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Web-Enabled Systems for Student Access
— Chad S. Harris and Tom Herring

Counseling Across Cultural and Color Lines
— Paul Marthers

Correlations Between Chiropractic National Board (Part I) and Basic Science Course Grades and Related Data
— Virginia Wolfenberger, Ph.D.

Colleges as Total Institutions: Implications for Admission, Orientation, and Student Life
— Heather M. Fitz Gibbon, Richard M. Canterbury, and Larry Litten

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Editor's Note

Thanks to those AACRAOans who wrote or phoned concerning their evaluation of the “new” cover for C&U. It seems clear that, though based on a small sample, our members like the professional image projected by the cover. On the subject of changing the size, opinion is divided with about half opting for the smaller 6”x9” size (it fits on the shelves of my bookcase) while the other half votes to retain the 8 ½”x11” size (easier to read, especially graphics). The C&U Editorial Board will give careful attention to size at its next meeting. Another consideration in the size issue is the AACRAO budget—the compact size costs a bit more.

The winter issue of College & University contains four articles of especial interest. Paul Marthers’ thoughtful first person essay lays out for the reader his odyssey in handling race relations. He also offers several informative suggestions for admissions officers.

Are AACRAO’s professional school constituents somehow slighted in C&U? Well, frankly yes, because the Editorial Board rarely receives manuscripts addressing their issues. But at last, thanks to Virginia Wolfenberger, we are able to redress that slight by publishing an article that investigates the relationship between academic variables and scores on the licensing Board examination.

Just when we thought we had it made with telephone registration systems, we hear from Chad Harris and Tom Herring, who describe in detail how one institution (CSU, Fullerton) is working with Mesa Communications to install a Web-enabled system for student access, a system that appears to have many advantages and which can be made to interface easily with other (usually numerous) computer programs on campus.

Fitz Gibbon, Canterbury, and Litten enlighten us concerning the concept of “Total Institutions” and incorporate higher education into it. The authors draw practical implications for college marketing and admissions, for orientation, and for student life.

roman gawkoski, editor

Your Editorial Board and the Editor wish each and every AACRAOan a happy and healthy 1999 and a most successful opening of the second semester.

Deborah Aiken
Assistant Dean of Enrollment Services
Community College of Rhode Island

Polly Griffin
Registrar
Davidson College

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Note: The editors of C&U would like to make a correction. In the Summer/Fall 1998 issue, author Susan Bippenger’s name was inadvertently spelled Rippberger. We apologize for the oversight and any confusion it may have caused.

College & University (USPS 121460) is published three times a year (summer/fall, winter, spring) by the American Association of Collegiate Registrars and Admissions Officers, One Dupont Circle, NW, Suite 320, Washington, DC 20036-1135. The annual index appears in the summer/fall issue. The cost of the publication is included in the AACRAO membership fee. US nonmember subscription rates are $30 for one year, $55 for two years, and $75 for three years; foreign nonmember subscription rates are $40, $70, and $90.
said, "With almost 90 percent of our students working and commuting, Web-enabling registration has a great deal of value to them as our customers. Similarly, our faculty would be substantially better served by being able to use the Web as a secure and convenient grade-reporting device."

To provide a good business case for CSU, Fullerton, the server-based middleware solution had to tap the 'value' of IS, rather than replicating its functionality in a Web implementation. Any viable solution must provide/be:

• **Interoperability**—The solution must be capable of supporting a thin client (the standard Web browser).

• **Connectivity**—Application functionality can be accessed from anywhere serviced by the Internet.

• **Access to existing applications**—To achieve maximum value, the user must tap functionality, both applications and data, that are in the current IS legacy systems.

• **GUI support to end clients**—The solution must present information in an intuitive way (by presenting information in a manner that is immediate and obvious to students, faculty and staff).

• **Server-based**—Any solution must be easily scalable to accommodate changing demand.

• **Security**—At minimum the solution must meet or exceed security requirements for current legacy systems. A layered approach is desired.

• **Cost reduction**—The solution must provide dramatic cost savings in development, maintenance, and deployment compared to traditional approaches.

• **Rapid application development**—Given the current rate of change in higher education and technology, the solution must be capable of rapid development and deployment of the new functionality.

### Compelling Case

What were the events that inspired CSU, Fullerton to see the Internet as a business solution? The answer has both strategic and tactical components. The strategic answer is that up until recently this technology was evolving and had not significantly matured to be a viable business solution. This is especially true with regard to its ability to provide adequate security and to perform complex operations. Projecting functionality across the Internet must be secure and any middleware application must add business value to a Web-to-legacy solution. At the tactical level, the answer revolves around the use of thin clients, leveraging existing technology, and the ability of Information Request Brokers (IRB) to perform these complex operations.

### Thin Clients

Unlike the "captive client" architecture, where end users must be armed with an arsenal of proprietary hardware and software, the thin client Web browser approach is very appealing. The evolution of a set of open standards which are associated with the World Wide Web allow centrally created applications to present information to users using Web browser client software in standardized ways. This reliance on openness and standards means that a Web server application can deliver information and applications to a "universal client"—a Web browser—regardless of the client computer's architecture, the operating system that it runs, or the toolkit used to implement the application on the server. It is therefore no longer required for the application builder to dictate terms to the client that define hardware or operating system requirements for accessing the application. Any system that can run a standard Web browser will do. This approach also eliminates the sizable problems involved in version control for application software distributed to "thick clients."

### Leveraging Technology

The use of Internet technology to solve business problems offers IS the best of both the mainframe and client/server computing models. With IS being server oriented, use of the Internet allows IS to flexibly manage the server environment in order to optimize reliability and performance. Meanwhile, Web browsers provide end users with rich visual and multimedia presentations within the native graphical user interface (GUI) of the end user's environment. However, the fact that there is only one piece of software out at the client end of the network (regardless of how sophisticated it may be) enormously reduces the complexity of the overall environment. This standardization of client software and communication protocols greatly reduces the cost to IS of supporting those end users and the network as a whole. The Gartner Group reports that more than 75 percent of the total cost of owning a LAN-based network is consumed in the labor costs to support it.

