How often will universities purchase a list of prospective students with ACT scores above 25, 28, or 31? Therefore, this single variable
in a study, investigation is appealing in terms of hypothesis development, cluster interpretation, and practical application. There are two general research questions that center on Web design issues and four specific research hypotheses that pertain to prospective student segmentation.

**GENERAL RESEARCH QUESTIONS: WEB DESIGN ISSUES**

1. Is there a discernible relationship between ACT scores and how individual responses are clustered into the construct variable AREA?

2. When rank-ordering the individual responses within the construct variable AREA according to frequency, what individual response occurs the most in terms of percentage?

**SPECIFIC RESEARCH HYPOTHESES: STUDENT SEGMENTATION ISSUES**

H1: The ACT variable accounts for a significant amount of variance when predicting the criterion variable VISUAL;

H2: The ACT variable accounts for a significant amount of variance when predicting the criterion variable INFO;

H3: There is a relationship accounting for a significant amount of variance between the variables VISUAL and INFO; and

H4: The ACT variable accounts for a significant amount of variance when discriminating between a preference for visual or printed information as measured by the criterion variable PREF.

In this study it is implicitly assumed that universities will use their Web site to attract new students. Also, three statistical assumptions are offered and used in the analysis. First, the more written responses found in an area indicate a preference; second, when the composite ACT score differs between groups by more or less than one standard deviation, statistical significance exists; and third, the first rank in a hierarchy of individual responses has significant implications, not unlike “top-of-mind” awareness studies used in advertising research.

**RESULTS**

The first general research question posed in this study asked if there is a discernible relationship between ACT scores and how individual responses are clustered into the construct variable AREA. The results are illustrated in Table 1, using the acronym LAPTOP to reflect the rank-order of student responses clustered into conceptual groupings.

<table>
<thead>
<tr>
<th>AREA (Construct)</th>
<th>Number of Responses</th>
<th>Composite ACT</th>
<th>Classification (Modality)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscaping</td>
<td>1604</td>
<td>18</td>
<td>Visual</td>
</tr>
<tr>
<td>Architecture</td>
<td>1157</td>
<td>18</td>
<td>Visual</td>
</tr>
<tr>
<td>Programs</td>
<td>721</td>
<td>26*</td>
<td>Information</td>
</tr>
<tr>
<td>Tuition</td>
<td>713</td>
<td>20</td>
<td>Information</td>
</tr>
<tr>
<td>Outstanding Feature</td>
<td>602</td>
<td>19</td>
<td>Information</td>
</tr>
<tr>
<td>Prestige</td>
<td>567</td>
<td>20</td>
<td>Visual</td>
</tr>
</tbody>
</table>

**Note.** The average number of visual responses for each participant was 12.82; the average number of information responses was 7.83; (*) indicates that an ACT score of 26 lies more than 1 standard deviation above the population mean (20.32); the rounded standard deviation was 4.
The second general research question assesses the rank-ordering of individual responses within the construct variable AREA according to frequency and examines what individual responses occurred the most in terms of percentage. Table 2 lists Top Responses by again using the acronym LAPTOP and specifies the First-Rank Response in a hierarchy of individual responses within each construct area.

<table>
<thead>
<tr>
<th>AREA (Construct)</th>
<th>First-Rank Response</th>
<th>Percentage</th>
<th>Weighted Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscaping</td>
<td>Aerial view</td>
<td>.52</td>
<td>4</td>
</tr>
<tr>
<td>Architecture</td>
<td>Residential Housing</td>
<td>.35</td>
<td>5</td>
</tr>
<tr>
<td>Programs</td>
<td>Academic Majors</td>
<td>.71</td>
<td>2</td>
</tr>
<tr>
<td>Tuition</td>
<td>Cost and Co-ops (Tie)</td>
<td>.32</td>
<td>6</td>
</tr>
<tr>
<td>Outstanding Feature</td>
<td>College Known For</td>
<td>.79</td>
<td>1</td>
</tr>
<tr>
<td>Prestige</td>
<td>Alumni Profile</td>
<td>.66</td>
<td>3</td>
</tr>
</tbody>
</table>

Note. Percentages do not total 100% due to the possibility of participants designating more than one response. The Weighted Rank reflects the [new] rank-order of AREA when sorted according to percentage.

An overview of the Top Five Subcategories found within each AREA are listed in rank-order and illustrated in Table 3. Since the categories were open-ended, many of the previous responses were “fit” into a category within an AREA. For example, a prospective student indicating that they would like to see where they would workout or socialize became the “Recreation Center.”

Four research hypotheses pertinent to prospective student segmentation issues were tested. Each hypothesis was tested at the .01 alpha level. Hypothesis #1 tested if the ACT variable accounted for a significant amount of variance when predicting the criterion variable VISUAL. Significance was found (F(1,258) = 16.6 p < .000). Hypothesis #2 tested if the ACT variable accounted for a significant amount of variance when predicting the criterion variable INFO. Significance was found (F(1,258) = 26.4 p < .000). Hypothesis #3 tested if there was a relationship accounting for a significant amount of variance between the variables VISUAL and INFO. A significant relationship was found with a Pearson Correlation of .690 and R-square of .47. Hypothesis #4 tested if the ACT variable accounted for a significant amount of variance when discriminating between a preference for visual or printed information. No statistical significance was found.