### The Evolution of Information Request Brokers

Many universities were early adopters of the Internet and have experience building custom Web applications that reach out to obtain information from other application hosts or databases in the enterprise network (see Figure 2), using
spectrum of capabilities, starting at the simplest and exploiting the more advanced capabilities over time. The following bullets provide a synopsis of the Web-to-legacy “food chain.”

- Host Terminal Applications use the Intranet and Web technologies only as a Transport mechanism to display the exact same data that are being used today. An example of this kind of capability is a plug-in that does IBM 3270 or 5250 “green screen” terminal emulation. These Transport products are ideal for the limited set of end users who really want or need to use the terminal applications in green screen mode, but from some new location that is easy to connect to via the Internet (or Intranet). The good news is that it provides the truest terminal emulation for users who are already familiar with 3270 or 5250 applications and want nothing to stand between them and their PF keys. The bad news is that it provides the truest terminal emulation and forces everyone else to deal with that level of user interface.

- Emulators allow end users to get access to host terminal applications using the standard display capabilities of Web browsers. In this case, the IRB provides very thin functionality to do on-the-fly conversion of the terminal data streams (e.g. 3270, 5250 or VT220) into HTML and vice versa. The default translation offers the same text and layout from the terminal screen displayed at the browser using nothing but standard HTML equivalents for input fields, highlighting, and so on. The major benefit of this “gray screen” approach is that any end user with any Web browser on any client platform can use the host terminal application (again via the Internet or Intranet), eliminating that end user’s need for separate client terminal emulation software.

This capability is ideal for the majority of existing 3270/5250/VT220 end users who don’t really need the exact green-screen emulation in order to use effectively the host application. The cost savings of Intranet access and lower client support costs far outweigh any emulation trade-offs in the HTML translation process. This capability also allows organizations to open up access to host applications to a whole new community of internal or external end users who do not have terminal emulation software of any kind.

- Depending on the sophistication of the end users, the organization may wish to use an Enhance capability to improve the presentation of the application. For host terminal applications this may mean moving away from slavishly following the terminal interface and taking advantage of the graphics and multimedia capabilities of the end user’s Web browser. Similarly, a scripting language can be used to provide an Automate capability that assists the end user by seamlessly navigating the enterprise application on their behalf. Used in conjunction, the enhance and automate capabilities of an IRB can extend the usefulness of existing applications while at the same time improving end user productivity.

The added value of an IRB can really become apparent when an institution goes beyond simply mimicking a single existing application. Within large institutions there are applications of almost every vintage of technology, most of which are not capable of working together on their own. However, that is not to say that the institution’s end users, students, alumni, faculty, and customers or other administrators would not benefit greatly if they didn’t have to deal with each individual application separately.

An IRB is an excellent enabling tool that allows IS to create a shell interface that effectively makes all of the disparate...
Figure 7: Parallel Performance Architecture

Figure 8: Main Menu Screen
going on behind the scenes and invisibly to the user). The results of these queries are assembled, acted upon by a middleware application, and presented back to the user in a GUI form via a Web browser interface. In this case, the application accesses data elements on five SIS+ screens, assembles the data, converts arcane codes to English and builds the Student Billing Statement (see Figure 9).

Test Web notes the amount and returns to the main menu to determine the amount of and the reason for the Hold on his account.

As with Billing, the application initiates application rules which query the application and build the GUI screen (see Figure 10) which displays the data. Here, Test Web notes that his check for $665.60 has not cleared. In the production implementation, an e-mail function will link the user with the appropriate department from the application screen.

At this point Test Web would like to determine the open sections for the Sociology 101 class he has to take to graduate. From the main menu, he selects Registration and the middleware engine initiates the application rules to log him onto the registration section (see Figure 11) of the system.

Here he finds he still does not know the course ID. Given that he uses the pull-down menu under Option 3 and chooses the Sociology section of the course catalog (see Figure 12). At this point, the application queries the course catalog on the mainframe and displays the Sociology offerings for the fall 1997 semester.

Test Web checks the radio button next to Sociology 101 to “drill down” and determine what sections are still available. The application queries the SIS+ application to determine Soci-101 available sections. He is in luck. Section 1 which is given on Monday-Wednesday-Friday at 9 a.m. is still open. He checks
Student Information System

Course: SOCI-101  Course Description: Introduction To Sociology  Term: Fall 97

Select an option below to ADD a course to your schedule:

<table>
<thead>
<tr>
<th>Section</th>
<th>Units</th>
<th>Days</th>
<th>Time</th>
<th>Location</th>
<th>Status</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>C 01</td>
<td>3.0</td>
<td>MWF</td>
<td>0900-0950AM</td>
<td>H426</td>
<td>Open</td>
<td>Nagy</td>
</tr>
<tr>
<td>C 02</td>
<td>3.0</td>
<td>MWF</td>
<td>1000-1050AM</td>
<td>H514</td>
<td>Open</td>
<td>Aoe T</td>
</tr>
<tr>
<td>C 03</td>
<td>3.0</td>
<td>MW</td>
<td>0100-0150PM</td>
<td>H414</td>
<td>Open</td>
<td>Peckay</td>
</tr>
<tr>
<td>C 04</td>
<td>3.0</td>
<td>TR</td>
<td>1000-1150AM</td>
<td>H123</td>
<td>Open</td>
<td>Bedell</td>
</tr>
<tr>
<td>C 05</td>
<td>3.0</td>
<td>TR</td>
<td>1130-1225PM</td>
<td>H514</td>
<td>Open</td>
<td>Gifford</td>
</tr>
<tr>
<td>C 06</td>
<td>3.0</td>
<td>TR</td>
<td>0230-0345PM</td>
<td>H414</td>
<td>Open</td>
<td>Fengel</td>
</tr>
<tr>
<td>C 07</td>
<td>3.0</td>
<td>T</td>
<td>0400-0530PM</td>
<td>H514</td>
<td>Open</td>
<td>Gifford</td>
</tr>
<tr>
<td>C 08</td>
<td>3.0</td>
<td>W</td>
<td>0400-0530PM</td>
<td>H514</td>
<td>Open</td>
<td>Fengel</td>
</tr>
<tr>
<td>C 09</td>
<td>3.0</td>
<td>W</td>
<td>1100-1150AM</td>
<td>H414</td>
<td>Open</td>
<td>Peckay</td>
</tr>
<tr>
<td>C 10</td>
<td>3.0</td>
<td>TR</td>
<td>0100-0215PM</td>
<td>H414</td>
<td>Open</td>
<td>Fengel</td>
</tr>
<tr>
<td>C 11</td>
<td>3.0</td>
<td>TR</td>
<td>0100-0215PM</td>
<td>H426</td>
<td>Open</td>
<td>Hughes</td>
</tr>
<tr>
<td>C 12</td>
<td>3.0</td>
<td>MWF</td>
<td>1200-1250PM</td>
<td>H514</td>
<td>Open</td>
<td>Aoe T</td>
</tr>
</tbody>
</table>

* To Register/Add a Course

Course
Unit
Course Title
Days
Time
Bldg
Room

12.00 Total Units

For Drops Only:
Select a course above to DROP and click the Drop Course button

California State University, Fullerton / Fullerton, California 92834

Figure 13: Catalogs/Sections

Student Schedule

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Course Title</th>
<th>Days</th>
<th>Time</th>
<th>Bldg</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-302</td>
<td>3.0</td>
<td>Cost Accounting</td>
<td>T</td>
<td>0700-0945PM</td>
<td>LH</td>
<td>401A</td>
</tr>
<tr>
<td>ENGL-200</td>
<td>3.0</td>
<td>Intro To Lit</td>
<td>TR</td>
<td>0100-0215PM</td>
<td>VA</td>
<td>276</td>
</tr>
<tr>
<td>MATH-310</td>
<td>3.0</td>
<td>Ordinary Differential Eq</td>
<td>MWF</td>
<td>1000-1050AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI-101</td>
<td>3.0</td>
<td>Introduction To Sociology</td>
<td>T</td>
<td>0400-0645PM</td>
<td>H</td>
<td>414</td>
</tr>
</tbody>
</table>

12.00 Total Units

For Drops Only:
Select a course above to DROP and click the Drop Course button

California State University, Fullerton / Fullerton, California 92834

Figure 14: Schedule Screen
Counseling Across Cultural and Color Lines

Paul Marthers

Concerning racial issues, most people would never think to verbalize or script their honest feelings and impulses. The author, a white male, sensitively describes his experiences over a four-year period when Phillips Academy assigned him to counseling groups composed entirely of students of color. His insights can provide guidance to us all, and perhaps most especially to admissions counselors.

For four summers I was a minority. I was the teacher/counselor at the Phillips Academy Math and Science for Minority Students (MS) Program. As I prepared 140 students of color for college admission during the summers of 1994, '95, '97, and '98, I realized this was unfamiliar territory for someone who had grown up in Vermont and was used to rural America and homogeneity.

Those summers I was counseling African-Americans and Latinos, from cities like Chicago, Fort Worth, New York, Memphis, and Atlanta, where the rolling fields were asphalt and the forests contained street light poles; I was advising Native Americans from the arid painted rock reservations in the Southwest where trees were sometimes viewed with suspicion. Many of the students had encountered few or no white counselors or teachers back home. The students, most of whom were the ethnic majority in their communities, were in a program affording them three summers of intensive study of English, mathematics, and science at Phillips Academy on full scholarships provided by corporations and foundations.

The experience was my first solely with students of color. For once I was the different one, the one confronting what persons of color face daily in the United States—the difference made by skin color. Worse yet, I, the lone Caucasian, was in charge. Isn't that the traditional oppressor role? Once my initial fear and guilt subsided, I realized that although I was the teacher, I might learn more over those six weeks than the students. That prospect seemed both daunting and exciting and I took to the task at hand with the open mind vulnerability can create (weakness is sometimes a strength). After the summers had passed, I began to wonder how many admissions counseling professionals had similar experiences and how those experiences could add to an ongoing dialogue about counseling across cultural and color lines.

During those four summers, I confronted a number of fears. There was fear of inadvertently saying something offensive. Of course I did—using the expression "low man on the totem pole." My face turned a crimson shade deeper than an Alabama football uniform. I think I was more mortified than the Native American students were offended—none reacted. There was the fear of acting too white. There was the fear that I would mistake normal adolescent opposition to authority for race-based resentment.

There was the fear that colorblindness was inappropriate. There was the fear that I might seem to be favoring Latino and Native American students because they looked whiter. There was the fear of guilt-induced over-compensatory niceness to the students of color.

There also was self-imposed pressure. I so much wanted to do a good job, no, a great job, yet underlying my enthusiasm were my own feelings about and experiences around the issue of racism. Should I address racism? Should I avoid it? What could I do to not appear defensive or insensitive? These were the questions I wrestled with in and out of class? Some things resolved themselves. I assigned my Mexican-American teaching assistant the task of leading several discussions, including one about college racism, a subject he was eager to address. Was that a cop-out?

"...I began to wonder how many admissions counseling professionals had similar experiences and how those experiences could add to an ongoing dialogue about counseling across cultural and color lines."

When there was a racial incident on campus (a psychology class produced a survey rife with derogatory stereotypes), we suspended the planned lesson for the day because students were too charged emotionally to discuss anything else. Ironically, the heinous occurrence provided a wonderful teaching opportunity. An (MS) student leader organized a committee that penned a letter of protest and con-
Despite a student of color percentage of only 20 percent, the cover of another college's admission bulletin showed six students, four of whom appeared to be of color. One student wrote that the disproportionate diversity on the brochure's cover reminded him of a rap music line, “there’s no future in your frontin’, basically meaning that if you hide behind your true identity, people are going to see through it.” Another student wrote, “I didn’t like that pamphlet...which seemed to have a minority in every picture, as if in a normal campus day you would see that many minorities.” Both students raised valid concerns. As colleges market more diverse images, they must understand that target audiences are smart enough to recognize dissembling.