DISCUSSION

Clustering individual responses to create a theoretical construct was one intent of the first general research question. When pertaining to Web design issues however, the statistical question of concern addressed if the composite ACT score of assigned clusters could differentiate between groups. Only one area labeled PROGRAMS found in Table 1 was significant. PROGRAMS connoted a participant’s desire for information on the number of specialized majors, certifications, departments, courses offerings and career descriptions. The implication is that students with high academic aptitude desire more specific information related to majors of interest. Therefore, designing a Web site that develops the full extent of a major makes practical sense if your target student has a composite ACT of 26 or above. However, a university may wish to include a proportional amount of pictures to highlight PROGRAMS, since 66 percent of the responses in the first four AREAS of Landscaping, Architecture, Programs and Tuition exhibit a preference for the visual modality.

The second general research question pertaining to Web design examined the frequency and rank-order of individual responses within an area. The goal was to find the number one (#1) response in each area. Table 2 listed the overt findings but further and deeper discussion is warranted. In fact, a researcher may wish to examine and interpret the
TABLE 3
L A P T O P
TOP FIVE SUB-CATEGORIES

<table>
<thead>
<tr>
<th>Landscaping</th>
<th>Architecture</th>
<th>Programs</th>
<th>Tuition</th>
<th>Outstanding Feature</th>
<th>Prestige</th>
</tr>
</thead>
</table>

Note. This Table uses numbers 2-6 because the rank-order responses represent an inventory of written comments that occur with the greatest frequency below the First-Rank Response (See Table 2).

overt responses by using a more or less psychoanalytic method (see Schultz 1981). Simply stated, a manifest content is something overtly expressed; whereas, the latent content is covert and exemplifies what is really meant. Without dwelling too much on abstruse psychoanalytic theory, there is some value in conducting focus groups and using projective techniques (Haire 1950) to elicit interesting and useful insights from student groups. For example, LANDSCAPING may really indicate a prospective student’s security need; ARCHITECTURE could reflect adjustment or transitional fears; PROGRAMS may ponder issues of self-actualization; TUITION may be an evaluation of self worth; OUTSTANDING FEATURE may be an identification issue or personal need; and PRESTIGE could reveal issues related to ego integrity. The implication is that a university Web site designer may wish to design pictures and information that answer questions and desires never openly expressed.

An additional finding in Table 2 highlights the weighted rank-order in terms of percentages found. The data suggest that the "Big Three" responses, when controlling for sample size, are a college’s reputation, academic major options, and distinguished alumni. Therefore, it appears that a distinctive summary of the “Big Three” early in your Web site may enhance the university attractiveness in the heart and mind of the prospective student. Also, by including the information found in Table 3, the development of a comprehensive Web site is not only possible but can improve the probability of “luring” that prospective student to your university.

When reviewing the four specific research hypotheses, three were found statistically significant. However, even the nonsignificant finding has implications. Hypothesis #1 examines the relationship between ACT score and the number of visual pictures desired. Findings suggest that as a prospective student’s ACT score increases, so does the number of expected pictures. Therefore, knowing the university’s composite ACT could assist in choosing a relative number of visuals to be used in Web marketing. Hypothesis #2, investigating the relationship between ACT and information desired, was also significant. Findings indicate that as the ACT score increases, so does a prospective student’s number of information questions. Hence, findings imply that students with higher ACT scores will probably seek more relevant information when making a decision to attend or not attend a selected university.

Hypothesis #3 assesses whether a parallel relationship between two modalities of Web communication exists; that is, visual and written information. Findings were significant and imply that as the dissemination of one modality increases, so does the other. This suggests a balanced approach to designing the Web site in terms of the presentation of visual and written information. Therefore, a symmetry is necessary for meeting the preferences and expectations of a prospective student.
Hypothesis #4 was the single hypothesis found not to be statistically significant. This hypothesis employed a discriminant analysis in an attempt to find a break-point in ACT scores that would differentiate between a preference for visual or written information. Since no break-point was found, the tentative implication is that university Web designers should not artificially design a Web site to attract a selected type of academic performer. Therefore, creating or redesigning a Web site to only attract high academic performers is not substantiated by this study.

There are some cautions that should be discussed. First, this study took place at a Career and College Exploration Night for juniors and seniors. Hence, issues of anticipation and expectation could have influenced the responses. Second, since administration of the questionnaires involved one large group (n = 260), all the inherent statistical concerns of an intact group problem apply. Third, this public event included parents, counselors and teachers, therefore, some responses could have been coerced.

CONCLUSION

Floating a university Web site is more than placing a catalogue online. Time and consideration must be given to what a prospective student expects to obtain from an online visit. This study found some significant findings and offered plausible suggestions for the building and maintenance of a university Web site. Future researchers may wish to consider additional cohorts or validation studies. In addition, investigating the direct marketing opportunity contained within a university Web site seems appropriate and will add to the body of professional knowledge. Moreover, now that construct areas have been identified in-depth, client-based surveys can be developed. Also, specific research questions of future interest may include interactivity, student deliberation and college choice criteria in relationship to college selection.

REFERENCES