Why cross cultural and color lines in counseling? Consider demographic realities. Long faded into historical footnote status is the so-called traditional college-going population, defined as a white male between eighteen and twenty-two years of age. Groups formerly known as minorities now comprise between 30 percent and 50 percent of the student body at many national institutions. Counseling across cultural and color lines is rapidly becoming a necessary fact of every day life in high schools and colleges.

The experience of working with these groups of students taught me that my own fears and racial attitudes were based largely on inexperience and unfamiliarity. Willingness to remove the barriers against the unfamiliar was step one toward self-transformation. My fears, I realized, originated within me (a kind of transference), separate from student behavior. I learned to question assumptions, shed preconceptions, and enter the world of the students of color. I realized that reaching a comfort zone was not necessarily the objective, but that understanding my own fears and breaking down my own misconceptions was the goal. I realized I should seek awareness and gain understanding of how we differ, and how to counsel in a setting of mutual acceptance and respect. After the three summers had passed, I wondered what had I been so afraid of? Was it simply the fear of being shunned or misunderstood due to my skin color? Finally, I discovered that I was only beginning to understand.

Sometimes I think the hesitation surrounding racial dialogue for fear of making a mistake is greater than the fear of those who are different from ourselves. People act on partial, often faulty information or incorrect assumptions simply because they are afraid to start a conversation. My experience crossing cultural and color lines helped me break the cycle that stagnates dialogue and learning. I encourage everyone in admissions counseling to experience the challenges and rewards of working closely with students from backgrounds unlike your own. You and your students both will benefit.

Winter 1999
Chiropractic students' performance on the National Board of Chiropractic Examiners (NBCE) test may be used to discern if the curriculum is effective in preparing students and to discern if students have been evaluated appropriately in their coursework (Kalthoff 1985). In 1996, there were three parts to the NBCE. Part I is basic science—subject areas covered by part I included General Anatomy (GEA), Spinal Anatomy (SPA), Physiology (PHY), Chemistry (CHE), Pathology (PAT) and Microbiology and Public Health (MPH). These subject areas are typically completed by students who have finished or are enrolled in their fourth trimester at Texas Chiropractic College (Texas Chiropractic College Catalog 1996).

Methods

The six scores of fifty-six students of Texas Chiropractic College who took the National Board of Chiropractic Examiners Part I exam for the first time in March of 1996 were examined for their relationships to each of the twenty individual basic science course grades. The six sections of the Board exam and the basic science courses are listed in Table 1. Pearson product moment correlation coefficients (r) were used to measure the linear relationships between each of the six sections of the NBCE Part I (p = 0.05) and each of sixteen basic science courses, and between each of the NBCE Part I's six sections and entering GPA, cumulative GPA at the end of the fourth trimester, entering number of credit hours, and entering degree. Linearity of each of these 120 (Table 1) possible relationships was evaluated via scatter plots since Pearson product moment correlations are valid only for linear relationships (Howell 1989). Coefficients of determination (r²) were determined for those associations that were both linear and found to have an r value equal to or higher than 0.25, indicating at least a fair degree of relationship (Dawson-Saunders and Trapp 1994). The coefficient of determination indicates the percentage of variation in values of one of the measurements that may be accounted for using the values of the other measurement (Gonick and Smith 1993). Bartlett's chi-square was performed for each of the six sections of the NBCE Part I and that section’s anticipated related course grades, based on departmental course designation and course descriptions.

Results

Since students must have successfully completed each of the basic science courses in the curriculum, there are no failures in course grades for the fifty-six students. For each of the six sections of Part I of the National Boards, a score of 375 is required to pass. Failure rates for each of the six sections are:

- GEA 20 percent
- SPA 25 percent
- PHY 20 percent
- CHE 5 percent
- PAT 10 percent
- MPH 22 percent

The basic science course grades and other variables that the Pearson product moment correlation indicated as having a statistically significant relationship (r = 0.25 or higher, p<.05) with each of the six sections of the NBCE Part I are presented with their r values and r² values in Table 2. Bartlett's chi-square test for each NBCE Part I section and its logical associated course grade variables was significant in all six instances, supporting the existence of at least some real correlations (SYSTAT 1996).

<table>
<thead>
<tr>
<th>Associated Basic Science Courses and Academic Scores</th>
<th>Sections on Board (NBCE) Examinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinal Anatomy SPA</td>
<td>GEA score</td>
</tr>
<tr>
<td>Histology GEA</td>
<td>SPA score</td>
</tr>
<tr>
<td>Gross Anatomy GEA</td>
<td>PHY score</td>
</tr>
<tr>
<td>Biochemistry CHE</td>
<td>CHE score</td>
</tr>
<tr>
<td>Research Methodology PHY</td>
<td>PAT score</td>
</tr>
<tr>
<td>Embryology GEA</td>
<td>MPH score</td>
</tr>
<tr>
<td>Gross Anatomy II GEA</td>
<td></td>
</tr>
<tr>
<td>Microbiology MPH</td>
<td></td>
</tr>
<tr>
<td>Physiology I PHY</td>
<td></td>
</tr>
<tr>
<td>Neuroanatomy SPA</td>
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<tr>
<td>Physiology II PHY</td>
<td></td>
</tr>
<tr>
<td>Pathogenic Microbiology PAT &amp; MPH</td>
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</tr>
<tr>
<td>Pathology I PAT</td>
<td></td>
</tr>
<tr>
<td>Pathology II PAT</td>
<td></td>
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<tr>
<td>Physiology III PHY</td>
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<tr>
<td>Public Health MPH</td>
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<tr>
<td>Entering GPA</td>
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<tr>
<td>Cumulative GPA</td>
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<tr>
<td>Entering Credit Hours</td>
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<tr>
<td>Entering Degree</td>
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</table>
But Table 2 also indicates the existence of correlations between basic science course grades and NBCE section scores that are not logically related. Additionally, there are correlations for all NBCE Part I sections and cumulative GPA and between all NBCE Part I sections except for Microbiology and Public Health (MPH) and entering GPA.

There exist correlations between each of the six NBCE sections and course grades for both Physiology I and Physiology II. Gross Anatomy I course grade correlates to all NBCE section scores except MPH. Spinal Anatomy, Neuroanatomy, and Pathology II all correlate with three of the six NBCE sections including their respective logically-related section. Research Methodology, Embryology, General Microbiology, Pathological Microbiology, Physiology III, and Public Health grades, entering credit hours, and entering degree do not have significant correlation with any of the six NBCE, Part I sections. The r value for relationship of cumulative GPA and entering GPA is 0.650.

Discussion

Correlation ($r$) is a numerical measure of relationships between two variables (Gibley and Davis 1978). In this study, correlation coefficients from 0.00 to 0.25 ($p>0.05$) indicate little to no relationship, from 0.25 to 0.50 indicate a fair relationship, from 0.50 to 0.75 indicate a moderate to good relationship, and above 0.75 indicate a very good to excellent relationship (Dawson-Saunders and Trapp 1994). However, there is no implication of a cause-effect relationship in these correlations (Howell 1989). Coefficients of determination ($r^2$) indicate the percentage of one of the variables accounted for when the other variable is known. They indicate how strong the relationship really is (Dawson-Saunders and Trapp 1994). Bartlett's chi-square test indicates there is an association or relationship between two variables (Dawson-Saunders and Trapp 1994); results of that test suggest that there are some real correlations among the variables tested (SYSTAT 1996).

Finding relationship between Physiology I and between Physiology II and each of the NBCE Part I sections is most likely attributable to the wide applicability of the courses' contents and to the stringent requirements of the courses. The other courses that show concordance with most of the NBCE sections also have applicability in diverse areas as well as requiring significant academic effort by students earning higher grades. It is likely that those students who are capable and who are willing to invest effort in achievement of higher course grades are also capable and willing to invest effort in achieving high NBCE scores. The ability to assimilate information and to reason that are required by some courses may also be reflected in concordance ratios with Board exam scores.

There was also an expectation of a significant positive relationship between course grades and Board scores since both measurements are presumed to evaluate the same data. Course grades are determined using instruments that have been developed by faculty members who have also contributed questions to the Board exams. Another interpretation is that faculty "teach to the Board exams." This idea would result in a high coefficient between the course and its logically associated Board section (Murphy et al. 1984). This does not seem to be the situation in this study, since correlations noted here are not consistent between Board scores and those courses that would be logically related to them.

The positive association of cumulative GPA at the end of the fourth trimester with all of the NBCE Part I exam sections and of entering GPA with all sections except MPH is again a probable indication of student capability and of effort put forth by the student in his/her educational endeavor. It is also notable that r values for cumulative GPA and the Board scores are in range of moderate to good relationship, except NBCE-MPH, which has an r value in the fair range, while entering GPA, for the five sections with which it had a significant correlation, had r values with the Board scores in the fair to moderate relationship range. This may suggest that student endeavor and ability in the professional program is more indicative of Board exam success than is previous educational effort. It is also reasonable for cumulative GPA at the end of the fourth trimester to be more closely related to National Board scores than entering GPAs since entering GPA doesn't provide information concerning what students have learned (Mehrens 1986).

Conclusions

It is apparent that it is not always the subject matter of a particular course that enters into the development of a relationship between course grade and Board scores. The ability to assimilate information and to reason influences both course grades and Board exam scores. This may be responsible for many correlations in this study. Student effort may account for more.

Additional studies incorporating a larger sample of student grades with Board results and predictive statistics are indicated by results of this study. To discern whether it is courses' contents or students' efforts and intelligence that results in correlations between variables that are not logically related and taking in consideration the lack of correlations between variables that would be logically related, additional studies are also needed.
Colleges as Total Institutions:
Implications for Admission, Orientation, and Student Life

Heather M. Fitz Gibbon, Richard M. Canterbury, and Larry Litten

Abstract
The authors make a reasoned case for extending the concept of “total institution” to colleges and universities, using such characteristics as isolation, activities, location, and unity of focused goals. The implications for admissions officers of life in “total institution” are discussed vis-a-vis development of self.

Colleges and universities share many common characteristics with other organizations in modern society. However, colleges and universities also differ from many other institutions in critical ways. These differences are often lost on people who focus on the similarities of colleges and other organizations and argue that methods used to market products or services can be applied easily to colleges. By recognizing where colleges fit into a recognized taxonomy of social institutions we can understand better how college marketing, admissions processes, orientation, and student life programs can be administered more successfully.

In categorizing social institutions, sociologists identify the degree to which an institution envelops all aspects of an individual’s life, that is, how much an organization conforms to what sociologist Erving Goffman (1961) referred to as a “total institution.” The concept of the total institution is based on its form, structure, and influence. It represents a powerful tool for understanding how individuals relate to an organization and to each other within the organization, how they develop as persons within an organization, and how organizations differ from one another.

Many colleges and universities approximate total institutions. This observation has important ramifications for the administration of colleges. In this article total institutions are discussed as a generic type of organization. This concept is applied to colleges and universities, noting where colleges fit into the various types of total institutions. Finally, the authors examine the implications of conceiving of colleges as total institutions for the management of student-related functions in colleges.

Characteristics of Total Institutions
The primary characteristic of a total institution is that people carry out all of their activities in the same place and in the immediate company of the same group of other persons (Goffman 1961). Total institutions both envelop their members (Goffman’s word, for reasons that will become obvious, is “inmates”) and isolate them from other institutions. Life in a total institution is highly scheduled and very closely monitored by an administrative staff, and all activities are organized to fit the goals of the institution. This is directly at odds with most of modern life where adults segregate work, sleep, and play, and where some places are designated as private space. (Even children of elementary and secondary school age spend major portions of their lives in separate institutions—home, school, daycare, church, independent athletic leagues, and arts classes.)

Goffman’s concept has most often been applied by others to “negative” institutions—those dealing with “problem” populations such as mental institutions (Goffman 1961), prisons (Farrington 1992), or homeless shelters (Stark 1994). It is perhaps this perceived negativity that has limited the application of the concept to a wider variety of institutions, including colleges. However, “[t]he issue is not ‘good’ institutions contrasted to ‘bad’; it is rather, the broadly supported power of institutions like prisons and prep schools to create and sustain a complete culture in which their goals can be met without the inevitable distractions of the “outside world” (Mitchell 1991). Thus, it is neither

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A second and related dimension of total institutions is the extent to which all activities in which students engage occur in the same place. This dimension is best defined by whether the institution is residential or commuter, but it is also a function of the degree to which an institution’s programs take place off-campus (foreign study, internships, co-op programs). Students at residential colleges all live in dormitories and eat in common dining halls, they party only with one another, go to church together, frequently are employed on campus, and have little contact with people who are not affiliated with the college. For these students the separation between the non-collegiate world and school is great—they truly enter another world when they go away to college. Indeed, such colleges temporarily replace the birth family for students who are en route to their adult families (which further explains why such colleges affect students, and are judged by them, holistically). Students at larger, urban universities are likely to have more choices in where they live, work, and find their recreation. Their lives are thus less enveloped by the institution, although individuals may variously draw upon the institution for sustenance, recreation, employment, and social life.

Furthermore, the academic programs at some institutions are much more dispersed locationally than at others—Kalamazoo College, with its required off-campus study, and Antioch College and Northeastern University with their co-op programs, are examples of institutions at one end of the spectrum. At the other end, the nature of its common curriculum confines students at St. John’s College (Annapolis and Santa Fe) much more to the campuses.

A third dimension of totality is the extent to which the institution holds to a prescribed program—curriculum or other activities—which represent clear, unified, and focused goals that are imposed upon students. All colleges seek to educate students, but some are far more particular than others in their educational specifications. Liberal arts colleges tend to have relatively prescribed and common program requirements but even within the group there are differences. At one end of this dimension St. John’s College (Annapolis and Santa Fe) offers a single four-year curriculum. Beloit College, Brown University, and Oberlin College, at the other end, make no specific course requirements, much less a requirement of a common four-year program.

Universities tend to be at the greater diversity end of the program dimension. The student bodies at larger urban universities are also more likely to be diverse than at liberal arts colleges in terms of race, ethnicity, class background, and age, and thus potentially less involved with each others’ lives. Urban universities also have a wider constituency, serving not only their students, but the city as well, so their faculty and staff are less likely to be as involved in the everyday lives of students, particularly undergraduate students.

While these three dimensions cohere in predictable ways, there are many possible combinations. Thus although it is very likely that rural colleges will be residential and focused on specific education goals, there are also small colleges that mix liberal arts and vocational programs. Large urban universities are less likely to be isolated, but there certainly may be colleges or programs within these universities that resemble small liberal arts residential colleges where the institutional unit envelops all aspects of their lives in a common set of requirements and experiences.

Where an institution falls within the typology of total institutions will have important consequences for how students experience college and their development of self. This can influence how they as prospective students will view the college. It will also influence how they can be recruited by the institution, provided with the orientation necessary for successful participation, and nurtured and served while they are students.

Implications of Life in a Total Institution for the Development of Self

Goffman’s purpose in writing about total institutions was not only to classify social institutions, but also to discuss the impact that institutions have on the development of self. These observations have important implications for how we understand the effects of colleges on students, and on prospective students.

An important observation made by Goffman and other sociologists who write about institutions in general (Kanter 1977; Hochschild 1983; Cookson and Persell 1985), is that organizations produce people who “fit” them. In other words, corporations, boarding schools, mental hospitals, and colleges take a diverse group of individuals and mold them into ways of behaving and thinking that fit life in that institution and best serve its goals. Clearly, and importantly for our considerations, when individuals have the capacity to choose institutions, as college students can, they choose those that seem best to fit their personalities, backgrounds, and goals at the time they enter. It’s not surprising, then, that “fit” is a concept well known to those concerned with admissions. Admissions officers (Dalton 1988; Clement 1995; Marthers 1995), guidance counselors (Hitchner 1995; Britz 1994), parents (Cottle 1991), prospective students (Karp, et al. 1995), and researchers (Williams 1984; Williams 1986; and Litten 1991) all use the word. As Williams (1984) asserts, “[a] substantial research base exists to support the notion that a good match, or fit, between student abilities, interests, goals, needs, and expectations and the institution’s ability to adequately respond to those inter-
institution must weigh...consumer needs, consumer wants, consumers' long term interests, and the interests of society. This orientation can be called a societal marketing orientation. A societal marketing orientation holds that the main task of the institution is to determine the needs, wants, and interests of its consumers and to adapt the institution to deliver satisfactions that preserve or enhance the consumer's and society's well-being and long-term interests.

Rather than employing marketing strategies targeting specific markets, colleges try hard to be all things to all people. This widely noted institutional inclination to generic representation (Canterbury 1989; Fenninger 1991; Galotti and Kozberg 1996; Grossman 1992; Hall 1985; Litten 1991; McDonough 1994; Smith 1991) puts colleges in the position of first reminding inexperienced and conflicted prospective constituents that they have an important, complicated, and potentially very costly decision to make, a reminder they hardly need, and then appearing to withhold information that will discriminate among their many options and help them make the decision well.

Students are no more or less rational when selecting the institutions in which they will spend four years, a long time in the context of their lives to date, than other people are when making important, costly decisions; the difference is that they are less experienced. They understand that the institution they choose will embrace all aspects of their lives during that period and that choosing one college means foregoing the experiences and influence of alternatives, a heavy responsibility. They judge institutions emotionally as well as rationally because that is how total institutions will affect them. And their judgments will be based on the realities of the institution, not simply on the information that marketing programs elect to provide. That is why visits are so highly valued as sources of information (Hayes 1989). That is why college marketing activities need to attempt not only to provide accurate information about a college—and its complexities—but also to convey an accurate "feel" of the institution. We can euphemize stress as "challenges" or a party atmosphere as a "lively social environment," but prospective students will see a place as a grind or a party school anyway. Furthermore, marketing programs need to provide students access to information about the variety of subcultures on campus that influence what a college does for and to students, and how it feels to be a member.

Finally, the fact that students are undertaking the process of recreating themselves and of disengaging from their families needs to be taken into account during the marketing/admissions process, although perhaps not overtly. Providing students with a total institution is a means of replacing the birth family and a vehicle for redefining self. But taking these enormous steps necessarily induces a grief unparalleled in students' experience (Viorst 1986), which even for those who are excited about escaping to new opportunities, produces ambivalence. Furthermore, choosing the institution that will accomplish those momentous tasks from among the vast number available has to involve a large measure of anxiety. College market research rarely addresses these negative or ambivalent feelings to ascertain when and how they occur, so marketing/admissions processes rarely deal with them either. Market research also often fails to consider the competence of late adolescents to address some of the issues that concern researchers (Sherrod et al. 1993) or the fact that the social significance of the decision or prior learning about expected answers may compromise the validity of some of the data obtained (Litten 1991; Chapman 1992; Francese 1996).

The college choice process imposes on the big issues of human development and developmental limits; the sociology of organizations and of families; questions of institutional power and restraint. Because it's genuinely important in the lives of individuals and families, the choice process doesn't lend itself to simplification of the sort that occurs now in the name of marketing. Simplification looks to the self-involved and heavily invested participants, like trivialization of their concerns. Trivialization of market concerns is not good marketing.

Implications for Orientation and Student Life

Much of what is noted above for marketing and admissions in colleges can be applied to the programs that affect life on campus directly. Orientation programs need to recognize both the rewards and the anxieties that necessarily flow from membership in a total institution in addition to providing information about how to do things in the institution. Colleges need to evaluate thoroughly how their structures and their various rules and regulations affect students' lives and their self-perceptions (and, in turn, affect prospective students' perceptions of the institution). Rules and regulations are often developed to rationalize the operations of the institution for purposes of efficiency and employees' ease. As colleges' re-engineering activities seek greater efficiencies and economies in their operations, their effects on students' understandings of themselves and the world should also be taken into account. The subcultures that exist on campus have various ways of helping students define themselves and work with (and against) institutional expectations. How institutional structures and procedures influence prospective and actual students can be understood by careful examination of the norms that students develop. Again, a critical evaluation of an institution's structures and rules by a sociologist who is familiar with the total institution literature

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classroom usually do not discriminate on the basis of the type of place or type of activity through which that learning was acquired. Enrollment in a non-academic language school is inherently no better or worse than acquiring language skills in another way. All of the ways noted above are non-academic, non-degree, and therefore by themselves non-credit.

It should be noted also that these comments are not restricted to the learning of a language. One could substitute computer science or mathematics or history or chemistry for language, and the basic situation would be the same.

Q.

I need some advice on Japanese nursing schools. We grant transfer of credit for courses completed at a nursing school that is part of an accredited university. We do not grant transfer of credit for courses completed in a nursing program at a senmon gakko (training school) or at a nursing school attached to a hospital.

I just received a transcript from a student who attended a senmon gakko nursing school for three years. The courses she took seem very academic (not simply technical training) so I began to wonder whether our policy is fair.

A.

As Ellen Mashiko explained on page 38 of her AACRAO-WES book on Japan, a senmon gakko is part of the group of institutions known as senshu gakko (specialized training schools). They offer an alternative to higher education. Courses completed at these types of institutions are considered in Japan to be non-credit courses. Senmon gakko and senshu gakko are not degree-granting institutions, and the courses they offer are not accepted by universities in Japan for transfer of credit.

These types of institutions are comparable to the non-academic postsecondary sector in the United States: allied health schools, language schools, computer schools, electronics schools, automotive vehicle maintenance schools, etc.

The subject matter taught at a senmon gakko or senshu gakko can be related to subject matter taught at a junior college or university in Japan, just as the subject matter taught by a computer school in the United States can be related to the subject matter in computer science taught at a community college or university in the United States. This relationship does not affect the nature of the teaching institution or the nature of the educational programs that it offers.

It would be appropriate to apply to a senmon gakko nursing program in Japan the policies that you apply to allied health programs offered by postsecondary institutions in the United States that do not have regional accreditation.

Q.

Does a three-year Bachelor of Science (Honours) degree from Lahore University of Management Sciences in Pakistan make one eligible for graduate admission?

My reference material on Pakistan indicates that a master’s degree is the minimum qualification for admission to graduate programs. Exceptions would be those bachelor’s degrees that represent a minimum of four years of study.

According to the applicant, Lahore University of Management Science (LUMS) was recently approved to offer undergraduate degrees. He said that the B.Sc. (Hons.) is a four-year degree. However, students have the option to complete the program in more or less time depending on the work load they take.
BOOK REVIEWS

Bright College Years: Inside the American College Today

By Anne Matthews

Simon and Schuster, 1997
288 pages, Softcover, $23.00

In journalist Ann Matthews’ portrait of today’s US college campuses, she paints a picture of a major industry that has undergone tremendous change in the last twenty-five years, from a safe haven for intellectual pursuits to an enterprise driven by the needs of business to downsize, to be cost accountable, and to compete in the marketplace. To illustrate the new attitudes on college campuses, she examines three primary groups in college: those who learn, those who teach, and those who manage the enterprise.

Her research methods are impressive. She spent four years on research, conducting more than 400 on-campus interviews. This truly is an insider’s view of the university in the United States today. This “native daughter’s field notes” (she grew up as the daughter of a professor at the University of Wisconsin and has herself taught at the university level) are largely anecdotal. Matthews’ goal in writing this mainstream book is to show a wide audience what the college campus is like today. She feels it is a major enterprise that has largely gone unstudied. Her book will delight and disturb higher education’s defenders and critics alike.

The book’s title comes from a nineteenth century college song that originated at Yale:

Bright college years, with pleasure rife,
The shortest, gladdest years of life.

While Matthews stirs some nostalgia, in, for example, her look back to typical campus life in the early 1960s, her view of higher education today shows the remarkable change that has taken place in the academy over the last three decades. She sees American higher education as “a chunk of the twelfth century dropped live and squabbling on the threshold of the twenty-first.” She sees the American college today buffeted by the same economic and demographic forces that are reshaping the rest of society and sees campus autonomy under increasing attack, from the public, the media, but mostly from government. And she asks some very tough questions: What’s going on in there? What is college for these days? And is the product worth the price?

Matthews illustrates the enormity of the US higher education enterprise by noting that it employs 2.5 million people, more than the auto, steel, and textile industries combined. The total American college enterprise costs $300 billion annually, more than the computer business. Each year, one million freshmen enroll in American four-year colleges, joining a system that annually enrolls nine million full-time and three million part-time students. In contrast to an advanced post-industrial country like Japan, where only 10 percent of secondary school graduates enter college, in the US, 50 percent attempt some form of college study.

Matthews’ book is filled with facts about American colleges, but her primary contribution involves her actual visits to an array of college sites and her wonderful descriptions of these experiences. She begins her book with a visit to a national college fair for 20,000 high school juniors in Manhattan. The highly selective Ivy League schools are not in attendance, but hundreds of other colleges are eager to corral the warm bodies at this and other fairs across the country.

A visit to Sinte Gleska University in South Dakota, the nation’s first Native American university, is hopeful, but life on a campus of prefab and trailer buildings is a long way from the “college green.” Sinte Gleska does not rank high on U.S. News and World Report’s national rankings, but it represents hope in this isolated area of America where real learning takes place minus a student union, a large library, and athletic teams.

I found two of Matthews’ visits especially discouraging. The first is her visit to the student social scene at Arizona State University. The almost fatalistic amount of binge drinking at ASU that Matthews describes (and among a large percentage of American traditional college age students) is hard to comprehend. One will not forget easily her haunting reflection of this very dark side of contemporary college life. Matthews grimly notes that the average national college student academic workload is now twenty-nine hours per week, as opposed to the sixty hours that students completed in the early 1960s. At Duke, where the leadership has pushed for a stronger intellectual climate, students can be seen in T-shirts that read, “You can lead me to college, but you can’t make me think.”

I was also discouraged by the author’s midnight visit to a northeastern college computer lab. (Dartmouth perhaps? Or MIT?) She sees the computer cluster as a life raft and students so deep into computer coding that life becomes close to science fiction. One student reports, “You know you are changing the night you start dreaming in C (code).” Is this the purpose of college, for students to become so specialized that computer coding becomes the end purpose of their lives?

More encouraging is Matthews’ visit to the annual meeting of the Modern
individuals at the national symposium, "Does U.S. Higher Education Need Foreign Policy?" held June 20-21, 1994, in Princeton, New Jersey, have since been circulated to a number of institutional representatives, presented to sessions at the Association of International Education Administrators, and given to the executive directors of the regional accrediting bodies. The succinct standards illustrate a good use of an autonomous regulatory tool and may be voluntarily adopted by institutions, or at least used by them as a prime reference. The book’s postlude touches upon the future trend of higher education and stresses the implications for US higher education in the growing global economy.

This publication will be a valuable resource for those involved in international programs of higher education. The more aware an institution becomes of the many intricacies involved in accrediting credit-bearing programs abroad, the better it can serve the students of host countries and likewise promote US higher education. Although at times the book becomes redundant, the continual emphasis on accreditation drives home the importance of utilizing standards of educational achievement in the pursuit of institutional success in the global arena.

Margaret Dalrymple
Research Analyst, Office of the Registrar
Purdue University

LETTERS TO THE EDITOR

To the Editor:
I am impressed by the new cover design of C&U. It is functional, informational, and comports with the purposes of maintaining a journal for an Association like ours. One can see at a glance what the particular issue contains. The selection of artwork that formerly graced the cover was attractive in appearance, but did little to differentiate C&U from a magazine, or to recognize AACRAO for what it is.

At the risk of sounding like an old curmudgeon, I would like to see C&U return to its former 5" x 9" size or something close to those dimensions. That size makes for a compact volume that fits more neatly on the average bookshelf and which allows for limited publication data to be printed on its spine. That, in turn, makes for easy referral to past issues.

Thomas L. W. Johnson
Executive Associate Registrar
University of Wisconsin-Madison

Dear Editor,
I have been a reader of C&U for over ten years and find the articles interesting and timely. I would like to see articles about specific administrative problems and how those problems were resolved. I would also like to read more case studies of institutions currently using enrollment management strategies. Concerning this "hot" trend in higher education, why not include articles on all the administrative aspects of enrollment management including financial aid?

I like the new cover of C&U. It looks very professional and makes finding an article faster. I also like the present magazine size. It is easy to read and fits nicely in my briefcase.

Congratulations on your efforts to keep C&U responsive to its readers’ needs.

Lourdes Silva
Associate VP for Enrollment Services
Illinois Institute of Technology

Dear Editor,
I find this journal insightful, informative, and useful, as is the AACRAO organization. The new cover (Summer/Fall 1998) accurately portrays the professional and scholarly image of our organization. However, please don’t change the 8 1/2" x 11" size. This larger size makes for easier reading on the visuals and graphics. Your dedication and hard work show through in making such a great journal. Keep up the good work!

(The "your" in the last sentence unquestionably refers to the members of the C&U Editorial Board. Ed.)
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Dennis Nostrand, Vice President for Enrollment Management at Beaver College, is sold on Quodata's software and service.

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